



E-Readiness for E-Commerce Development in Bangladesh

By

ASM Nazmul Hasan
MPPG 5th Batch

December 2016



Public Policy & Governance Program
North South University



E-Readiness for E-Commerce Development in Bangladesh

By

ASM Nazmul Hasan
MPPG 5th Batch

Supervisor
Dr. Rizwan Khair
Associate Professor

Thesis submitted to the
Public Policy and Governance (PPG) Program
in partial fulfillment for the award of

Master in Public Policy and Governance (MPPG)

December 2016



Public Policy & Governance Program
North South University

***“Dedicated to my spouse and kids because the work was possible
due to their temporary absence with me”***

Declaration

I declare that the dissertation entitled “E-Readiness for E-Commerce Development in Bangladesh” submitted to the PPG Program of North South University, Bangladesh for the Degree of Master in Public Policy and Governance (MPPG) is an original work of mine. No part of it, in any form, has been copied from other sources without acknowledgement or submitted to any other university or institute for any degree or diploma. Views and expressions of the thesis bear the responsibility of mine with the exclusion of PPG for any errors and omissions to it.

Signature with Date:

Full Name: **ASM Nazmul Hasan**

ID No: **1513354085**

Acknowledgement

First of all praise to Allah, the most magnificent and the most merciful for keeping me in such a favorable condition for completing the thesis work. Then I would like to take opportunity to express my deepest gratitude to my supervisor Dr. Rizwan Khair, visiting Associate Professor, Department of Political Science and Sociology, North South University, Dhaka and Director (International Program), Bangladesh Public Administration Training Centre (BPATC), Savar, Dhaka for his kind support and ceaseless guidance throughout the research work. His intellectual suggestions shaped my raw idea from the very beginning that helped me a lot to explore more in the research work.

I would like to convey my sincere appreciation to Professor Salahuddin M. Aminuzzaman, Adviser, MPPG, North South University, Dhaka and Professor SK. Tawfique M. Haque, Director, MPPG, North South University, Dhaka for delivering their meaningful comments and guideline during the total MPPG program including thesis presentation.

I am also very grateful to my teachers Dr. Istiaq Jamil, Dr. Md. Mahfuzul Haque and Dr. Shakil Ahmed for offering important suggestions and comments during the whole journey of my research work.

I would like to offer my sincere thanks to Mr. Md. Akram Hossain, Research Associate, MPPG, North South University, Dhaka for his cooperation with friendly attitude in spite of his severe busyness.

My special thanks to all of the interviewees who have given me huge time during their business peak hour with ample provided information. I am also very much thankful to the respondents for their sincere response in the questionnaire survey.

I am grateful to my family members especially to my respected parents for their support always.

December 2016

ASM Nazmul Hasan

Abstract

After the invention of computer and especially after introducing the computer networking, the world has experienced a completely new dimension in the communication sector. E-commerce is a product of this digital communication. It is now a reality for the developing country as well the developed world. For having healthy e-commerce in a country ensuring e-readiness is very essential. The study was planned to examine the e-readiness for the e-commerce development in Bangladesh which will give us an opportunity to understand our country's position regarding e-commerce.

Lot of writings on Bangladesh e-commerce has been found in the intellectual arena. Most of those writings are for advocating on behalf of particular groups or corporate organizations. But this study is an academic one to investigate e-readiness for the development of Bangladesh e-commerce. In this aspect this is expected that the study will be unique one to investigate the e-readiness of e-commerce development in Bangladesh.

To fulfill the target, the research work was designed with the combination of qualitative and quantitative both methods. Qualitative data has been collected from the interviews, report, publications and case studies. Quantitative data was collected from the survey data and also from interviews and some reports. Both primary and secondary sources have been used to collect necessary data to conduct the study.

From the study it has found that Bangladesh e-commerce is a new sector that started its journey in year 2009 and more specifically it has been started in full pledge since year 2013. Meantime many e-commerce business units have been developed. Study shows that our e-commerce sector is not developed yet because of e-readiness issues. We have good infrastructural development in the city areas but in rural and urban areas the infrastructure is yet to develop. We have secured online communication but at user level we have less trust. Customer prefers hard cash payment after receiving products. People like to have SMS confirmation against every online transaction. Customer have less trust on business parties about e-commerce transaction and business entities also have lack of trust on customers for the same. Study revealed that third party involvement is needed to develop the trust between the customer and business. People feel the third party presence like globally renowned Paypal or any other trusted units. Government may need regulatory policies so that third party can be able to handle the legal issues, commercial transaction and also government can monitor and control these parties. Goods return policy is not practiced by most of the online business units. Development of our postal service is another concern for e-commerce development. It has been observed that government has no e-commerce friendly policy yet. ICT policies are not supportive enough to promote e-commerce activities.

This study concludes that we are now passing very vital time for e-commerce development. E-commerce may have some negative notions in our culture but spreading of e-commerce is inevitable because this is the product of ICT development. So now this is the time to take initiatives so that this new sector can be developed smoothly in Bangladesh.

Keywords: E-commerce, E-readiness, E-commerce Development, Bangladesh e-commerce.

Table of Contents

	Page No.
Acknowledgement	II
Abstract.....	III
Table of Contents.....	IV
List of Tables.....	VII
List of Figures.....	VIII
Acronyms & Abbreviations.....	IX
CHAPTER-1 : Introduction.....	1
1.1 Introduction	1
1.2 Background of the Study.....	2
1.3 Definition of E-Commerce.....	5
1.4 E-Commerce and E-Business.....	9
1.5 E-Readiness	10
1.6 E-Commerce and E-Government	14
1.7 Category of Commerce	16
1.8 Objective of the study.....	17
1.9 Research Questions	18
1.10 Rationale of the Study.....	18
1.11 Chapter Outline.....	19
CHAPTER-2 : Literature Review, Theoretical Concepts & Framework	21
2.1 Introduction	21
2.2 Literature Review	21
2.3 Theoretical Discussion	30
2.4 Analytical Framework	33
2.5 Chapter Conclusion	36
CHAPTER-3 : Methodology	37
3.1 Introduction	37
3.2 Methodology.....	37
3.3 Data Collection.....	38
3.4 Primary Data from Survey.....	38

3.5	Primary Data from Interview	39
3.6	Content Analysis	39
3.7	Scope and Limitation of the Study	40
CHAPTER-4 : Current State of Bangladesh ICT & e-Commerce		42
4.1	Introduction	42
4.2	ICT Sector of Bangladesh	42
4.3	Policies Related to ICT.....	43
4.4	National ICT Policy and E-Commerce Policy	44
4.5	E-Commerce Market of Bangladesh	49
4.6	Major E-Commerce Segments in Bangladesh.....	52
4.7	E-Commerce Web Portals	53
4.8	Global E-commerce and Bangladesh	54
4.9	Beginning of E-commerce in Bangladesh.....	54
4.10	Year 2013: The Rise of E-commerce	56
4.11	Chapter Conclusion	57
CHAPTER-5 : Data Presentation, Analysis and Discussion.....		58
5.1	Introduction	58
5.2	Data Collection.....	58
5.3	Data Collection from Survey	58
5.4	Survey data output according to variables	59
5.5	Data Collection from Interviews	74
5.6	Case Study.....	82
5.7	Analysis	86
5.8	Discussion.....	88
5.9	Observations on Research Questions	89
5.10	Analyzing Findings using Analytical Framework	90
5.11	Chapter Conclusion	92
CHAPTER-6 : Conclusion		93
6.1	Introduction	93
6.2	Future Policy Recommendations	94
6.3	Way Forward.....	95

6.4 Scope for future research	96
References.....	98
Appendix I	104
Appendix II	105
Appendix III	110
Appendix IV	115
Appendix V	121
Appendix VI	124

List of Tables

	Page No.
Table 1: Layer of e-commerce	15
Table 2: ICT Scenario in Bangladesh	43
Table 3: Status of the IT Sector in year 2015	47
Table 4: Male-Female Ratio	59
Table 5: The Academic Status of the Respondent	60
Table 6: Accessibility of Internet.....	61
Table 7: Device using for internet.....	63
Table 8: Mostly Visited e-commerce sites	65
Table 9: E-Commerce Status	78
Table 10: Analyzing the findings	90

List of Figures

	Page No.
Figure 1: Defining and measuring e-commerce.....	8
Figure 2: Models of Barriers.....	27
Figure 3: Triangle Relationship Model	32
Figure 4: PERM Model	33
Figure 5: Analytical Framework	34
Figure 6: The Profession of Respondents	60
Figure 7: Satisfaction about Internet Cost	62
Figure 8: Internet Speed in Bangladesh	62
Figure 9: Browsing internet for product details.....	63
Figure 10: E-Commerce Users.....	64
Figure 11: Future e-commerce Users	65
Figure 12: Effectiveness of ICT policy for e-Commerce	66
Figure 13: Satisfaction of Online Services in BD	67
Figure 14: Cyber Act in Bangladesh	68
Figure 15: Internet Security	69
Figure 16: SMS Notification	69
Figure 17: Reason of not doing e-commerce.....	70
Figure 18: Preference e-commerce Mode	71
Figure 19: Development of Bangladesh e-Commerce	71
Figure 20: E-Commerce pages and transactions.....	72
Figure 21: Mobile Phone Subscribers	73
Figure 22: Internet Users in Bangladesh.....	73
Figure 23: Internet (Bandwidth) Price	74
Figure 24: Third party between the two parties.....	88

Acronyms & Abbreviations

B2C	Business to Customer
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BHTPA	Bangladesh Hi-Tech Park Authority
C2C	Customer to Customer
E-Com	E-Commerce or Electronic Commerce
EDI	Electronic Data Interchange
ERQ	Exporters Retention Quota
FDI	Foreign Direct Investment
GITR	Global Information Technology Report
HTML	Hypertext Mark-up Language
ISP	Internet Service provider
NRI	National Readiness Index
OECD	Organization for Economic Co-operation and Development
PEER	perceived external e-Readiness
PERM	Perceived E-commerce Readiness Model
POER	perceived organizational e-Readiness
PSTN	Public Switched Telephone Network
RMG	Ready Made Garments
STEP	Standard for Exchange of Product model data
TDI	Technical Data Interchange
UNASPA	United Nations and American Society for Public Administration
UNCITRAL	United Nations Commission on International Trade Law
UNCTAD	United Nations Conference on Trade and Development
UNCTAD	United Nations Center for Trade and Development
UNICITRAL	United Nations Commission on International Trade Law
USAID	US Agency for International Development
WB	World Bank
WiMax	Worldwide Interoperability for Microwave Access
WITSA	World Information Technology and Services Alliance
WTO	World Trade Organization
XML	Extensible Mark-up Language

CHAPTER-1

Introduction

1.1 Introduction

In the context of technological advancement we experienced a virtual networked world within the real world. This virtual world was called as “The Sixth Continent” by some academicians. Internet is a very vast area that full of information. We have enough chances to play with the information within the vast sea as well as to communicate from one corner of the world to other corner within a few seconds. Various types of intercommunication may take place thru internet. Besides the other communication there are also remarkable commercial data transactions between two units over internet. So it can be easily said that e-commerce is one of the most significant technological accomplishments of the modern era. In simple words it can be said that e-commerce means the electronic data communication between two terminals in order to settle commercial activities between those two regardless their geographical location. In that sense e-Commerce has broken the boundary of time and space. From the other point of view it can be mentioned here that electronic commerce is the most significant industrial revolution with more influences on human then the former industrial revolutions because it is productively rising, promoting economic operations, lower the operational cost, making impossible things possible. Moreover e-commerce influences peoples’ social life styles and also changing their world outlook and methodology.

In the era of modern digital economy e-com is one of the most thinkable significant terms. World’s internet population is growing very rapidly and it is touching every sector of our life globally. Our mail has turned into e-mail, book has turned into e-book, and image has turned into e-image and even our commerce is turning into e-commerce. In seems that our thinking is now turning into e-thinking! In general the term commerce means the activity of distributing products or services to different parties who have the capability as well as

intention to buy the materials or products. When this type of business or commercial data transfer depends on digital communication means using internet and web-oriented services for transferring information, the overall process is termed as e-commerce.

E-com is blooming very rapidly in global context as well as in Bangladesh. But in spite of having a large population the e-commerce market share in Bangladesh is not because of some reasons. It is quite natural for Bangladesh that there are few customers, especially from the young generation who are interested and can often shop via internet. It might take more few years to develop, but there are some evidences showing that this sector is growing rapidly and very soon it will reach at a prosperous stage. There are over 3 billion internet users worldwide in 2015 and there is a forecast that one more billion may be added by 2016. Meantime e-commerce is being considered as a separate, profitable field of business and e-commerce actors are updating their business to business models, as well as embracing the social media. E-com is the right tool for gaining competitive advantages now-a-days in Bangladesh. In case of Bangladesh, the broader definition of e-commerce is accepted to all. Like traditional commerce, e-commerce does not involve only to buying and selling of goods and services, it rather includes intra-company and inter-company function like negotiations and transactions, manufacturing and marketing etc. using EDI communication, file transferring, video conferencing, etc. Based on the using of electronic means, an organization can be a complete or sometimes may be a partial e-com user. Right now there are few companies running their business fully based on e-commerce but the list of e-commerce using companies are getting long day by day. Email communication, fax communication, telephone communication etc. are now wiping out from the market slowly by the interactive websites, apps and EDI in some cases. As govt. is in the track of digitization, ultimately it will promote e-commerce activities in the country. In order to achieve digital Bangladeshi e-commerce is one of our major requirements for successful digitization.

1.2 Background of the Study

Bangladesh e-commerce sector is very new comparing with the other part of the world. E-commerce has been started in Bangladesh in late 90s. But the official starting of e-commerce in Bangladesh was in year 2009 when Bangladesh Bank allowed official online

payment within the country. After the official starting in the year 2013, the year was the most important in the e-commerce history. In this year there were arrangement of e-commerce fair, e-commerce week and international credit card using facility given by Bangladesh Bank. E-Commerce is more than we usually think. E-Commerce is more than just purchasing and offering things over the Internet like through Bikory.com or OLX.bd in Bangladesh and Amazon globally. E-commerce is a wider term about electronic trade of business; and transforming the information from one computer to other computer among the organizations. There may be a question why come e-commerce is so attractive for a lot of traditional businesses. E-commerce is indirectly changing the peoples' business techniques. From large corporations to small industries, businesses are going through internet. The modern business oriented companies are now doing their products and service offers targeting to new groups of people. Because of e-commerce the business organizations also gets enough channels and scope to offer their products or services to the customer.

With the continuous dispersion of information technology especially the web, the global business entity is rapidly moving towards e-commerce. In fact for the business entities they have no better choices than e-commerce. The buyers, importers or customers are enjoying the advantages when the Internet provides the opportunity to access the global market. Thus they also can compare prices across the geographical location, find out whether purchase rates vary in different markets and also get a chance to pick the alternative products. On the other hand, the sellers or exporters also can get chances to be well decorated and appealing in the cyber world through web portals or pages. So it can be also mentioned that like consumers, product sellers are also benefited getting more efficient access in global market through the web. Bangladesh adopted an economic policy that is led by export growth. With the rising forces of globalization, it is getting more important that the private sector, especially the export sector is well prepared to meet the necessary needs and expectations of the foreign importers. International organizations such as UNCTAD (United Nations Center for Trade and Development) and WTO (World Trade Organization) have stressed on the importance of e-commerce for developing countries over the last few years. UNCTAD has taken some special programs to facilitate developing countries to transition into e-commerce. The WTO has also developed rules and guidelines for global e-

commerce transactions. Though being a developing country, few of the Bangladeshi business community has embraced technology with targeted success. Computers and the Internet are now continuously using as day-to-day business tools. These positive indicators are developing the prospects of e-commerce in Bangladesh. Some sectors are given below-

- Online Local Shopping.
- Export Oriented RMG Sector
- Online Services, Cards and Gifts
- Online Banking
- Oil and Gas sector
- Online Transportation System, Hotel Management and Tourism etc.
- Other Public Sector Mechanism

The fast increasing internet users are creating provision of spreading e-commerce as e-commerce need strong internet coverage. In Bangladesh the mobile service users are about 100 million and from those about 15 or 20 percent users access versatile online Banking Services. According to Bangladesh Bank statistics, around 1 million versatile clients access the mobile banking benefits. Over 10Billion transactions are made through mobile banking accounts. Digital Bangladesh is a proposal of current government that involves the use of ICT for management, administration and governance in order to ensure transparency, accountability and answerability at all stages of people in the state. Without the development of ICT sector, the dream of a Digital Bangladesh would become as a nightmare for the government. ICT is also a combination of both physical infrastructure and also the brain. Many types of computers, Network equipment, required software, wired and wireless inter connectivity, Broadcast equipment and many other accessories are the physical structure. Qualified professionals behind this big infrastructure act as a brain. To materialize the idea of digital Bangladesh, development of countrywide infrastructure and a large number of qualified human resources are necessary.

Poor governance can be both an indirect cause and an indirect effect of ineffective e-commerce development. If the business cost remains high, suffered by bottlenecks, bureaucratic so called red tape and corruption, the efficiency gains from e-commerce may become fading. Trade and commerce through e-commerce assumes business norms and

practices that are mutually acceptable or understandable between buyers and sellers. Poor governance discourages overall trade and e-commerce in particular. The major reasons for poor Foreign Direct Investment (FDI) in Bangladesh are its small domestic market, poor infrastructural facilities, weak governance, lack of e-facilities and vulnerable law and order conditions. E-commerce and FDI are likely to reinforce each other's presence and growth. Acceptance and successful application of e-commerce would enrich the overall business environment, sending positive signals to foreign investors that it is becoming easier to do business in Bangladesh.

In Bangladesh, there is a great deal of interest in e-business; however, due to various economic, societal, infrastructural and legal reasons it has not spread that much. Most big companies, especially the multinational companies, associations, chambers and government offices have set up websites. However these web sites mainly provide information about the organization, and its products and services. Some of these sites are static and some are dynamic. There are very few sites where financial transactions can be completed. Main reasons for low e-commerce transactions are absence of legal framework for completing an electronic business or financial payment system, low Internet usage due to lack of adequate telecom facilities, and overall lack of confidence in the security and reliability of e-commerce transactions. So it can be easily predicted that once these shortcomings are taken care of, there are huge potentialities of e-commerce growing in Bangladesh market in the near future. Having 160 million populations, it is really a big market of e-commerce. To ensure good governance, e-commerce is also very important. So it is time now to check out the e-readiness issues for e-commerce activities and also need to resolve the challenges of e-commerce in Bangladesh.

1.3 Definition of E-Commerce

E-Commerce is often thought simply to refer to buy and sell over the Internet; general people immediately think of consumer retail purchases from companies such as Amazon. But e-commerce involves much more than we think about electronically mediated financial transactions between organizations and customers. E-commerce should be considered as all electronically mediated transactions between two entities and also any third party it deals with. By this definition, non-financial transactions such as customer requests for further

information would also be considered to be part of e-commerce. Kalakota and Whinston (1997) refer to a range of different perspectives for e-commerce:

1. Communication perspective –Information delivery, product or service delivery or the payment may settled by electronic means.
2. Business Process Perspective – Application of technology for the automation of business transactions and workflows.
3. Service Perspective – Reducing cost and increasing the speed and quality of service delivery.
4. Online perspective –Buying, Selling and choosing of products and information online.

The UK government also used a broad definition when explaining the scope of e-commerce to industry:

“E-commerce is the exchange of information across electronic networks, at any stage in the supply chain, whether within an organization, between businesses, between businesses and consumers, or between the public and private sector, whether paid or unpaid”. Cabinet Office (1999), Chaffey (2009),

“Electronic commerce is the carrying out of business activities that lead to an exchange of value across telecommunications networks.” (EITO, 1997)

“Electronic commerce refers generally to all forms of transactions relating to commercial activities, including both organizations and individuals that are based upon the processing and transmission of digitized data, including text, sound and visual images.” (OECD, 1997)

“Electronic commerce is about doing business electronically. It is based on the electronic processing and transmission of data, including text, sound and video. It encompasses many diverse activities including electronic trading of goods and services, online delivery of digital content, electronic fund transfers, electronic share trading, electronic bills of lading, commercial auctions, collaborative design and engineering, online sourcing, public procurement, direct consumer marketing, and after-sales service. It involves both products

(e.g. consumer goods, specialized medical equipment) and services (e.g. information services, financial and legal services); traditional activities (e.g. healthcare, education) and new activities (e.g. virtual malls).”(European Commission, 1997).

“The Internet will also revolutionize retail and direct marketing. Consumers will be able to shop in their homes for a wide variety of products from manufacturers and retailers all over the world. They will be able to view these products on their computers or televisions, access information about the products, visualize the way the products may fit together (constructing a room of furniture on their screen, for example), and order and pay for their choice, all from their living rooms”. (US Executive Office of the President, 1997)

The above mentioned e-commerce definitions are broad because those definitions show the real commercial transactions between buyers and sellers and also the activities that settled the transaction.

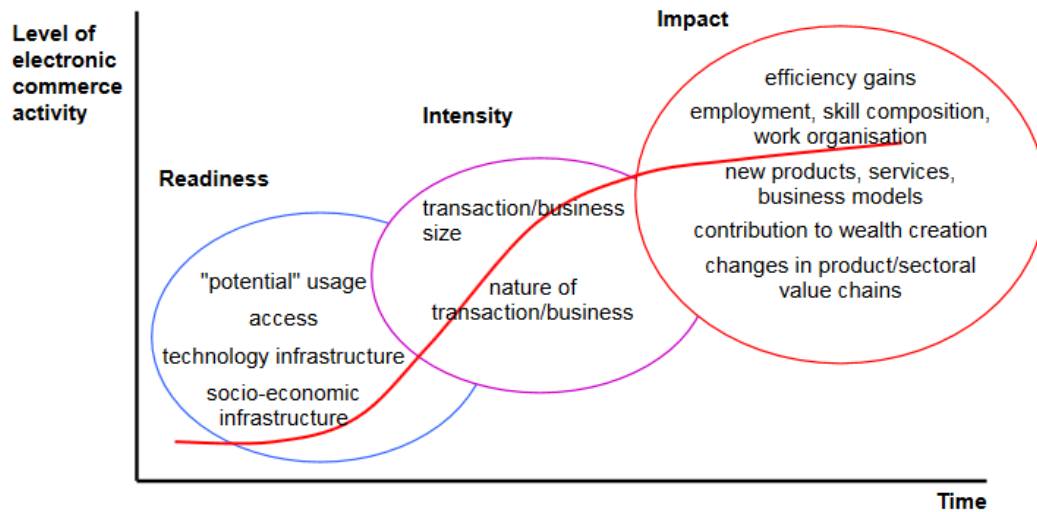
Besides this, the definitions came from policy makers are often very expansive, as they want to understand the impact of e-commerce across the economy and overall business processes. Moreover, they also may need for data at a very fine level as there is a need for measuring different e-commerce segments as the drivers, technological solutions, impacts and policy implications may be different. There are three basic sets of indicators required for policy purposes: those are relating to Readiness, to Intensity and to Impacts. The policy needs and the indicators will vary depending on the degree of e-commerce activity that is occurring. Initially there will be a demand for indicators about how ready an economy is for participating in e-commerce; subsequently there will be a set of indicators required to measure the intensity of the use of e-commerce; at later stages of development of e-commerce there will be a need for indicators about the impact of e-commerce on the economy and society generally.

Readiness- Calculating the overall ICT infrastructure in a certain place for allowing e-commerce activities,

Intensity- Measuring the extent to which users are utilizing e-commerce to undertake their general business and social processes, and

Impacts- Assessing the impact of e-commerce on the economy and society.

Figure 1: Defining and measuring e-commerce



Operation Definition (Narrow) of e-commerce is- “Orders received/placed on a Web page, over Extranets and other applications that run over the Internet, such as EDI over the Internet, Minitel over the Internet, or any other Web enabled application regardless of how the Web is accessed (e.g. through a mobile phone or a TV set). The payment and the ultimate delivery of the goods or services may be conducted on- or off-line” (OECD, 1999).

Operation Definition (Broad) of e-commerce is-“E-commerce Includes all Internet transaction as defined above plus orders received/placed over EDI or any other online applications used in automated transactions (e.g. interactive telephone systems). Orders received/ placed using facsimile, telephone or non-interactive e-mail should not be included. The payment and the ultimate delivery of the goods or services may be conducted on- or off-line”. (OECD, 1999)

E-commerce is now a profitable way to conduct business which goes more than a simple movement of information and doing the electronic transactions. Moreover E-commerce uses various communication way and standards like Electronic Data Interchange (EDI), Technical Data Interchange (TDI), Extensible Mark-up Language (XML), Hypertext Mark-up Language (HTML) and the Standard for Exchange of Product model data (STEP). E-commerce

is getting more possible and flexible through the expansion of technologies specially the Internet or World Wide Web (WWW) Networks.

After observing lot of definitions given by academicians and different organization, operational definition of e-commerce can be “E-commerce is a trading of human needs through electronic sites, paying for these needs using different payment methods both online and offline”.

1.4 E-Commerce and E-Business

E-commerce and e-business may sound the same but there is a clear distinction between e-business and e-commerce. E-commerce only includes commercial transactions and e-business indicates all other forms of business processes. Transaction over internet network is essential for both e-business and e-commerce activities.

E-business has introduced new opportunities for small and large organizations to compete in the global marketplace. Internet communication always provides the citizen some advanced facilities or advantages rather than manual communication.

E-commerce is an important part of e-business. E-business is a generic term and encompasses the whole firm with the integration of all electronic processes from providers to consumers (Papazoglou and Ribbers, 2006).

According to Chaffey (2009) e-business (e’biz’nis) is the transformation of key business processes through the use of Internet technologies. So e-commerce can be conceived of as a subset of e-business. The buy-side e-commerce transactions with suppliers and the sell-side e-commerce transactions with customers can also be considered to be two key-business processes. Broadly it can be said that e-commerce overlap the e-business or e-commerce is a subset of e-business or e-commerce or e-business is almost the same thing.

In fact e-commerce is included in e-business and moreover e-business covers many internal processes like production, product development, inventory management, risk management, finance and human resources. E-business strategy is more complex and wider activity than e-commerce activity.

1.5 E-Readiness

E-Readiness generally means the maturity of a country, area or entity for participating in the electronic world like e-commerce, e-government etc. It is also the ability of a country to use ICT for her development. World economy is now shifting towards its new dimension. This new economy is digital economy that requires e-readiness for its successful journey. In greater aspect, it is assumed that the country development depends on e-readiness directly nowadays. We are now passing through the digital age. In this digital age e-readiness means the electronic readiness of a country to perform its various activities related to country development especially ICT development. According to World Bank, e-readiness means "To put ICT to effective use, a country must be "e-ready" in terms of infrastructure, the accessibility of ICT to the population at large, and the effect of the legal and regulatory framework on ICT use." E-readiness of a country enables the government goals, benchmarking of progress, collaborations, determining vision etc. The various global studies bring out multiple indicators for the assessment. Some of those findings are mentioned here-

APEC's E-Commerce Readiness Assessment:

Six categories are measured for "readiness for e-commerce:"

1. Basic infrastructure and technology (speed, pricing, access, market competition, industry standards, foreign investment),
2. Access to network services (bandwidth, industry diversity, export controls, credit card regulation),
3. Use of the Internet (use in business, government, homes),
4. Promotion and facilitation (industry led standards),
5. Skills and human resources (ICT education, workforce), and
6. Positioning for the digital economy (taxes and tariffs, industry self-regulation, government regulations, consumer trust).

The Economist Intelligence Unit/Pyramid Research e-readiness rankings:

E-readiness is a measure of the quality of a country's ICT infrastructure and the ability of its consumers, businesses and governments to use ICT to their benefit. When a country uses ICT to conduct more of its activities, the economy can become more transparent and efficient. Our ranking allows governments to gauge the success of their technology initiatives against those of other countries. It also provides companies that wish to invest or trade internationally with an overview of the world's most promising business locations from an ICT perspective. Over 100 separate criteria, both qualitative and quantitative, are evaluated for each country by the Economist Intelligence Unit's team of analysts. These criteria are scored on their relative presence (or lack thereof) in a country's economic, political or social landscape. The categories, and the individual criteria within them, are weighted according to our assumptions of their relative importance in fostering a country's information economy. Economist Intelligence Unit e-readiness rankings, 2009 report measures six areas: (Here the scoring criteria categories and weights are given as follows)

1. Connectivity and technology infrastructure 20%
2. Business environment 15%
3. Social and cultural environment 15%
4. Legal environment 10%
5. Government policy and vision 15%
6. Consumer and business adoption 25%

Source: Economist Intelligence Unit, 2009

Metric-net: The 2002 Global technology Index:

The report measures five areas:

1. Knowledge Jobs
2. Globalization
3. Economic Dynamism and Competition
4. Transformation to a Digital Economy
5. Technological Innovation Capacity

Network Readiness Index (NRI) CID, Harvard:

The Network readiness Index is based on two major indices

1. Network Use
2. Enabling Factors - Information Infrastructure, Hardware, Software and Support, ICT Policy, Business and Economic Environment, Network Learning, ICT Opportunity, Social Capital, E-Government, E-Commerce, General Infrastructure

WITSA International Survey of E-Commerce:

It measures the Internet within a country at a particular point in time by measuring eight dimensions:

- a) Trust
- b) Technology
- c) Workforce Issues
- d) Public Policy
- e) Taxation
- f) Business Process
- g) Costs
- h) Consumer Attitude

U.S. Agency for International Development (USAID):

Detailed case studies of countries using a framework of four P's

- 1) Pipes (Access),
- 2) Public Sector (Government Policies, E-Government),
- 3) Private Sector (Usage),
- 4) People (Training)

World Economic Forum:

Three categories are measured for E-Readiness

- a) Policy
- b) Basic Infrastructure
- c) Ground level Projects

After consulting the various literatures on the e-readiness issues of a country we can conclude that some of the vital indicators of e-readiness for e-commerce development are-

1. ICT Infrastructure
2. Technology
3. E-Business Environment
4. E-Government
5. Public Policy and Vision
6. Knowledgeable Citizen

1.6 E-readiness and Bangladesh

In Bangladesh there is no such study of e-readiness before. There are some international studies on e-readiness. In 2009 economist intelligent unit did e-readiness rankings where total 70 countries were ranked. Top position was achieved by Denmark having 8.87 score out of 10. USA was in 6th position having score 8.60 and Canada was in 9th position having score of 8.33. In that ranking table our neighbor country India was in 54th position having score of 4.17 only. Azerbaijan was at the bottom of the table with 70th position scoring 2.97 only. Unfortunately Bangladesh was not in the table as the country was not able to have position within 70 of that table. The study considered Connectivity and technology infrastructure, Business environment, Social and Cultural environment, Legal environment, Government policy and vision, consumer and business adoption during the ranking.

In the year 2015 world economic forum published a report named “The Global Information Technology Report 2015”. Prior publishing this report the World Economic Forum and its partner INSEAD in 2001, recognized the need for a report such as The Global Information Technology Report (GITR) because of the increasing proliferation of technology and its effects on advancing global competitiveness. Now, nearly 15 years later, they are fully experiencing the profound impact that ICTs can bring to businesses, countries, and societies

and that stimulate the global economy. From this understanding they published such a report. In the report of 2015, the Networked Readiness Index (NRI)¹ for 143 countries was published. In that NRI table, Bangladesh is in 109 position having score of 3.3 out of 7. In the same report India's position is 89 having 3.7 score, Pakistan is at 112th position having score is 3.3, Sri Lanka is at 65th position having score 4.1, Nepal is in 118th position having 3.2 score, Bhutan is in 78th position having score 4.6. The top position of the table was for Singapore having score 6.0 and the country at the bottom of the table is Chad that earns 2.3 score and 143rd position. Though Bangladesh is not in a good position in the table, but considering the neighboring country, it seems pretty. Moreover considering NRI, Bangladesh was 119th position in 2014 having score 3.2 and 114th position in 2013 having score 3.2. So there is a gradual improvement of e-readiness in Bangladesh.

1.6 E-Commerce and E-Government

E-Commerce is generally used to cover the marketing, sales, distribution, and delivery of goods, products and services by electronic means. Though use of electronic means was in vogue for some time, spread of Internet has boosted this mode of transactions significantly. Commercial transactions can be divided into three main stages;

1. Searching/advertising,
2. Order placement and payment, and
3. Delivery.

Usually first two stages of the mentioned stages are performed electronically and delivery is done physically except in cases of digitized information or software products.

¹ NRI depends on six principles: (1) a high-quality regulatory and business environment is critical in order to fully leverage ICTs and generate impact; (2) ICT readiness; (3) fully leveraging ICTs requires a society-wide effort: the government, the business sector, and the population at large each have a critical role to play; (4) ICT use should not be an end in itself; (5) the set of drivers— the environment, readiness, and usage; and (6) the networked readiness framework should provide clear policy guidance.

Business to Business (B2B) and Business to Consumer (B2C) are the usual commercial transactions, though the use of this business process is increasing in Government process now a days.

Table 1: Layer of e-commerce

	Government	Business	Consumer
Government	G2G (coordination)	G2B (information)	G2C (information)
Business	B2G (procurement)	B2B (e-commerce)	B2C (e-commerce)
Consumer	C2G (taxation)	C2B (price comparison)	C2C (auction)

As shown in Table 1, E-government refers to the application of e-commerce technologies to government and public services. In the same way that e-business can be understood as transactions with customers (citizens), suppliers and internal communications, e-government covers a similar range of applications:

- Citizens – facilities for dissemination of information and use of online services at local and national levels.
- Suppliers – government departments have a vast network of suppliers.
- Internal communications – this includes information collection and dissemination and e-mail and workflow systems for improving efficiency within government departments. (Chaffey, 2009)

E-Commerce is the subset of e-government. In general govt. takes initiative to promote ICT and more specifically sometimes to promote electronic governance for the benefit of citizens. There are very few initiatives taken directly to promote e-commerce activities. But in a sense, if e-government is strengthened; ultimately e-commerce activities will be accelerated. Basically to promote e-commerce govt. need not to go extra mile for this except few initiatives. In fact e-commerce is not something outsider. E-commerce is within the combination of three components Government, Business and Consumer. E-Commerce

takes place especially when transaction happens between B to B and B to C. Moreover govt. can participate in e-commerce activities in many ways like-

- Telecommunication
- Online data transaction for Citizen and Business
- Government Activities Related to Procurements
- Private Sector e-com activities by government
- Noncore Governmental Function Outsourcing. (Blakeley, 2001)

1.7 Category of Commerce

Considering the involvement of electronic means the e-commerce activities can be categorized in three categories. The three main dimensions can be differentiating as follows:

- **Traditional Commerce**, where products or services are physical, the process of the transaction is physical and the delivery agent is physical. For example a corner shop stocks newspapers that are bought with cash over the counter and are taken away by the customer out of the shop. However, in reality in today's world, it is very rare that a business is truly traditional because of the use of EPOS systems for payment (electronic point of sale systems).
- **Pure e-commerce**, where products or services are digital, the process of the transaction is digital and the delivery agent is digital. For example, software updates services of companies like Microsoft, Cisco, Symantec; downloading of electronic books; also be considered pure e-commerce.
- **Partial e-commerce**, where either one or two of the dimensions are physical. For example in the case of booksellers Amazon, the products (books) are physical, the process is digital and the delivery agent is physical.

Classifying e-commerce by degree of digitization is a useful way for managers to analyze the range of products/services they sell, the processes of carrying out and finalizing the transaction and the way the product/service is delivered. By identifying the areas that could potentially be digitized, organizations can re-engineer their business processes to improve

efficiency, reduce costs, access global markets and benefit from the advantages presented by e-commerce and e-business.

Overview of implementation stage of Bangladesh e-Commerce:

Bangladesh e-commerce sector is very new and flourishing day by day. On the way of the e-commerce journey, many government ministries, sections and divisions are involved in many stages like-

- Ministry of Commerce, Ministry of ICT and Planning Commission are jointly implementing the e-commerce in Bangladesh
- Commerce secretary is in chair of e-Commerce committee
- Ministry of ICT is continuously working for enacting a law regarding “Electronic Transaction Act”
- Meantime some online order from foreign buyer has been started
- Online non-financial data transaction has already been started by all bank from 31 July, 2002
- Bangladesh Bank approved the intra-bank transaction from 31 July 2003
- Good number of banks started debit and credit card facilities for their consumers
- Bangladesh Bank has given permission for e-commerce in local currency through the commercial banks within the country in 2009.

1.8 Objective of the study

E-commerce has grown in the developed part of the world and has also in upward growing trend in Bangladesh recently. The impact of this rising influencing our societies and businesses arena. The new generation people are more interested to use e-commerce channel for their needs. Govt. is also formulating new policies to keep cope with this new trend. In this paper we aim to study the status of Bangladesh e-commerce in order to find out the e-readiness issues for the development of e-commerce in Bangladesh.

General objective:

To examine the e-readiness for the e-commerce development in Bangladesh which will give us an opportunity to understand our country's position regarding e-commerce.

Specified Objectives:

The specific objectives of this study will be as follows:

- To examine infrastructural situation of the country to enable effective electronic commerce system in Bangladesh;
- To examine the policy issues promoting e-commerce in Bangladesh.
- To get a clear idea about peoples' awareness and peoples' readiness for e-commerce activities.

1.9 Research Questions

This research effort searches answers of some questions. The research questions are-

1. What is the state of infrastructural and software inputs which can enable growth of e-commerce in Bangladesh?
2. How our ICT policy and laws are supportive for e-commerce?
3. How is the implementation of ICT policies enabling e-commerce in the country?
4. What is the situation of people's awareness on e-commerce issues?

1.10 Rationale of the Study

Studying on Bangladesh e-commerce is not a completely new thing. Several writings on Bangladesh e-commerce have been found in the intellectual arena. Most of those writings are for advocating on behalf of particular groups or corporate organizations. But this study is an academic one to investigate Bangladesh e-commerce for its promotion in Bangladesh from the perspective of e-commerce governance. Good governance is a widely discussed issue. Government, international development partners and national organizations are working on ensuring good governance. Good governance partly depends on e-governance and one of the important tools to ensure e-governance is e-commerce. For e-commerce

development, e-readiness is a must for any country. In this aspect this study will be unique one to investigate the e-readiness of e-commerce development in Bangladesh.

1.11 Chapter Outline

This research work has been planned for designing in six chapters. The arrangement of those six chapters is given below:

Chapter One: Introduction

This chapter will give an overview of the discussion that contains background, research problem, significance of the study, research questions, research objectives, scope and limitation of the study and structure of the thesis. This chapter will also give an overall idea of e-commerce and its related issues with a clear definition of e-commerce.

Chapter Two: Literature Review, Theoretical concepts and Analytical Framework

In this chapter some relevant and available literatures will be reviewed, applicable theory will be discussed, and will identify related variables from literature review and theory. After theoretical discussion, the analytical framework for this study will also be discussed in this chapter.

Chapter Three: Methodology

It will make an attempt to employ various methodological approaches used in this study. The reasons for use of various methodological approaches, how such approaches will be justified over others, and how those will be incorporated in this study will be kept in this chapter.

Chapter Four: Current State of Bangladesh ICT and E-Commerce

To understand the e-readiness for the e-commerce development, it is very important to have a clear impression of current scenario of Bangladesh ICT and e-commerce. Overview of the current state of ICT Sector in Bangladesh and the current e-commerce scenario of the

country will be elaborately mentioned in this chapter. Bangladesh ICT policy, e-commerce policy, infrastructure and related facts will be discussed in this chapter.

Chapter Five: Data Presentation, Analysis and Discussion

This chapter will highlight the major findings of the study. It will also establish a link between primary data and information drawn from all sources to address the research questions to meet the research objectives in the study. In this connection it also will discuss applicability of analytical framework compare with the previous relevant literature in explaining the research questions and objectives of the study and to what extent can findings are generalized.

Chapter Six: Conclusion

This chapter will draw major findings of the research and will makes concluding remarks of the study and how this study can be implicated for further research. Moreover this chapter will offer the way forward for better e-readiness of e-commerce development.

CHAPTER-2

Literature Review, Theoretical Concepts & Framework

2.1 Introduction

To meet the objectives and answer the research questions, reviewing the existing literatures related to the research topic and relevant theories and drawing an analytical framework for the study is important. This chapter starts with reviewing some available and relevant literature. Several literatures have studied over international journals, published materials, articles and internet. After theoretical discussion a compatible theory or model has been chosen for the work. At the last section of this chapter analytical framework and variable matrix is drawn based on the reviewed literatures.

2.2 Literature Review

There are lots of writings on e-commerce but very few writings focused on Bangladesh e-commerce. Some writings have found on Bangladesh e-commerce but those are mainly based on e-commerce business. To get a better understanding many of those existing literatures have been reviewed.

Among those writings, we have found a good writing “E-Readiness Assessment: Bangladesh, India, Nepal and Sri Lanka” by International Policy Fellow P.D. Kaushik (2002). In this writing overall e-readiness of the four countries were discussed mainly based on e-governance. E-commerce issues are not brought here. Moreover this is not a recent writing. Regarding ICT discussion, recent writing is preferable because ICT is a rapidly changeable term in the modern world. In this publication author compared the e-readiness scenario among Bangladesh, India, Sri Lanka and Nepal. He considers network access, internet availability, internet affordability, network speed and quality, hardware and software issues, service and support etc. for measuring the e-readiness among the mentioned countries.

As rightly told by Hamed, (2004) E-commerce is only a threat to traders who do not offer good services to their customers. E-Commerce creates a competition in the market and definitely people or citizen get the good result of this competition. The traders, producer, suppliers ultimately feel pressure to come in the market with good service or product offers.

One of the positive developments of this information era is enabling rapid communication between the government and its citizen. The ICTs have displayed their potential capability in repositioning governance from public to e-governance. E-governance is an emerging trend to remake the way the government works in virtual space, digital economy and in dealing with knowledge-oriented societies. E- Governance can be defined as the “application of electronic means with the interaction between government and citizen and government and business as well as in internal government operations to simplify and improve democratic, government and business aspects of Governance” (Backus, 2001).

Federal and state government business is an institution in and of itself. E-commerce has emerged as governments look at moving procurement online. The government market is strikingly similar to B2B. Government-to-consumer business has done well. For example, paying for a speeding ticket and a renewing driver’s license online have paid dividends to governments agencies as well as customers (Awad, 2004).

E-commerce is considered to be the buying and selling of information, products, and services via computer networks. Thus, a primary distinction between M-commerce and e-commerce lies in the differences between transactions and access. E-commerce is oriented toward supporting and realizing transactions. However, the wireless protocol originally designed to facilitate mobile commerce transactions, Wireless Application Protocol (WAP), has not fulfilled its technological promise, so the most distinctive feature of M-commerce that has emerged in many of the larger mobile markets is the facilitation of enhanced information network access (Laoudon and Traver, 2003)

Very important long-term technical changes are beginning to affect the payment systems, especially the continuing decline in computing costs and the physical size of powerful computer chips, along with the associated spread of powerful telecommunications technologies. The widespread availability and acceptability of computers both at home and

in the offices has accelerated the process. At the same time, the cost of communications has been falling dramatically, broadly opening up markets world-wide. These trends have a marked impact on the payment systems and they offer potentially significant avenues for improvement of the efficiency of existing arrangements and for the creation of new payment mechanisms (Chaffy, 2002).

Cohen et al., (2000) mentioned that the use of computers and the Internet for business are not widely understood in many developing countries, let alone e-commerce. Being part of global e-commerce processes requires knowledge of many complex systems including online promotion, international payments, and shipping that are beyond the current limited capacity of most businesses.

The revolution of e-commerce brings along some challenges, not only for the firms, but for governments as well. These challenges can influence at a microeconomic and macroeconomic environment level. E-commerce and e-business require a complete change of the business structure. Digital firms need to consider restructuring their entire business or even creating a new one. They need to implement new management processes, changes in their business culture and follow different procedures for managing their employees. Also, they need to create a new structure for information systems, networked processing functions and most importantly, they will need to change their entire business strategy (Chaffy, 2002; Laudon and Traver, 2003).

Copyright laws are carried over to e-commerce products and sales; there will be many changes in the online marketplace for information goods. Since people cannot make copies of material available on their own and sell them without the permission and copyright agreement in retail outlets, they should not be able to do that with videos, movies and books or other products sold online through e-commerce (Vernon, 2000). The same rights that apply to the real business world must also apply to the virtual and digital world of e-commerce, by using a combination of cryptographic techniques and laws guaranteeing that unauthorized copies of digital products cannot be made. The ease of transactions on the Internet would then force major changes (Fredricks, 2001).

Hawkins et al., (1998) argued that e-commerce provides extra benefit to the agricultural sector by providing better information about market prices and has fostered the emergence of new online commodity markets. In construction, it reduces the need for blueprints and allows seamless communications between subcontractors. In manufacturing, it generates new efficiencies by reducing procurement costs and improving supply chain management. Its role in the services sector is linked to qualitative aspects of products, such as convenience and customization, thereby reducing costs and delays and increasing reliability.

Buffam (2012) depicted that companies that build the better e-business solutions will outperform their competitors. Companies that made the best e-commerce solutions will transform themselves into zero-latency enterprises. Companies those are not choosing the e-business, or doing it not in effective manner, will be underperformed or be kicked out from the modern business.

Turban et al. (2012) had an argument that some points of managerial issues are very important like- Focus on Electronic commerce management; Sales promotion; Reconfiguring of purchasing process; on time delivery of ordered goods and services; new electronic communication between business; Provision of solutions and the Business ethics. He mentioned many e-commerce business models in this writing but the author mentioned that e-commerce itself a business model of modern world. This business model is especially developing since 2012 after new generation communication software like facebook, google+, twitter etc came in market.

Hoq, Kamal and Chowdhury (2012) argued on a basic reason why ecommerce, especially the business-to-business segment, is growing so rapidly is its significant impact on costs associated with inventories, sales promotion, purchasing and intangibles like banking and distribution costs. Like business to business e-commerce, the business to consumers e-commerce also growing as e-commerce minimize the cost for both the consumer and seller.

Uddin and Islam (2012) observed that the many-sided projections of ICT in human life justify a wining case for institutional consolidation of ICT related components in rural support programs taken by Governments and NGOs. ICT has a big impact on our day to day life and

e-commerce is going to be an important part of our regular activities. In developed countries both government and NGOs are working for making ICT reachable to the people.

Islam (2015) mentioned that e-payment security is the core for e-commerce activities. Without secure e-banking activities e-commerce will not be developed in a country. In his research he mentioned that the survey shows that customers and service providers are very much concerned e-payment and its security. E-payment is a part of e-readiness preparedness but not only element of e-readiness. In his research work the other elements of e-readiness were overlooked.

Hubert (2003) had a research on reality of e-commerce in the developing countries. According to author, the main effect of B2B e-commerce is to develop the relationships among existing business partners. There is a clear message for policy makers and related personnel that it is very important to understand how international trade is organized and how relationships among business entities are being developed. His study suggested that in Bangladesh mainly the buyers are playing a very vital role in the e-commerce development. The research work was basically regarding the e-commerce activities of garments industry and horticulture sector.

According to J. Pare (2002), policy makers should give proper attention on the e-readiness issues in the developing countries. E-commerce in many ways reduces the transaction cost and increases efficiency. Moreover, it also reduces the barriers to business activities in global platform. So from policy level view, e-readiness is a big concern.

Chia Chi Lin, (2003) described and examined e-commerce in the context of the relationship between business organizations and the customers. In this paper the author mentioned that the technology of electronic commerce decides what can be offered to consumers, but only the consumers determine which of those technologies will be accepted by them. The author argues that providing the highest customer facility by e-commerce can be viewed as making a genuine contribution to customers, that is shopping through online will be accepted by customers. Customer satisfaction is very important when measuring perceived customer delivered value that is offered by e-commerce. Customer need, customer value and customer cost are mainly the three considerable issues.

Chaffey (2006) conducted a research work with strategy and applications of E-Business and E-Commerce in a logical but robust manner. He stressed that e-business and e-commerce is very important for implementing management as such a bridge to link leading edge research and professional practice is required.

Laisuzzaman (2010) worked with the framework for the successful implementation of e-commerce in Bangladesh. According to this article Bangladesh is far-far away to adapt the main stream of e-commerce application but this writing didn't discover the actual preparedness of Bangladesh market. In fact it is seen that Bangladesh is not lag behind in e-commerce sector. Though the country is not e-commerce developed country but still it is in developing trend.

From the above mentioned literature review, it is evident that on line banking can act as a complementary towards e-business. With the help of e-business the country can create opportunities as this will help both producers and customers. But these theoretical observations may not be feasible in this country. As such the study seeks to evaluate whether how much our country is prepared for e-commerce? What are the statuses of e-commerce in our country? Does related policies are compatible with e-commerce promotion in Bangladesh?

E-Government projects are faced with different barriers and obstacles depending on the countries stage of growth in e-Government. However, Ebrahim and Irani (2005) have clarified that government leaders should recognize the importance of electronic government to improve the performance of the service towards the citizens. As Ndou (2004) puts it, governments face a wide range of challenges because of the multi-dimensionality and complexity of e-Government initiatives.

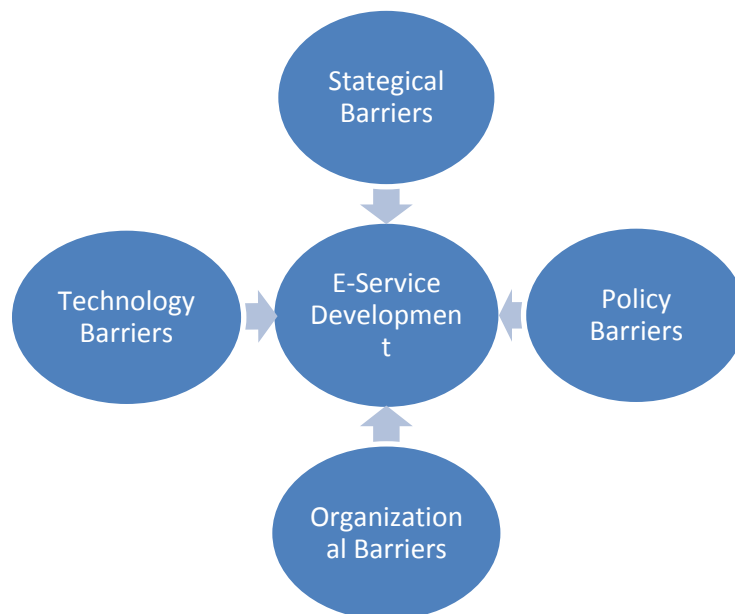
A number of framework and models regarding barriers to e-Government project developments have been developed and proposed by different academicians. Lam (2005) classified the comprehensive framework to explain the barriers of e-Government service delivery base on four categories: Strategy Barriers, Policy Barriers, Organizational Barriers, and Technology Barriers.

Lam (2005) explains various issues relating to the barriers as follows:

1. **Strategic barriers:** These are barriers such as lack of goals and objectives, over-ambitious objectives, lack of ownership, lack of guideline and financial Matter.
2. **Technical Barriers** – Include poor ICT infrastructure, lack of architecture integration, lack of data standard and lack of Security Model.
3. **Organizational Barriers** – such as lack of readiness, rapid pace of the reform, absence of a champion, management/technical skills and change challenges.
4. **Policy Barriers** – The policy barriers include citizens' privacy, data ownership and e-Government policy evolution.

The researcher therefore attempts to adopt some of the elements of the framework is structuring the perceived barriers, in order to develop a conceptual model for in e-Government implementation. The proposed framework therefore considers only the factors that hinder implementation in e-Government projects, in particular and IS/IT in general.

Figure 2: Models of Barriers



Gartner (2000) had a research in e government phase model showed the progression of e-Government in the connected environment. The model proposed four stages maturity model as follows:

- **Web presence:** At this stage website presence for various products and services need to be ensured.
- **Interaction:** Product or service seekers are able to communicate with the property owner via internet. They may download the manual, documents and other relevant information.
- **Transaction:** Transaction between two parties will take place. But it will depend on some issues like enabling govt. policies, electronic security, peoples' participations and awareness of beneficiaries.
- **Transformation:** E-Commerce sector will be more effective, integrated and well accepted in the society.

Hamed (2009) identified twelve factors, which are correlated and could either be identified as drivers and/or barriers depending on the situation as these factors may vary from country to country. It was noted by him that some drivers are evident in some developed countries those are not yet appeared in many developing countries. Thus the model recommends that some drivers in developed countries might be appeared as barriers in some of the developing part of the world. The more benefit the issue is to economic development, the more the issue counted as a driver'. This implies that the barriers and benefits are not possible to standardize and these depend of the stage of e-government growth of a particular country. The model of e-Commerce drivers and barriers mentioned the twelve issues those are generally influence the e-Commerce adoption in most countries as follows

- Competition (Good quality services at competitive prices)
- Cost (Cost of implementing and establishing economy vs. investment returns)
- Culture and Religion (Business culture, cultural ideas and issues)
- Economic activities (Competition may increase economic activities e.g. create new jobs)
- Employment factor.

- Government (Vital role in all activities)
- international/internal trade, education
- National Infrastructure (ICT infrastructure and payment system)
- Knowledge of e-commerce (Government need to engage users to be involved)
- Legislation and Regulation
- Online payment system - Security
- Traditional business

The United Nations and American Society for Public Administration (UNASPA, 2001) suggested an e-government model with five stages which are as follows:

- **Emerging presence:** A limited web presence is established. Basic and static information of government provides through a few independent official sites.
- **Enhanced presence:** The online presence begins to expand the content into dynamic website. Information is regularly updated as its number of official websites increase. Hyperlinks to other departments, government publications and newsletter are available.
- **Interactive presence:** In this stage, interaction between government and citizens is present. User can access broader range of government institutions and services. User can download forms, contacts the official and making appointment. The content is regularly updates.
- **Transactional presence:** Users have the capability to conduct complete and secure transactions, such as renewing visas, obtaining passports and updating birth and death records through a single government web site. In this stage, government transform themselves by using two-way interactions online for 24/7. Complete and secure transaction provided. Secure sites, digital signatures and user passwords are also present. User can pay online for the financial transaction services.
- **Seamless or fully integrated presence:** Governments utilize a single and universal web site to provide a one-stop portal in which users can immediately and conveniently access all kinds of available services. All services across departmental boundaries are fully integrated, all in a “unified package”. The services are clustering

along common needs, it provides services across the different lines and level of department with the highest level of integration.

This report is important for further researchers in their research. I'm pretty sure that this report will add value to the existing research. This report will be prepared in a structured way and it will be full of important information.

2.3 Theoretical Discussion

Exactly no theories or models goes with e-readiness for e-commerce development as the research work intends to do. Before selecting a relevant theory for the research work, we have studied some theories and models specially the 'maturity models' on e-governance and 'Perceived E-Readiness model' for e-commerce. As e-commerce is the subset of e-governance, we have reviewed 'Triangle Relationship Model' and 'PERM' model to build our Analytical framework. The network readiness of a country indicates the ability of its principal stakeholders—government, citizens, businesses—to leverage the potential of information and communication technology. (Gunasekaran and Harmantzis 2007). On the other hand, the e-readiness (electronic readiness) is a measure of the degree to which a country, or nation or economy may be ready, willing or prepared to obtain benefits which arise from information and communication technology (ICTs). (Dada 2006).

Triangle Relationship Model (E-Gov, E-Commerce and E-Citizen):

Academicians have argued that e-Business and e-Commerce are subsets of e-Government since e-Government offers broader functions than e-Business and e-Commerce. The knowledge society suggests that whilst both businesses and the government work collaboratively to serve the customers, i.e. Civil society. This is the reason why e-Government offers a great motivation to enable the government towards meeting up with the 21st century advancement in technology. E-Government offers effective and efficient services with higher service quality and delivery; it also promotes a healthier relationship between citizens and government.

As shown in Figure below, whilst e-Commerce is basically the buying and selling of goods and services on the internet – world-wide-web, electronic Business (e-Business) relates to a

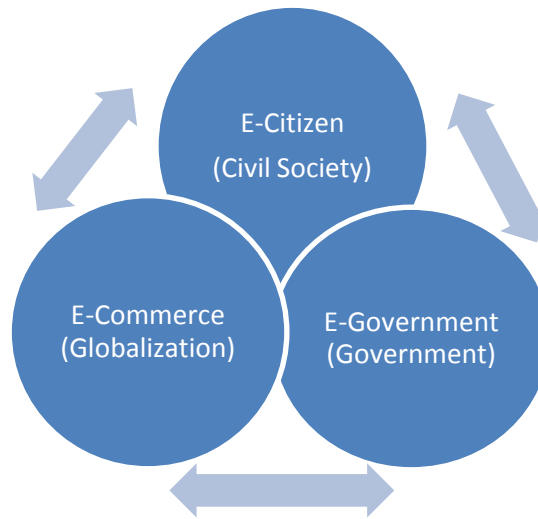
wider definition of Electronic Commerce as it entails delivering service to customers and working closely with all stakeholders including business partners to ensure smooth transaction within an organizational entity.

This explains why both e-Government and e-Commerce are seen as introduction of innovations in modern technology, although e-Government enables better service delivery in terms of information and data sharing. It involves transactions between government and business (G2B), government and citizen (G2C), government and employee (G2E), as well as amongst different government agencies and departments. Because of the similarities in most of the functions of e-Business and e-Commerce, the researcher intend to apply model or applications that have been developed and validated in either e-Business or e-Commerce industry in the context of developing countries and there is little evidence to suggest whether this model has been validated.

- 1) **E-Government** focus aspect in E-Government partnership. The processes and structures that define the relationship between central government and local governments; the processes and structures that define the relationship between organizations and departments or agencies; the processes and structures that define the relationship between government and the employees; the processes and structures that define the relationship between Legislature and the Executive.
- 2) **E-Business** focus aspect in E-Government partnership. The processes and structures that define the relationship between governments and the markets; the processes and structures that define the relationship between governments and the private sector.
- 3) **E-Citizens** focus aspect in E-Government partnership. The processes and structures that define the relationship between governments and citizens; The processes and structures that define the relationship between Government service delivery and citizens' needs; and The processes and structures that define the relationship between countries and International institutions. The following diagram illustrates the relationship among E-Government, E-Business, and E-Citizens in the context of the emergence of the so called "knowledge society", globalization, and sovereignty: Given the scale, scope, multi-portfolio nature, and transformational potential of e-

government, it has been advocated that it should be treated as a holistic system adjunct to the area of e-commerce in the E-society. (Fang, Z., 2002)

Figure 3: Triangle Relationship Model

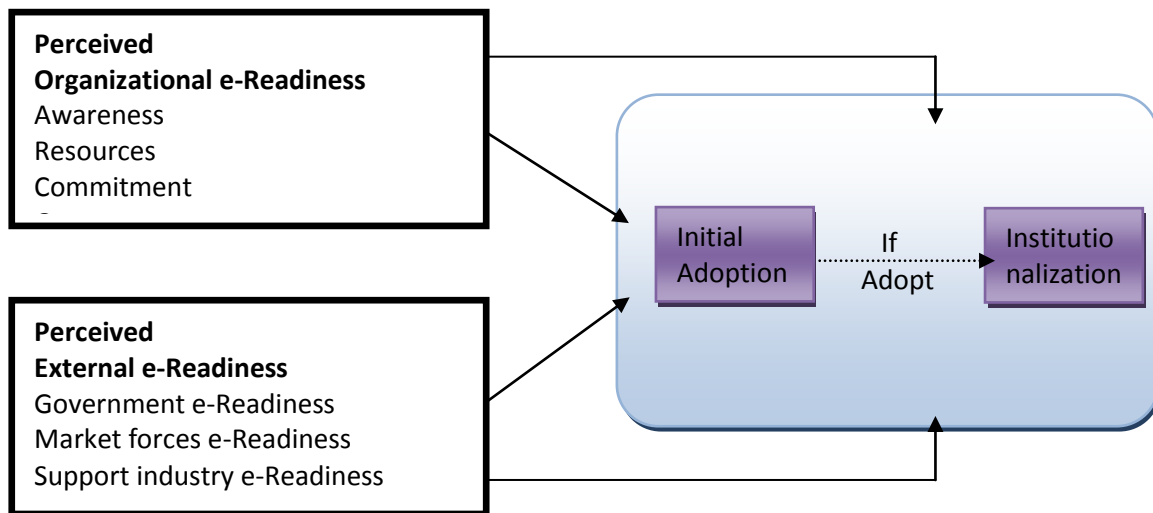


PERM Model:

In the context of electronic businesses in developing countries, Molla and Licker (2005) in United States of America conducted a study to examine e-commerce adoption amongst businesses. The study aimed to identify environmental challenges and the limitations that are different to those experienced in developed economies. The authors developed and empirically tested an e-readiness model (Shown in Figure 4) called the Perceived E-commerce Readiness Model (PERM). The model considered some internal organizational factors, known as perceived organizational e-Readiness (POER), and external factors, identified as perceived external e-Readiness (PEER), as important for e-commerce adoption. POER Contains six factors relaying within the organization and that will affect the initial adoption of E-procurement. Those are commitment, governance, awareness, human resource, business resource and technology resource that will contribute to initial adoption of E-procurement.

PEER Contains three factors that represent external factors that will influence the adoption of E-procurement. Those are market forces, government and supporting industries. Both constructs will affect initial adoption of E-procurement.

Figure 4: PERM Model

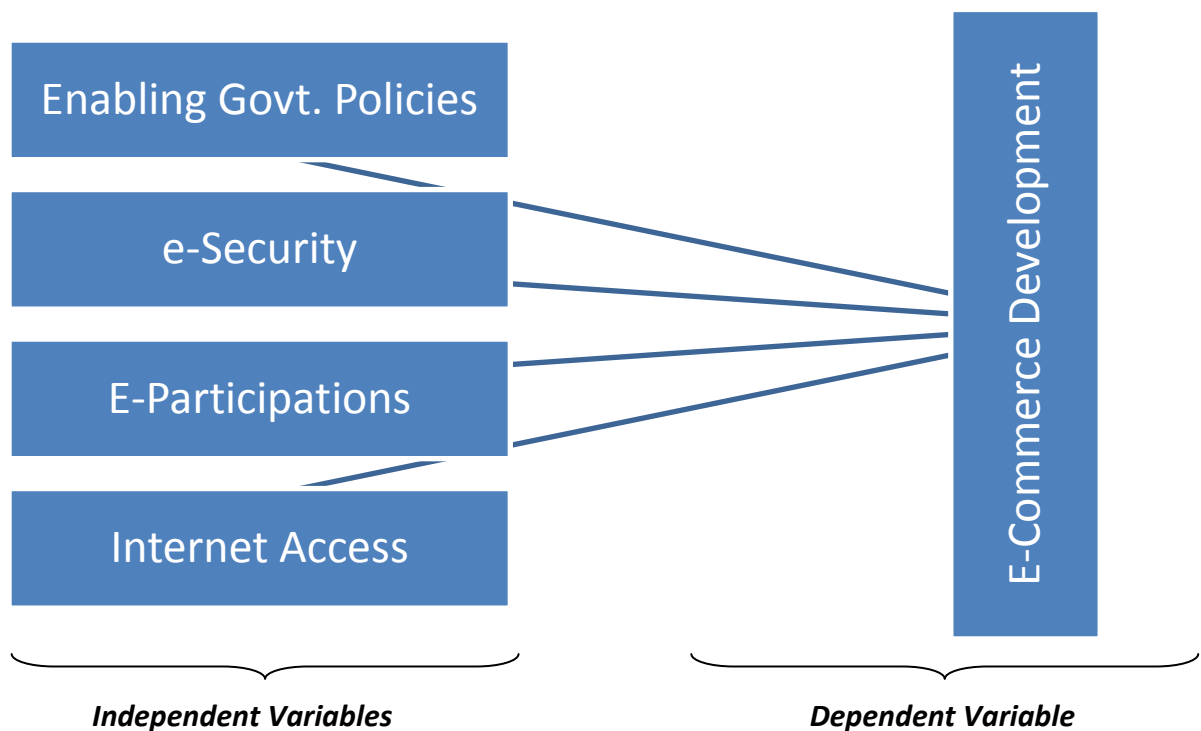


2.4 Analytical Framework

After observing several theories and models, it was seen that none of the existing theories completely match with the thesis work. Then it was concluded to build a framework following the PERM model for this research work. In this framework there is one dependent variable and also there are four independent variables. According to this framework, if we have enabling government policies, no issues about e-security and enough e-participations along with adequate internet access in all over the country, e-commerce will be developed in the country.

The pictorial presentation of the independent and dependent variables related to the research is shown in Figure 5:

Figure 5: Analytical Framework



Indicators of Variables:

E-Commerce Development: (Dependent Variable)

- Spreading of online portals
- E-commerce market Share

Enabling Government Policies: (Independent Variable)

- Govt. policies are effective or not

Security: (Independent Variable)

- Safeness of internet transaction

E-Participation: (Independent Variable)

- Number of internet users
- E-Commerce website visitors

Internet Access: (Independent Variable)

- Bandwidth price and internet availability

Explanation of Variables:

E-Commerce Development:

Here e-commerce development means the overall e-commerce status in a country. If the e-commerce development is in good condition, the export, import and local market will enjoy the benefits of e-commerce. In e-commerce developed market, e-commerce business share or market share will be increased and most of the company will use the web portal for the business activities. The number of e-commerce based web portal will also be remarkably increased.

Enabling Government Policies:

In a country govt. adopt many policies to promote ICT related activities. But if those policies doesn't enable properly, ICT service related like e-government, e-commerce can't work properly. So both govt. policy formulating and enabling both are important for e-commerce development. So we need to check whether we have enabling govt. policies or not.

Security:

Security is very important issue for e-commerce transaction. Often financial transaction is related to e-commerce activities. So, financial transaction security is a big concern for e-commerce activities. Moreover data communication through internet channel needs to be encrypted and secured. So safeness of internet transaction will create a trust among the citizen and they will confidently use the e-commerce activities over web pages.

E-Participation:

All website users are not e-commerce users. People may use web portals for different purposes. Among those users some users may use the web portals for buying, selling and searching for the products online. So number of website users indicates the e-participations.

It also indicates the people's awareness. If people are aware about the web site or online activities, they will use internet in their devices.

Internet Access:

Internet access is very important for the development of e-commerce. If the internet coverage is in large scale, it will be positive for e-commerce transaction. If the bandwidth rate is cheaper and ICT infrastructure is strong people in big number will use the internet. In our country, the status of internet access is good condition. People are enjoying internet through their cell phone, PSTN line, Broadband line and WIMAX connectivity.

2.5 Chapter Conclusion

In this chapter mainly the existing literatures have been reviewed. There are huge literatures in the area of wisdom and experts also established many theories after their sincere efforts. After reviewing some of those literatures, an established e-commerce development model named 'PERM' model has been adopted and developed further for this research work. From this model the Analytical framework was designed and elaborated in the chapter 2. The overall e-commerce market share in business will be hopefully increased in near future in Bangladesh because e-commerce is getting more attractive and providing more interesting features to its users. Without commercial transaction no economy can develop. There is no doubt that e-commerce is accelerating the commercial transaction in many attractive ways. In brief it can be said that e-commerce is making our life easier, enjoyable and hassle free. For this important e-commerce development e-readiness is needs to be ensured. The methodological part of this research work will be discussed in the next chapter. There the methodology, survey details, interview planning, sampling and the plan for proceeding further will be described.

CHAPTER-3

Methodology

3.1 Introduction

Bangladesh e-commerce sector is a very new sector. It's now in rising trend. There are many issues that need to be discussed and to be explored to understand the real e-readiness scenario of this sector. No big survey has been conducted before based on the e-commerce development. Reality is that there is scarcity of data to do this research work. The adopted analytical framework shows that neither qualitative method nor quantitative method is sufficient enough for this research work. From this understanding this research work is aimed to use the mixed method that is qualitative and quantitative method both.

3.2 Methodology

The research work is based on the combination of qualitative and quantitative both methods. Qualitative data has been collected from the interviews, report and publications. Quantitative data is collected from the survey data and also from some survey reports.

Both primary and secondary sources have been used to collect necessary data to conduct the study. Primary data was collected through interview, survey and from content analysis; while secondary sources of data were both from published and unpublished documents and literatures.

Here, reviews of many literature, both national and international were imperative to find out the trend and to understand the national as well as international context and perspective. In case of primary data, mainly survey method is used to collect data regarding present situation or status of e-commerce and on its enabling factors, identifying strengths and weaknesses, etc. Survey is also required to collect necessary data to find out the levels of awareness, perception, understanding of ICT related laws, attitude and aptitude of stake holders. In addition, selective interviews of relevant stakeholders were arranged to cross

check information and get clear understanding of the status of e-commerce in context of Bangladesh. Besides, content analysis approach was required to dig out some features and realities such as e-commerce scenario in Bangladesh, e-readiness factors of e-commerce development in the country, adequacy of policy and laws, awareness of people, security related issues etc.

3.3 Data Collection

Both online and offline way were used to collect primary and secondary data. For survey, the printed forms were used to record the response from the respondents. Beside this, online survey form (Google forms) was used to record the response. Sample size was 113 in numbers combining both online and offline survey. Sampling method was purposive and random sampling. For secondary data collection the research work was mainly depended on online sources. Some offline sources like journals, magazines from library were used for data. Three case studies have been done to check the real scenario in the field.

3.4 Primary Data from Survey

A survey was conducted to collect primary data for the research. The respondent of the survey was 113 in number from Dhaka and Chittagong metropolitan area. The survey was done specially within the professionals of the both city as nowadays the professionals are IT skilled person and they are assumed to be potential e-commerce users rather than the other internet users in the country. From the various categories of professionals' university teachers, govt. service holders, IT professionals, bank professionals are chosen as the survey respondents. Moreover the university students from masters' level were also chosen for the interview as masters level students are matured and they are educated internet users as well as potential e-com users. From all the mentioned category respondents, they are chosen from the age group between 25 and 40. The people after age of 40 are less interested to use IT facility because of the long habituated factors. So the sample size was covered with the hope of maximum possibility of being e-commerce users in the country. Besides these groups there are obviously many e-commerce users but considering their possibilities these groups are taken as sample so that we can get the most possible picture of e-commerce scenario. University teachers are expected to be well known about the

online transaction, security issues, payment issues and also internet using manners. Government has very recent ICT policy in 2009 and 2015. So the young government officers also have the quality and interest to use the e-com transactions over internet. Bank professionals are also aware from online money transaction and security issues as they work to ensure the safe money transaction in all over the country. IT professionals know the best picture of national IT issues. E-commerce activities are mainly based on ICT, so the IT professionals are best sample to respond the e-com survey. Both male and female are randomly chosen for the survey as females are also very important respondent as well as man.

3.5 Primary Data from Interview

Several in-depth interviews have been successfully taken from the target concerned personnel. We have interviewed e-CAB (e-commerce Association of Bangladesh) President, senior ISP professionals from Link3 Technologies Ltd, Aamra Networks, Fibre at home, Senior Bank official from, Bangladesh Bank, Trust Bank, Country ICT personnel Mr. Mostafa Zabbar, ISP association personnel and official of ICT ministry. E-CAB is only association that is working for e-commerce issues since year 2014. The association is also working with ICT ministry for drafting new e-commerce policy for Bangladesh. Senior ISP officials have given their valuable observation and comments that is really helpful for the research work as ISP is working to spread internet connectivity all over the country. Bangladesh Bank is controlling the monetary issues all over the country and this institution mainly takes policies to ensure the secure money flow over internet or through the banks all over the country. Country e-commerce would face difficulties if Bangladesh Bank didn't allow the interbank money transfer from year 2009. ICT ministry is responsible for making the ICT policy and also the e-commerce policy. Considering the fact, the ICT ministry official was interviewed. Thus the primary data for the research work was collected from interviews.

3.6 Content Analysis

We have ICT policies of year 2009 and also we have modification of that ICT policy in year 2015. Meantime ICT ministry has drafted e-commerce policy in year 2016. These policy papers were carefully reviewed to find out the e-readiness issues for e-commerce

development. Moreover some related writings were also analyzed like Economic Policy Paper on e-Commerce, Global e-readiness writings, UNCTAD publications and UNCITRAL Model Law on Electronic Commerce etc. We have found very rich content from these analysis work those were helpful in this study.

3.7 Scope and Limitation of the Study

This research paper holds some limitations due to many different reasons. Some reasons for those limitations are-

- Unwillingness of providing information of target group.
- Related regulatory bodies, ICT Division are not interested to provide sufficient data.
- Lack of information regarding total revenue from e-commerce industry in Bangladesh because there was no such study on e-commerce before.
- As financial issues are related to e-commerce, financial information sometimes was not disclosed due to confidentiality or company policy.
- Confidentiality is another reason. Disclosing information is sometime considered as confidentiality issue and people are reluctant to provide the information spontaneously. Govt. personnel very often not interested to disclose the real fact if it goes against govt.
- E-commerce is a new and rising sector in Bangladesh. Big survey or study is yet to be done. So there are data unavailability problem for the study.

3.8 Chapter Conclusion

In this chapter the methodological aspects have been discussed. It also contains the reason behind why the mixed method has been adopted for the research work. This initiative is mainly blend of both qualitative and quantitative both. Survey and interview were used to collect necessary data. Related to this work, there are very few secondary available. Some primary data have been collected thru survey and interview and very few secondary data have been earned from the publications. To understand the e-readiness of e-commerce development in Bangladesh, we need to have a picture of the current state of Bangladesh

ICT and Bangladesh e-commerce. In the next chapter current state of ICT and e-commerce in Bangladesh has been elaborately discussed.

CHAPTER-4

Current State of Bangladesh ICT & e-Commerce

4.1 Introduction

To understand the e-readiness for e-commerce development it is very important to have a clear picture of current state of a country's ICT as overall e-commerce scenario. Bangladesh has entered in the internet world in 1990s and after long time in 2009 the country entered into e-commerce arena. More effectively Bangladesh has been started most of its e-commerce activities since 2013. Meantime the branches of ICT sector has been spread in the country and people are not getting a comparatively good ICT infrastructure.

4.2 ICT Sector of Bangladesh

E-Commerce development is closely linked with ICT sector development of a country. In the history of e-commerce, United States and Canada is leading the e-commerce industry. In case of developing country like Bangladesh, it is also gradually taking a big share of e-commerce market both globally and locally. Bangladesh experienced huge development in ICT sector especially in last 10 years. Software export is now just immediate position behind readymade garments. It was possible because of ICT sector development in all over the country. Digital Bangladesh is a concept which refers to the use of Information Technology for management, administration and governance to ensure transparency, accountability and answerability at all levels of society and state. It is an integral part of Government's Vision 2021 promising to make Bangladesh a prosperous and equitable middle income country. In the budget program Digital Bangladesh is outlined with four key priorities –

- i. Developing human resources for 21st century;
- ii. Connecting citizens in ways most meaningful to them;
- iii. Taking services to citizens' doorsteps;
- iv. Making the private sector and market more productive and competitive through the use of digital technology.

Some statistical data are given here in Table 2 to get a picture of the ICT sector in Bangladesh:

Table 2: ICT Scenario in Bangladesh

Fixed-line telephone users:	0.6%
Mobile-cellular telephone users:	51.6%
Fixed-line broadband connection:	0.31%
Households with a computer:	3.1%
Households with Internet connection:	2.6%
Internet Subscribers in Bangladesh (Jan, 2016) is	56.167 million.
Mobile internet Users: 41.303 Million against	121.86 Million
Wimax:	.223 Million
ISP and PSTN:	1.24 Million
Yearly e-commerce turnover:	20 Billion Taka (in 2015)

Source: WB Report, BTRC Report and e-cab report

4.3 Policies Related to ICT

Government has formulated many some policies those are directly or somewhere indirectly related to ICT issues. Some of those policies are -

- ICT Policy 2009, 2015
- ICT Act 2013 (amended)
- Cyber Security Policy 2010
- Broadband Policy
- Mobile Keypad Standardization Policy
- Guidelines for Utility Bill Payment
- National e-Governance Architecture
- Mobile Banking Policy Guideline
- Guidelines on Mobile Financial Services (MFS) for the Bank
- Proactive Information Disclosure Guidelines 2014
- National Portal management gazette
- E-Commerce policy 2016 (Draft)

4.4 National ICT Policy and E-Commerce Policy

The Information Technology Act provides a legal framework that recognizes digital signatures and other digital documents and has enough provisions to check cyber crimes, which are not covered by any existing law of the country. The policy has been drafted based on the Model Law on E-commerce framed in 1996 by the United Nations Commission on International Trade Law (UNCITRAL).

Implementation of the decision of the Honorable Prime Minister's Task Force on ICT to place all forms (required by various agencies) and recruitment notice in the web is being implemented. Some of the government agencies have already launched their websites. The official website of the Government of Bangladesh, www.bangladeshgov.org, currently contains links to President's Office, Prime Minister's Office, 8 ministries and 59 agencies. Some of these contain important documents like Budget, Census Data, Customs and Income Tax regulations, etc. Almost all Ministries are currently using e-mail facilities.

There are ten Strategic Themes mentioned under the National ICT Policy 2009. These are: social equity; productivity; integrity; education and research; employment generation; strengthening export; healthcare; universal access; environment, climate and disaster management; support to ICTs. It is well recognized that Bangladesh has potential to explore the outsourcing of ICT. In this context the issue of image generation as well as branding of Bangladesh remains one of the priorities. Considering all these for strengthening export the strategies are:

- Strong and well planned initiatives for marketing and branding of ICT products and services from Bangladesh;
- Ensuring the secure source of money for developing software and IT companies;
- Developing and securing ICT infrastructure;
- Formulate industry friendly policies and facilitate friendly environment as well as securing special facilities to increase export;
- Facilitate inventiveness through RnD (Research and Development) regarding the development of the information technology quality, process, technical issues, workplace, value chain and niche market;

National ICT Policy:

The cabinet on February 2015 approved the draft of the 'National Information and Communication Technology (ICT) Policy-2015'. This policy has been updated in line with the ICT Policy-2009 and has been revised in consultation with the stakeholders. It was aimed to develop and promote ICT sector to ensure its effective use to achieve development goals. The policy covers ten special objectives, 56 strategic themes and 306 action programs which will be implemented by different organizations under short, medium and long term timeframe by 2016, 2018 and 2021. It can be expected that this policy would be a guideline for ICT sector to ensure comprehensive and effective use of ICT, transparency, accountability, human resources development through materializing national development goals by 2021. In this policy there are some strategic themes as well as some action plan with short term, midterm and long term vision. Some action plans related to e-government and e-commerce are given below:

Action Plan under Social Equity is to establish Community e-Centre, modify ISP license, enabling all citizens to apply for and receive public grants electronically, special ICT literary and training programs for ethnic minorities and women's e-commerce center to expand market access to promote women-led micro enterprises.

Action plan under Integrity is to introduce standard Bangla keyboard and Unicode system, develop national network, ICT & e-Governance curriculum development, allow online VAT registration, allow online tax filing and tax payment system, establish electronic payment gateway for inter-bank electronic transactions for citizens and businesses.

Action plan under productivity is to conduct a study to understand the current status of ICT and services availability for business, conduct media campaign to build mass awareness on e-commerce activities, implement ICT based model for Small, Medium and Micro enterprise at Dhaka and other divisional head quarters, arrange internet connectivity up to all villages in the country, enable e-commerce platforms for Small, Medium and Micro industries in BD, establish e-governance in all executive layer of govt.

Action plan under Universal Access is to establish New Submarine cable connectivity for redundancy and capacity enhancement, introduce 3G services for better and faster data, multimedia and voice communication, create Broadband wireless Access Network through WiMax and other technologies, action plan under Supports to ICT, implement payment gateway for online transactions, introduce cyber police to ensure cyber security, introduce and enforce electronic fund transfer ACT to enable citizen to pay through electronic means.

The common issues in the ICTs and international development such as access to the ICT, e-commerce, e-Government, citizens' participation are highlighted in this policy. An ICT policy should be flexible, comprehensive and locally appropriate.

Bangladesh Bank has made available online payment service by the Online Payment Gateway Service Providers (OPGSPs) to facilitate receiving of small value service exporters' overseas payments, via the Bangladesh Bank online payment service. To perform the online activities Bangladesh Bank allows the Authorized Dealers to offer the facility of repatriation of remittances through standing arrangements with internationally recognized Online Payment Gateway Service Providers (OPGSPs). The online payment capability will be available only for service export in non-physical form which does not exceed USD 500. Therefore, the authorized dealers (ADs) will be able to offer the facility of repatriation of remittances against small value service exports in nonphysical form such as data entry, data process, off-shore IT service, business process outsourcing through the OPGSPs. Through another circular titled FE Circular No .08, date August 07, 2012 the limit has been extended from USD 500 to USD 2,000. Bangladesh Bank issued a circular related to foreign exchange transaction for IT/Software firms. It has a limitation in financial transaction regarding utilization of balances held in Exporters Retention Quota (ERQ) accounts without prior approval of Bangladesh Bank. It allows the ADs to remit up to USD 10,000 on behalf of IT/Software firms in a calendar year for bonafide business purposes such as business visits abroad, participation in export fairs and seminars, establishment and maintenance of offices abroad, import of raw materials, machineries and spares etc. without reference to Bangladesh Bank.

The real change came in e-commerce industry in year 2009 when Bangladesh Bank allowed online payment in the country thus, officially opening up the E-commerce sector. In

November that year, Bangladesh Bank issued a circular where it gave permission for following types of online transaction in the country:

- Online utility bill payment for different service sectors from client's accounts to recipient's accounts.
- Online fund transfer from online of a client to his/her another account in the same bank.
- Collection of money from/to buyer's bank account to seller's bank account for purchasing/sale of products under e-commerce system transaction via online using credit cards in local currency.

Another major incident of 2009 was introduction of WiMax internet in Bangladesh. It has become quite popular in the country.

➤ **Telecommunications:**

Private investment has been invited in the telecom sector in early 90s. Since then this sector is rising very rapidly. Now we have strong telecommunication sector and total land of Bangladesh is mostly covered with landline or mobile BTS. The status of year 2015 is given here:

Table 3: Status of the IT Sector in year 2015

Category:	Percentage: (as of June 2015)
Tele-density	80%
Internet Density	29%
Fixed broadband Internet usage	7%
Mobile phone subscribers	127 Millions
Mobile Internet subscribers	48 millions
WiMax Internet users	180000
3G & 2G Users	13% and 98% respectively
Coverage	64 District, 126 Upazila, 108 Union
Number of ISPs	205
Smart Phone users of 3G	14%

Category:	Percentage: (as of June 2015)
Laptops, desktops, etc	7%
Facebook users	1,02,000 (25% penetration)
Cost of peak hour Internet	Tk. 1.5-2.0
Lowest call rate	1.1 paisa per sec

Source: BTRC website

➤ **ICT Incubation Centre:**

In order to encourage startup companies in software/ITES development and export, the government has set up an ICT Incubation Centre at a rented space of 68,000 sq. ft. in the heart of Dhaka City. At present, about 48 IT/software related companies have set up operations in this facility. The facility has been provided with 24-hour power supply and internet gateway facility from the Development of Infrastructure for IT Applications Project of BCC. ICT service industry which have bright prospect in Bangladesh includes data entry/data transcription services (voice, video), cyber-cafe, cyber kiosks, public call-centre (PCOs), telemedicine, electronic-mail centers, web-site design and maintenance, e-commerce and other web-based applications, electronic-journalism, Tele-banking, e-banking, etc.

➤ **Hi-Tech Park:**

Bangladesh Hi-Tech Park Authority (BHTPA) was established in 2010. A High Tech Park with all modern infra-structural facilities is planned at Kaliakoir near Dhaka with an area of 231.685 acres of land at a cost of 2,522.5 million Taka (43.5 million USD), which will house software and ICT-enabled service industries, electronics and PCB related equipment and products, telecommunications, hardware assembly/component/VLSI design (possibly manufacture also), optoelectronic equipment, bio-technology and related linkage industries, including a hi-tech University to provide technical support and for conducting R&D at the park facilities.

4.5 E-Commerce Market of Bangladesh

Like the developed country the citizens of Bangladesh is now enjoying high speed Internet connectivity with good penetration of Internet and mobile phone usage especially smart phones in all over the country. People are adopting very rapidly with the new technology. The influence of technology has also put impact on our commercial activities. Instead of traditional business now the people are motivated to do business over electronic medium. Globally, the application of e-commerce has been rapidly gaining acceptance, particularly since the dot-com boom and bust in the 90s. The level of international acceptance and popularity among businesses, especially small businesses and entrepreneurs, is largely due to the ability of e-commerce to go beyond international boundaries and enable activities within the virtual marketplace. This enables people to do business internationally at relatively low cost and more comfortably.

Consumers also report of higher satisfaction levels in availing of goods and services through e-commerce portals from the convenience of their homes or offices. Moreover, e-commerce businesses, by avoiding expenses on logistics such as physical spaces, smaller work force, and occasionally, lower inventory levels, are able to offer lower prices on products and services, contributing towards greater customer satisfaction.

The advantages of e-commerce can be broadly mentioned as follows:

1. Lower operating cost with less hassles
2. Greater reach in international arena
3. Ability to increase product variety as a lower cost
4. Doorsteps delivery

Source: Focus group discussion held by e-CAB.

It is because of the aforementioned advantages that the e-commerce sector is expected to fare particularly well in developing countries. This is perhaps more inevitable for a developing country like Bangladesh in which traffic jams and consequent restricted physical mobility can constitute a significant barrier to business growth. In the context of Bangladesh, although some e-commerce businesses have risen to prominence, the sector is still considered to be at an embryonic stage, and its contribution to economic growth is

expected to increase exponentially, after the ongoing phase of customer familiarization and comfort with e-commerce increases, and a reasonable market penetration is achieved.

1. Global Impact of E-Commerce Globally, e-commerce surfaced at a time when dotcom businesses were losing traction in developed countries. One of the first formal e-commerce applications was undertaken by CompuServe for its US and Canadian markets. Subsequently, modern day power houses such as Amazon.com, eBay and more recently Alibaba.com, were established.

2. The tremendous growth potential of e-commerce is evident in countries such as India as well, where the market is worth about USD 12.6 billion as of 2013 and rapidly growing. In the US, the total value of the e-commerce sector is about USD 294 billion.

3. The popularity of e-commerce is largely driven by the expanding reach of the Internet. All over the world, the scale of global trade being carried out on the Internet is increasing. In the Asia Pacific Region, countries such as Japan, China and India are leading the way with regard to online trade, with an average yearly growth rate of 143 percent over the last decade. However when it comes to the use of Internet for online shopping purposes, country-level data vary considerably. While in China, online shopping constitutes 20% of Internet usage, in South Korea, the proportion is about 50 percent of Internet usage.

4. E-commerce in Bangladesh By now, the growth story of Bangladesh has become well-known. The country's annual GDP growth rate of about 6% over the last decade is reflected across sectors. The story of mobile phone adoption in Bangladesh is also a case study in its own right and not too far behind is the unfolding story of Internet penetration and usage. Presently, several established business houses have opened up online portals while others are starting anew as exclusively online businesses, in part, due to the latter's relatively less capital intensive nature. Interestingly, these trends are not limited only to Dhaka, the capital city, but semi-urban, and to an extent, rural areas as well. The Bangladesh Governments' initiative to provide a solid Internet backbone, encouraging a well-grounded telecommunication sector, connecting all government offices, and opening up IT Parks are all leading indicators that point to the e-commerce sector's growth potential.

5. With recent growth of Internet usage, 3G roll-out in 2013, and the vigorous marketing and sales of smart phones, e-commerce usage continues at a rapid pace. Businesses have realized that Bangladeshis are quite enthusiastic about technology and at the same time avid shoppers (especially, during Eid festivals). However, with the numerous barriers to urban life in Dhaka city, citizens have increasingly resorted to online shopping, with an increasing supply of virtual businesses to match. Inspired by convenience, competitive pricing, range of products, dedicated service, improving payment security and flexibility and demand from buyers and sellers, e-commerce has witnessed a mushrooming of the online shopping websites, particularly in the B2C and C2C category.

In general, the indicators related to ecommerce in Bangladesh, bode well, considering the early-stage of this sector.

Indicators for e-commerce growth

There are several indicators that are worth highlighting. First and foremost, 48 million Internet subscribers are quite significant for Bangladesh. This attests to the popularity of the Internet among average citizens. However, when one compares this to the 127 million mobile phone subscribers, the potential for mobile Internet growth is further underscored. Generally, laptops and desktops do not enjoy very high levels of penetration owing to their high costs, and this barrier is a boon for mobile Internet adoption, and subsequently e-commerce. Moreover, a 25% penetration of Facebook, is also quite high, and implies the potential of a segment of e-commerce known as f-commerce (Facebook-based commerce). This is expected as mobile usage is still growing in Bangladesh. However, prioritizing the transition from 2G to 3G will enable accelerated growth for the e-commerce sector. The decision of the government to introduce a second submarine cable will go a long way in creating the required infrastructural context within which to shift to a less expensive and more efficient platform such as the Broadband. Moreover, a nationwide broadband network should be part of the government's near term urban development plan. Overall, there have been significant strides in infrastructure development which have facilitated the entry of e-commerce businesses.

Source: Bangladesh Recent Statistics on ICT & Telecom Infrastructure (all figures of 2015)

4.6 Major E-Commerce Segments in Bangladesh

With regard to the Bangladesh e-commerce sector, the major subsectors, thus far, have been B2B, B2C, C2C, and B2E segments. B2B websites were once the biggest constituents of the e-commerce sector in Bangladesh. However, this has changed and recent trends indicate that their representation in the sector at large is expected to lessen. Several B2B websites in Bangladesh are engaged in providing manufacturing and supply-chain solutions. For instance, BGMEA has actively deployed B2B e-commerce solutions for international RMG orders and procurement, as do several RMG companies. There are also B2B websites that feature business directories, trade deals and information about suppliers such as Bangladesh BusinessGuide, Addressbazaar and Bizbangladesh, which, at present, have limited popularity.

B2C websites have also become very popular as evidenced by the growth and commercial success of online-based home delivery of food, such as HungryNaki and FoodPanda in the country. This has come as a panacea to citizens given the high levels of traffic in areas such as Gulshan and Dhanmondi in Dhaka at a time when people like to go out to dine. Other examples of B2C initiatives include Facebook-based commerce platforms such as Shopr.bd and ShoptoBd which allow Bangladeshi customers to purchase products from leading online shopping sites in the US, UK, India and even China, e.g., amazon.com, ebay.co.uk, amazon.in, and alibaba. Although the competition between local business and foreign-backed business entities in the B2C market, in particular, the food delivery business, is expected to determine the future structure of the B2C sector, what appears to be inevitable is its sustained growth. Meanwhile, C2C businesses, thus far, have been the life force of the e-commerce sector in Bangladesh. The leading players in this category include Bikroy, Ekhanei, and ClickBd. There has already been a reorganization of this sector with CellBazar being bought by Telenor, followed by the acquisition of the foreign market player OLX by Ekhanei.com. These businesses consist of individual and auction-based online marketplace similar to eBay. ClickBd was first auction platform in the country, while Cellbazaar was the first to use SMS based transactions.

With regard to B2E businesses, employee recruitment, particularly in the private sector in Bangladesh, has more or less shifted online, thanks to companies such as bdjobs.com,

prothom-alojobs.com, and jobsA1. Although internal hiring and lobbying are widely prevalent, vacancy announcement takes place through the largest and most accepted web recruitment portal Bdjobs, while many others like prothom-alojobs.com and jobsA1, etc also enjoy growing popularity.

4.7 E-Commerce Web Portals

In spite of various barriers, many e-commerce websites are established in Bangladesh. The volume of e-commerce in terms of transactions in monetary value is expected to reach BDT 2000 million in 2013 against around BDT 450 million of 2012. The products and services that now dominate the country's e-commerce are railway tickets, domestic air tickets, hotel booking, electronic products, books, gift items, jobs, hotel reservation clothing and some food items. Major e-commerce websites in Bangladesh are given below-

- rokomari.com: Mainly for books
- chaldal.com: Mainly for glossary items
- gadgetgang7.com : For smart gadgets and Xiaomi products
- zettabyte-gadgets.com: Mainly for electronic goods
- ajkerdeal.com: Mainly for various gift items
- easy.com.bd: Mobile airtime and internet recharge
- foodpanda.com.bd : Order food items online
- bikroy.com : For buy and sell products
- ekhanei.com : For buy and sell products
- olx.com.bd : For buy and sell products
- clickbd.com : Online auction
- daraz.com.bd : Online purchase of various products
- iferi.com : For online product sell
- kaymu.com.bd : For online product sell
- lamudi.com.bd : For online product sell
- carmudi.com.bd : For online car sell

Besides the mentioned web portals huge e-commerce activities are happening thru facebook pages. Because of the popularity of facebook, many companies are now doing

online business instead of their own web portals. It is easy for users to be in touch with different news of products and prices to be in the facebook pages instead of visiting individual company pages. Users also feel comfort to use designated facebook pages and to order the desired product from facebook page. So number of facebook pages related to buy-sell activities is also huge.

4.8 Global E-commerce and Bangladesh

Globally e-commerce is now a part of festival also. Europe and others Western countries are celebrating many days related to e-commerce business like Cyber Monday, Boxing Day, Special day (Double digit day like 11.11, 12.12) etc. In these days the e-commerce business organizations offer very cheap rate for their products. Sometimes they also offer many gifts or free of charges etc. In last few years e-commerce conference is holding in every year globally like Africa, France, Indonesia and Switzerland etc. In these conferences the business organizations from many countries actively attend and they put their valuable thoughts for e-commerce development. Beside this there is also global e-commerce expo to inspire e-commerce business globally. In next year 2017, the e-commerce expo will be arranged by London on 27-28th September. Moreover there are also some international shows on e-commerce taking place globally. Thus e-commerce is getting popularity globally crossing the country barrier. In Bangladesh, we are also locally celebrating e-commerce week, arranging e-commerce fair in many districts very recently. ICT Division of Bangladesh Government and e-CAB is jointly working for e-commerce related activities in all over the country. It's a good sign for Bangladesh e-commerce and it shows that Bangladesh is joining in international highway regarding e-commerce business.

4.9 Beginning of E-commerce in Bangladesh

E-commerce started in Bangladesh in the late 90s. The earlier E-commerce sites were actually gift sites targeted towards the Non-Residential-Bangladeshis (NRB) living in abroad. All these sites were based in abroad and had branches in Bangladesh as well. NRBs would buy various products for their families or loved ones and pay in credit card. The site would then deliver the product to their family or friend in Bangladesh.

From 2000 to 2008 the e-commerce sector observed slow growth. There were few e-commerce websites but there were no system for online transaction which is the main beauty of e-commerce business. In addition, high cost of Internet and lower penetration meant that few people knew about these sites. According to Bangladesh Bank, payments and transactions by credit cards were nearly 11 billion taka in June 2008; one of the lowest in the world.

The country had only about 400,000 credit card holders at the end of June 2009. From 2008, things started to look bright as Bangladesh Bank took various initiatives including implementation of e-Payment Gateway.

There are many restrictions, availability issues, user's choice and also affordability of payment methods of Bangladeshi users. The e-commerce payment settlement methods in the country are:

Cash on Delivery: This is the most commonly used payment method after completing e-commerce purchase. Currently most of the e-commerce users prefer cash on delivery payment after receiving the purchased goods or services.

Bank Transfer / Fund Transfer: This is one of the smart ways to make payment but very few e-commerce businesses parties and users are doing this payment solution.

Mobile Money Transfer: Some e-commerce websites also prefer these payment modes. The popularity of this method is increasing day by day and this payment is possible from any corner of the country thru mobile phones. People are using bKash, Mcash, Rocket and many other mobile money transfer methods.

Credit Card: Like the developed country, this is now using in our country also. People who are able to afford this plastic money they are using this payment mode to purchase goods over internet. Most of the e-commerce websites in Bangladesh are currently accepting this payment method. Now in the country there are VISA, Master and AMEX (American Express) credit cards promoted by various commercial banks.

4.10 Year 2013: The Rise of E-commerce

The year 2013 is an important year in the history of e-commerce in Bangladesh. Some important incidents took place during this year that would have a long lasting effect in the e-commerce sector.

- First, Bangladesh Association of Software and Information Services (BASIS) and Bangladesh Bank jointly observed E-commerce Week for the first time in the country. From January 5 to January 11, there were four roundtable discussions, two seminars, one technical session, special awareness program at Dhaka University and a special promotional campaign at Bashundhara Shopping Mall. Supported by ICT Business Promotion Council, the inauguration ceremony of e-commerce Week took place in The Westin Hotel on 5 January, 2013. Governor of Bangladesh Bank, Dr. Atiur Rahman was the chief guest of the ceremony. The theme of the week was “Shop Online: Anything. Anytime.” In his speech, Dr. Atiur Rahman said that there were 4.6 million debit and credit card holders in the country and 3 million mobile bank accounts.
- Second, In February 2013, for the first time in the country, Computer Jagat, the leading ICT magazine of Bangladesh, under the supervision of Dhaka DC Office, organized the first fair on e-commerce. The three-day fair took place from February 7 to February 9 at the premise of Begum Sufia Kamal National Public Library in Dhaka. The slogan of the fair was- “Festival for buying and selling at your premise.” A total of 31 public and private e-commerce organizations displayed their products and services in the fair. Though first of its kind, the fair was huge success attracting eighty thousand visitors. Computer Jagat also did live webcast of the fair which was seen by more than fifty thousand people in Bangladesh and abroad.

After the success of E-commerce Fair in Dhaka Computer Jagat organized two more fairs in Sylhet and Chittagong. A total of 45 organizations participated in the Sylhet fair attracting thirty thousand visitors. In the Chittagong fair a total of 51 organizations participated.

There were three successful ‘E-commerce fair’ in the country. Computer Jagat, ICT Ministry (currently Ministry of Post, Telecom and Information Technology) and

Bangladesh High Commission London jointly organized the first international E-commerce Fair. The three-day UK-Bangladesh e-Commerce Fair was held during September 7-9 at Millennium Gloucester Hotel in Central London. Dr. Dipu Moni, the then Minister of Foreign Affairs Bangladesh inaugurated the fair. 19 organizations from Bangladesh and 13 from the UK participated in this fair. The UK-Bangladesh e-Commerce also repeated the success of previous fairs. Many Bangladeshis living in London and people of London came to visit the fair.

- Third, Bangladesh Bank gave permission to buy products and services online using international credit cards in year 2013. Buying products and services from abroad using credit card is an important aspect of e-commerce but earlier it was not possible for the Bangladeshi international credit card holders.

4.11 Chapter Conclusion

In this chapter a picture of Bangladesh ICT sector has been drawn. Bangladesh ICT sector is growing rapidly and comparatively developed sector among other sectors in Bangladesh. Government has taken lot of new initiatives to develop ICT sectors. Some policies also have been formulated for the development of country ICT. Govt. has set up ICT incubation center, Hi-tech park, different ICT division etc. E-Commerce sector is not well developed like the ICT sector but this is also developing very gradually. Bangladesh Bank has taken some initiatives to promote e-commerce activities since 2009. A new e-commerce policy is about to be formulated and hope this sector will be developed soon. In the next chapter the major findings of the study will be highlighted. To meet the research objective data presentation along with analysis and discussion will be described in the chapter five.

CHAPTER-5

Data Presentation, Analysis and Discussion

5.1 Introduction

As the research work is both qualitative and quantitative, it was planned to conduct some interviews as well as to conduct a survey. After doing a month long field work the data has been collected. In this chapter the detail of data collection is described, the survey data analysis, discussion and findings are also mentioned here. At the end of this chapter analyzing the findings using the framework is done.

5.2 Data Collection

Considering e-commerce the two main cities Dhaka and Chittagong is nearly in similar position. So the data collection was done both in Dhaka and Chittagong. Basically it was focused on Dhaka but Chittagong was included because Chittagong is the commercial capital of Bangladesh and huge commercial transaction is naturally done in Chittagong. So it was thought that for e-commerce research work Chittagong can be included. Because of time constrain and to focus the research work more, the other cities of Bangladesh are not included in this research work. The research work was limited in the city area and basically targeting the potential e-commerce users i.e. the internet users. From city area some potential social class was picked as the survey respondent. Among the other potential groups of e-commerce users, 6 groups were initially taken.

5.3 Data Collection from Survey

The sample size of the survey was total 113. There are 6 types of population in the survey from the two important and potential e-commerce cities Dhaka and Chittagong. Dhaka is the Capital of Bangladesh and most of the technological setup is Dhaka based. Chittagong is the business capital of Bangladesh and potential e-commerce users are also found in Chittagong after Dhaka. So these two major cities are chosen for the survey. Because of

time limitation the some other important cities could not be included. The smart internet users are potential e-commerce users. Moreover some socially established groups are expected internet users. I have chosen six groups from the city areas as expected internet users and potential e-commerce users. The population was chosen between 20 Years to 45 Years as most of the cases these are the expected internet users. Government Official, University Teachers are socially aware people so it is expected that they are internet users also e-commerce users. ISP official and Bank Officials are involved with money transaction and data transaction. So it is expected that they will be e-commerce users as e-commerce need the transaction of money and data. At last the undergraduate students and other people who usually do desk job in office were picked for the survey because they are assumed as very active internet users in the cities.

The population detail is given here with numbers:

- Government Officials : 22
- University Teachers: 23
- Bank Officials: 16
- ISP Officials: 15
- Undergraduate Student: 12
- Others: 25

5.4 Survey data output according to variables

General Information:

Male-Female Ratio of the respondent:

Sample size of the survey was 113. Among the total respondents the number of Male respondent is 80 and female respondent is 33 as shown in Table 4.

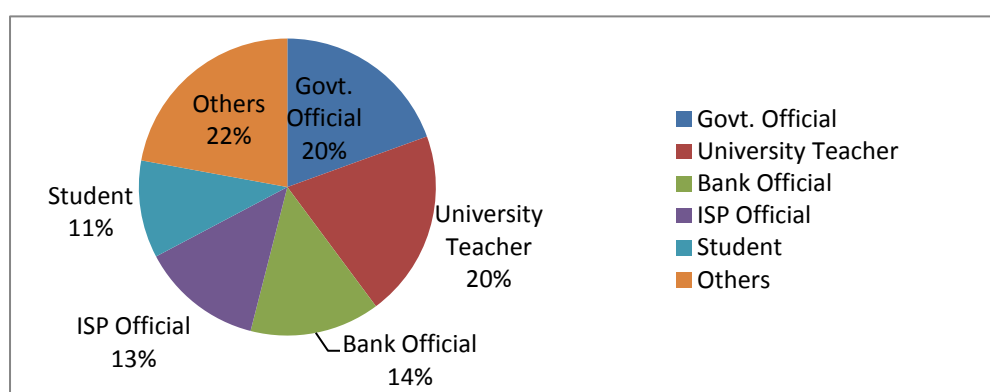
Table 4: Male-Female Ratio		
Type	Number	Percentage
Male	88	73%
Female	33	27%

Source: Survey Data, n=113

Profession of Respondent:

As shown in the Figure 6, the respondents are mostly professionals. The selected professionals are responsible personnel in the society. They are Govt. Officials, University Teachers, Bank Officials and ISP Official etc. There are also some students as respondents who are studying in master level at different universities. Others category represents the other officials in the city. All of the respondents are potential e-commerce users because of their education, responsibilities, position and opportunity.

Figure 6: The Profession of Respondents



Source: Survey Data, n=113

Education:

The respondents are from different academic level from HSC to PhD. All are educated people and the highest numbers of respondents are from Masters Degree holder i.e. they are 55% of the respondents as shown in the below given Table 5.

Table 5: The Academic Status of the Respondent

Education	Number	Percentage
HSC	11	10%
Hons	30	27%
Masters	62	55%
PhD	10	9%

Source: Survey Data, n=113

➤ Internet Access

Internet User

As the new generation professionals have been chosen from age group 25 to 40, it is found as assumed that all are internet user and potential e-commerce users also. Besides this group of people, there may be existence of e-commerce user but this group of people was expected to be e-commerce user.

Accessibility of Internet

Most of the respondents (89%) agreed that internet is easily accessible for them. Very few respondents somehow get internet access. Internet is completely inaccessible for none of the respondents. Table 6 shows the clear picture of internet accessibility among the respondents of the survey.

Table 6: Accessibility of Internet

Internet Accessibility		
Yes	101	89%
No	0	0%
Somehow	12	11%

Source: Survey Data, n=113

Monthly Average cost of using Internet:

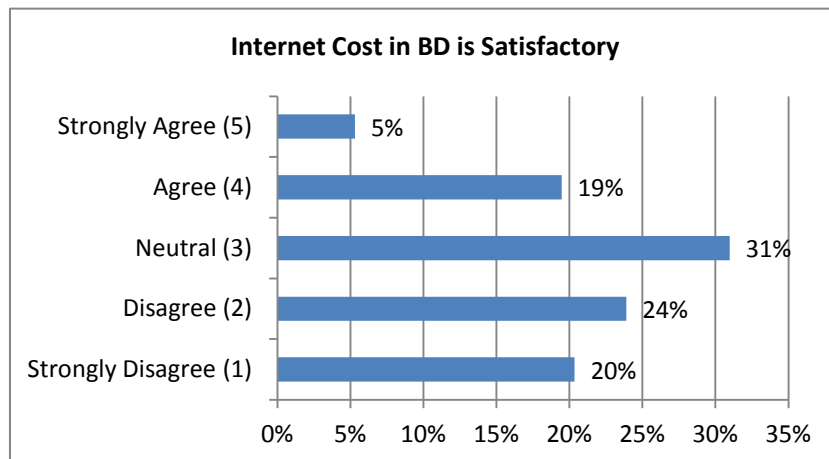
Among the respondent the range of internet using is from 0 taka to 1200 taka. Some people use internet free of cost because of various WiFi zone facilities and free internet facilities in their offices. Moreover people may use internet as a part of their official activities. As survey shows the average internet cost is 497 taka. In average the users use internet for average 6 hours in a day.

Internet Cost in Bangladesh:

Regarding internet cost in Bangladesh, mean value is 2.65. It shows that internet cost in Bangladesh is not very high but not the cheapest also as per people's perception. From interviews it was found that Bangladesh internet cost is reasonable and considering the

nearby country it is cheaper. Mainly internet cost in Bangladesh is comparatively cheaper in the city areas but in rural areas the cost is much higher. Figure 7 shows the survey output on peoples' satisfaction on internet cost issues in Bangladesh.

Figure 7: Satisfaction about Internet Cost

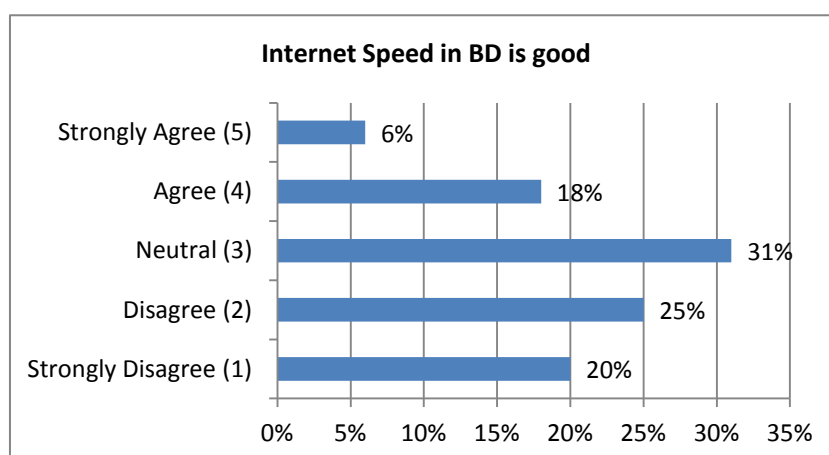


Source: Survey Data, n=113

Overall internet speed in the country:

Figure shows the response of statement "Internet browsing speed is good in Bangladesh", the mean value is 2.65 that is between 'disagree' and 'neutral' position. People enjoying different type of internet speed depends on their connectivity, device and package. In Bangladesh people are enjoying good internet speed but not high internet speed as the people of developed country is enjoying.

Figure 8: Internet Speed in Bangladesh



Source: Survey Data, n=113

➤ E-Participations

Device using for internet:

As all respondents are internet user, they use various types of devices. According to survey output showing in Table 7, remarkable numbers of users (62%) use both computer and mobile devices for internet connectivity. Only mobile phone internet users are 21% and only computer/laptop users are 17% of the total respondents.

Table 7: Device using for internet

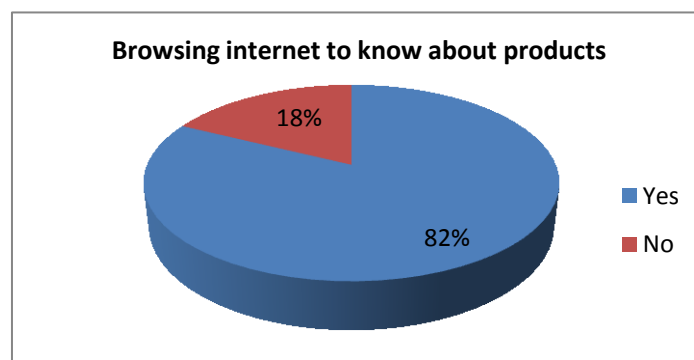
Device	Number	Percentage
Computer/Laptop	19	17%
Mobile/Tab	24	21%
Both	70	62%

Source: Survey Data, n=113

Internet using for product details including price:

Good number of users (82%) browse internet to know about the products before they purchase it from any shop or online. These 82% of people may not use e-commerce channel but at least they visit internet before they proceed to purchase from online or local nearby shops in the market. Figure 9 is showing that only 18% of the respondents do not browse internet before their purchase from shopping mall in the city. These 82% respondents are potential e-commerce customer and they are interested to use any e-commerce channel in future if the environment goes to their favor.

Figure 9: Browsing internet for product details

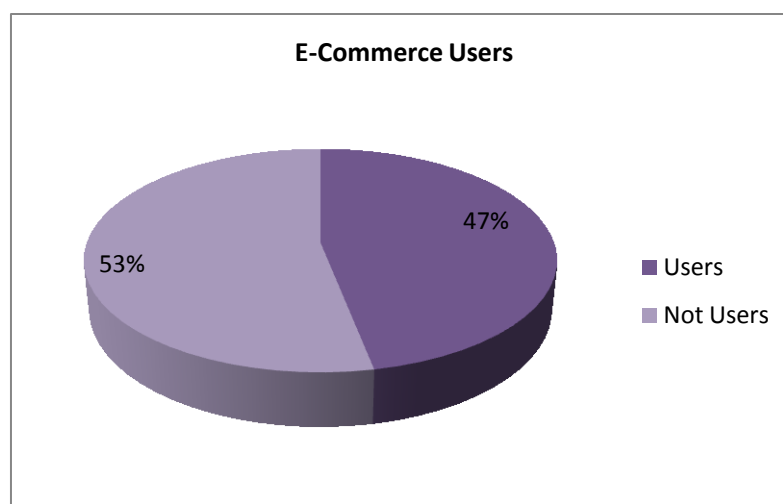


Source: Survey Data, n=113

Internet using for e-commerce:

Having internet connectivity within their reach and even after visiting many websites for verifying the product details over there, 53% of users are not purchasing goods using e-commerce solution. Only 47% users are doing e-commerce with very limited number of transaction and against their e-commerce transaction it contains very little financial value. Most of the users do not make big transaction over e-commerce channels as showing in Figure 10. They use e-commerce channel very occasionally using small amount of money transaction.

Figure 10: E-Commerce Users

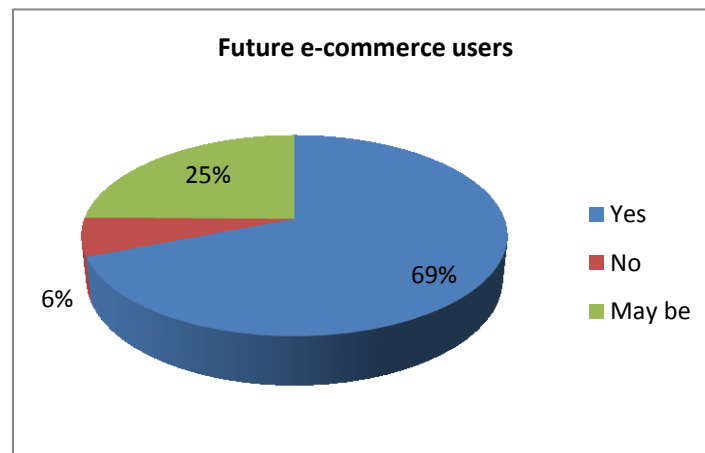


Source: Survey Data, n=113

Future interest about e-commerce using:

Though big number of people are not using e-commerce channel as showing in Figure 11, but people are highly interested to use e-commerce transaction in future. From the survey response, 69% users are confidently interested to use e-commerce in future days. Moreover 25% users show their opinion as 'may be'. It's looks interesting that though the users are not using e-commerce channel right now, they are hopeful to use the e-commerce channel in future. Here only 6% of users are not interested to use e-com channel further in future.

Figure 11: Future e-commerce Users



Source: Survey Data, n=113

Mostly visited e-commerce sites:

Though 47% users are doing e-commerce transaction, but their transaction number and frequency are not so big. 17% users use e-com channel for train ticketing very occasionally because the survey respondents are not traveler, they are mainly professionals. So they travel very rarely in the whole year. 16% users are using Ali Express that is foreign web sites. Good numbers of people use bikroy.com but bikroy.com is C to C communication and customer basically uses phone calls to communicate with each other for handover or receive the products. This type of transaction is not core e-commerce transaction. Facebook users are 11% in numbers and they use facebook as e-commerce channel as showing in Table 8. Facebook as e-commerce channel runs with very limited feature and people do not enjoy full pledged e-commerce solution here. There are some other e-commerce websites used by the survey respondents showing in others section in the Table 8. These transactions are also small in numbers with low frequency.

Table 8: Mostly Visited e-commerce sites

Page	Number	Percentage
Train Ticket	19	17%
Ali express	18	16%
Bikroy	18	16%
FB	12	11%

Page	Number	Percentage
Sohoz	8	7%
Chaldal	6	5%
Paypoint	6	5%
Daraz	5	4%
Others	13	13%

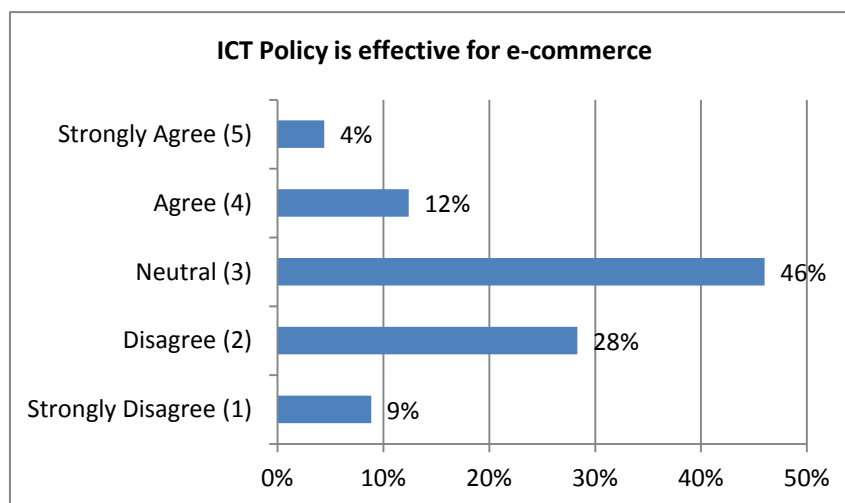
Source: Survey Data, n=113

➤ Enabling Govt. Policies

Effectiveness of ICT policy

We have ICT policy 2009 and later revised ICT policy named ICT policy 2015 was formulated. ICT policy is very important for a country because it covers most of the ICT related development in the country. Unfortunately our ICT policy is not very effective for e-commerce development though e-commerce and ICT are interrelated. Our ICT policy is very good for ICT related other fields. People's opinion from the survey in this regard contains mean value 2.75 (showing in the Figure 12) that is between 'neutral' and 'disagree'. ICT policy is not effective for e-commerce development.

Figure 12: Effectiveness of ICT policy for e-Commerce

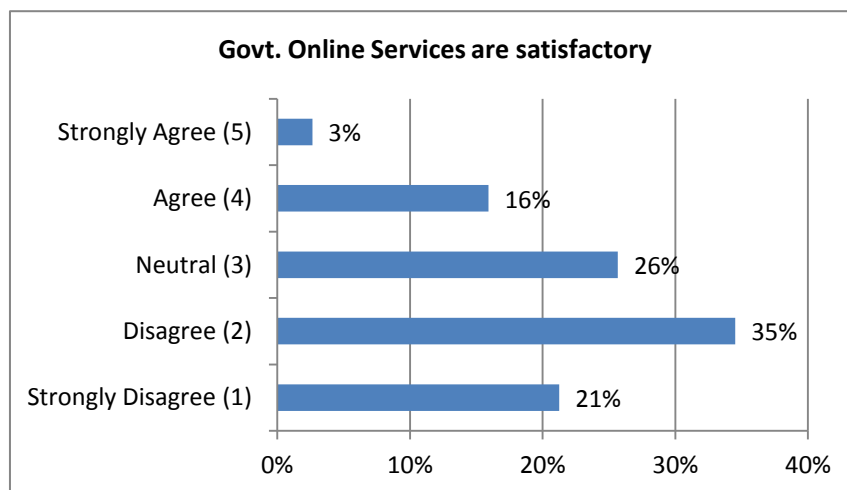


Source: Survey Data, n=113

Government Online Services:

Various government services are now offering online and it is in developing. People are now able to pay many government fees through mobile banking system (mainly through Teletalk mobile phone) and there are also online fund transfers for some specific services. Among the recent government online services, remarkable services are passport services, public school, college, university admission form submission, various utility bill payments, e-tendering etc. are remarkable. User's opinion from the survey is not positive in this regard because peoples' expectation is much higher. Here the mean value is 2.44 that is also between 'neutral' and 'disagree'. As shown in Figure 13, 35% people are disagreeing on online government services satisfaction issue.

Figure 13: Satisfaction of Online Services in BD

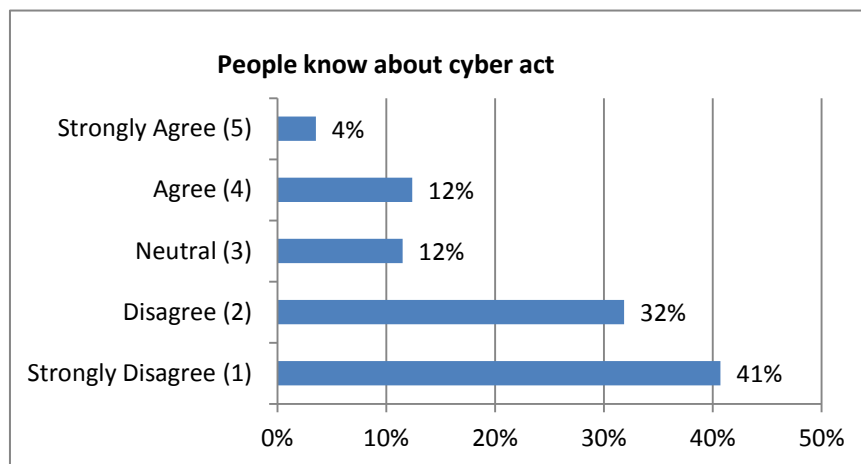


Source: Survey Data, n=113

Cyber Act in Bangladesh

41% respondents strongly disagreed with the statement "People know about cyber act". Survey shows that very few people know about cyber act of Bangladesh. Here Figure 14 is showing the mean value is 2.06 that is very near to disagree. As less people are aware about Cyber Act, this is not a good sign of internet safety. Like other crime day by day the cyber crime is also increasing globally as well as in our country.

Figure 14: Cyber Act in Bangladesh



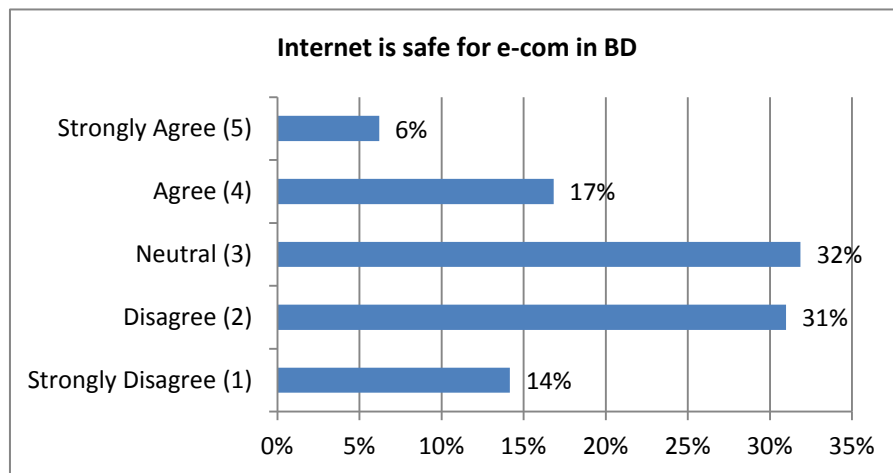
Source: Survey Data, n=113

➤ Security and Trust

Internet security for e-commerce activities

When security for e-commerce activities is concern, the mean value from the survey response is 2.70. It shows that internet is not trusted enough for e-commerce activities. Though Bangladesh has no severe experience of big number of internet hacking before the internet security is a peoples' concern. Actually after the Bangladesh Bank money fraud issue that was done by international gang, people have nowadays less faith on internet security. The negative reflection in this is regard is very much clear in the survey result. Considering the internet security, 31% respondents are disagreeing and 32% respondents are in neutral position as showing in Figure 15. If we merge the 'strongly agree' and 'agree' together and also 'strongly disagree' and 'disagree' together the picture will be clearer to us. In that case it is easily found that most of the respondents believe that internet is not safe in our country regarding e-commerce. Very few e-commerce users accept the online transaction related to financial transactions. Users put online order thru e-commerce channel but they always prefer hard cash as a payment method. In our country internet security related to e-commerce activities especially related to financial transaction is not in good condition.

Figure 15: Internet Security

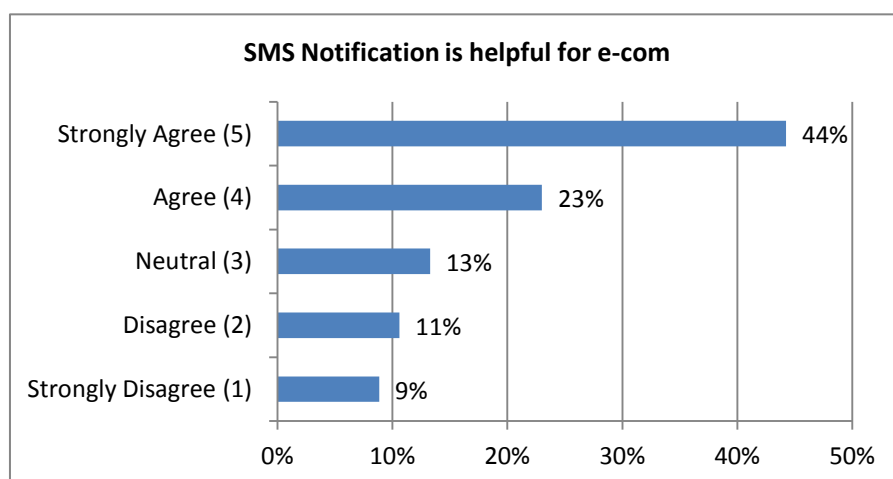


Source: Survey Data, n=113

SMS notification

People desire SMS notification against their e-commerce transactions. Users are nowadays very dependent on mobile communication. Now mobile phone SMS is using as second layer authentication like login for email checking, accessing online banking system and even using social networking portals like facebook. Mobile SMS is also getting importance to ensure e-commerce transaction. Big number of people (44%) strongly agreed that SMS notification is helpful for e-com. Here mean value is 3.83 and it shows that SMS notification is helpful for people and widely acceptable by the people. This is also an indication of less trust of people on the online transaction.

Figure 16: SMS Notification

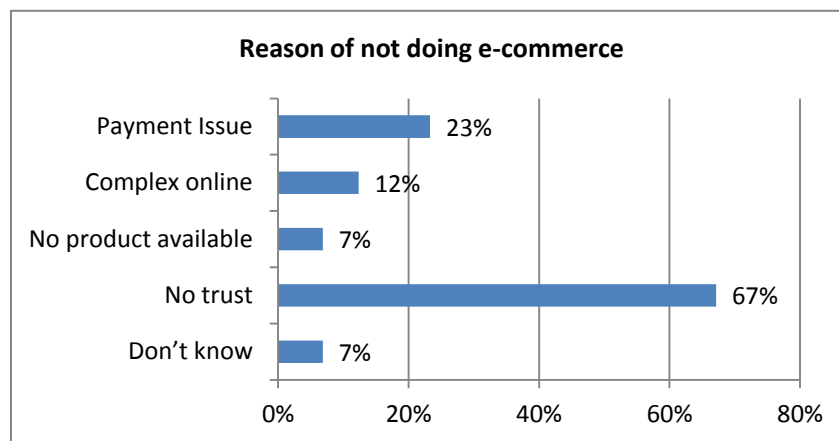


Source: Survey Data, n=113

Reason of not doing e-commerce

It's surprising that having all necessary elements and opportunities for e-commerce transaction, large number of people are not doing e-commerce activities. Having no trust is the major reason for not doing e-commerce where some other reasons are available. Payment issue, complex online feature, product unavailability and ignorance are the other causes. Figure 17 is showing that 67% people have no trust on e-commerce transaction.

Figure 17: Reason of not doing e-commerce

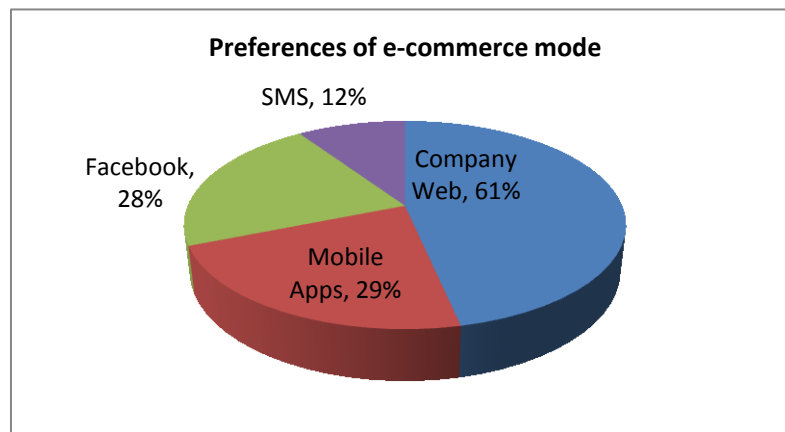


Source: Survey Data, n=113

Preference e-commerce mode

Facebook, Mobile SMS, Mobile Apps and thru company websites are available for e-commerce transaction. Survey responses shows that (in Figure 18) most preferable e-commerce mode is company websites (61%). From interview it is also found that facebook should not be a preferable channel for e-commerce transaction. Facebook page can not completely controlled by the page owners and it cannot be fully customized as per the requirement of business organization and customer. Customers also have more faith on company websites rather than facebook pages. There is also good number of people who looks for product in facebook pages. In our country the facebook users are increasing very rapidly, the number of e-commerce users via facebook is also increasing. Facebook users basically collect the product details from facebook pages and they make a phone call to know further about the product or to order for the product. This is actually not e-commerce channel as telephone is being used for further process instead of online channel.

Figure 18: Preference e-commerce Mode



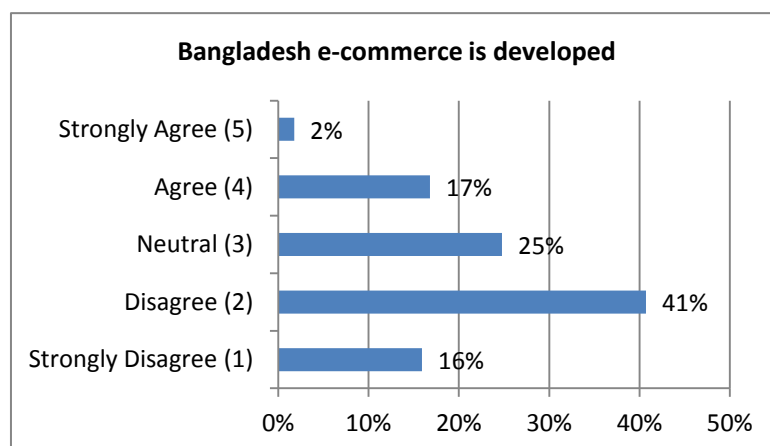
Source: Survey Data, n=113

➤ E-Commerce Development

Development of Bangladesh e-commerce

According to survey result, Bangladesh e-commerce is not developed. Here mean value is 2.48 as the response of statement "Bangladesh e-commerce is developed" (Showing in Figure 19). The interview respondents also confirmed it that Bangladesh e-commerce is not developed but it is in developing trend. After consulting the interview data it is found that Bangladesh e-commerce is not developed comparing our nearby country India and Pakistan also.

Figure 19: Development of Bangladesh e-Commerce

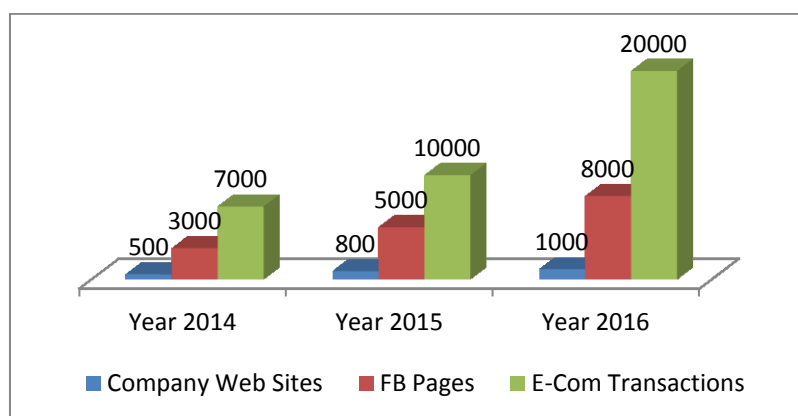


Source: Survey Data, n=113

Increasing of e-commerce web pages and Transactions

In last three years the e-commerce websites, e-commerce related facebook pages and number of e-commerce transactions have increased remarkably. Very good improvement is seen in the year 2016 showing in the Figure 20. As per the information provided by e-CAB roughly there are about 1000 e-commerce web sites, 8000 e-commerce related facebook pages and also almost 20000 number of e-commerce transaction with 450 core taka in the year 2016. Comparing with the year 2014 and year 2015, year 2016 is more developed year about e-commerce business. It's a positive sign of e-commerce development but amount of financial transaction is very little. In the year 2016 there were 20000 e-commerce transactions but total financial value against the big number of transaction was not satisfactory.

Figure 20: E-Commerce pages and transactions

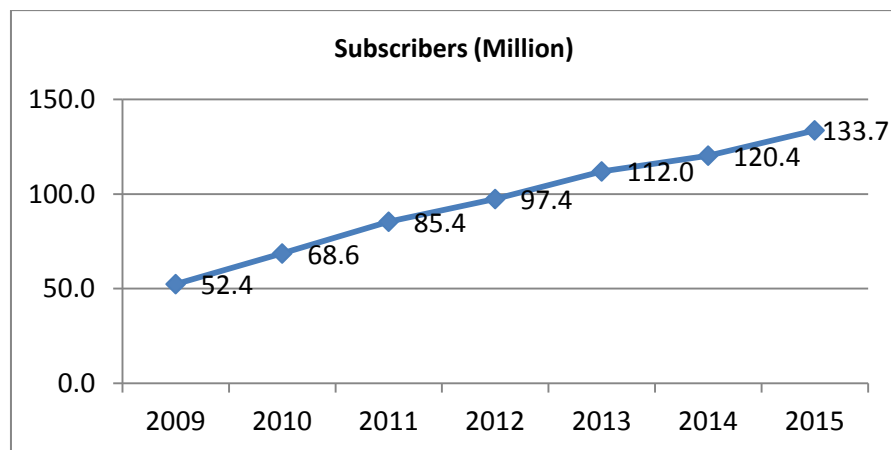


Source: e-CAB

Increasing of Mobile Phone Subscribers

Mobile phone subscriber is increasing very rapidly. Upward trend from 2009 to 2015 is seen. In December 2015 the total number of subscriber was 133.7 million as showing in Figure 21. It is a good sign for healthy e-commerce in a country because mobile phone users are potential internet users also. Moreover people are now using mostly the smart phones instead of traditional feature phones. Email ID and internet connectivity is a must for smart phone users to download various applications from play store or other sources. These mobile phone users may use e-commerce channel in future because e-commerce users are defiantly internet users. This is a good sign of increasing internet users.

Figure 21: Mobile Phone Subscribers

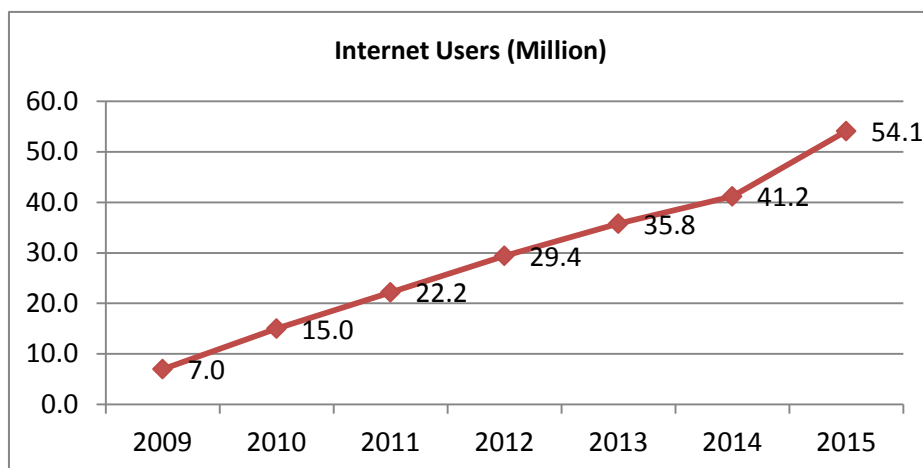


Source: BTRC Website

Increasing of Internet Users

Like the mobile phone subscribers' number, the number of internet users also increased remarkably in last 7 years. In the year 2014 total internet users were 41.2 million but in last year 2015 it was 54.1 million. It's really a good indication that more people are coming under internet umbrella. It is hopeful that if more people come under internet coverage, the possibility of using e-commerce will be high if there is no other negative factor. As showing in the figure 22, the numbers of internet users have been increasing gradually since year 2009. Hopefully the number is larger in the year 2016.

Figure 22: Internet Users in Bangladesh

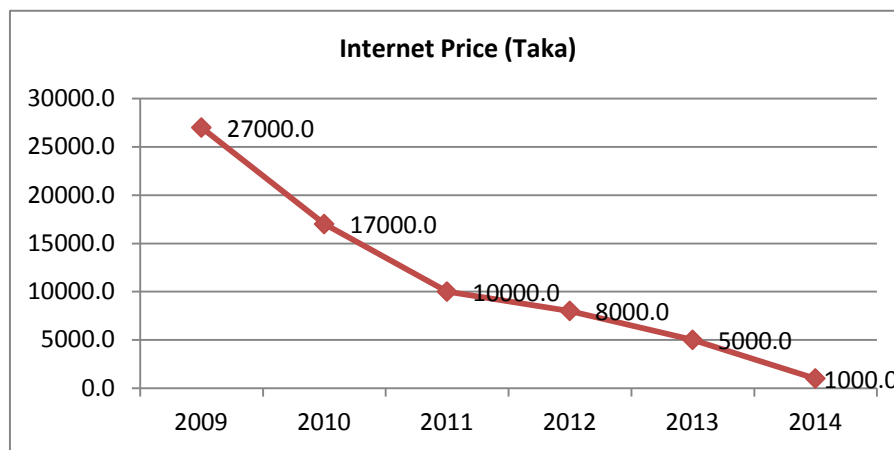


Source: BTRC Website

Internet price

As shown in the Figure 23, in the year 2009 1 mbps internet price was 27,000 taka and in the year 2014 it was only 1000 taka. It's a big positive change for IT sector. The price is falling gradually. This trend is very positive for e-commerce growth also. As per interview respondents, the average internet cost in city areas especially in Dhaka and Chittagong only 400 to 500 taka in the year 2016.

Figure 23: Internet (Bandwidth) Price



Source: BTRC Website

5.5 Data Collection from Interviews

In order to collect raw data from some specific targeted personnel, in total 9 numbers of interviews are taken from the people who are directly involved in senior level of e-commerce activities or can influence the e-commerce trends in the country. The respondents of the interviewee are

1. E-Commerce Service Provider
2. E-Commerce Association (e-CAB) President
3. ISP (Internet Service Provider) Senior Personnel
4. ISP Association of Bangladesh
5. Country ICT Personnel
6. High Official of ICT ministry
7. Senior Official of Bangladesh Bank

The data that was collected from the interview is provided as follows:

E-Commerce Service Provider:

In the country there are many e-commerce service providers. Some are selling goods in retail and in whole sale, some are also selling services and some are selling both. We have visited three big players of e-commerce market like bikroy.com, chaldal.com and foodpanda.com. We have also got some raw information from those e-commerce service providers as follows:

- Basically these institutions are working for selling goods and services over internet. Bikroy.com provides a platform for the users to Buy and Sell products and services online. They also provide an avenue for advertisers to reach their consumers through banner advertising, as well as a paid service for businesses to set up an e-commerce shop on bikroy.com. Chaldal.com is selling the daily needs product especially in Dhaka City area. They have four ware houses in the city situated in Uttara, Gulshan, Dhanmondi and Motijheel. They just collect order from internet users thru web portal and mobile apps and deliver the product to the customer end without any delivery cost. Foodpanda.com is also providing the online purchase facility thru the web portal and they are running their business in Dhaka and Chittagong city area only.
- All of the mentioned providers agreed that the total IT infrastructure of Bangladesh is quite satisfactory. Especially in city area the internet facility has been reached at the door steps of the citizens. But the people of rural area are not able to get internet facility through wired technology yet. But they can get internet connection over mobile phone network easily. In 2016 the total land of Bangladesh has been covered by mobile phone 2G/3G internet connectivity. Though the internet connectivity is a bit costly than the WIMAX or wired technology but somehow this is available in all over the country. Moreover in the city area some free WiFi zone already introduced by many operators.
- All the e-commerce service providers are in the same tune that per GB average internet cost is not higher in our country nowadays comparing with other developing countries. Per GB internet cost is a bit higher in cell phone network but in other networks this is within the peoples reach.

- Bangladesh e-commerce industry is still at a very basic stage – maybe 3-5 years behind India. However, large companies such as Google and Facebook are starting to take notice, and we expect that within the next year we will see large numbers of new users buying and selling online. Our e-commerce industry has been started with a very large scope of booming. In this stage proper guideline, Rules and regulations as well as understanding the market is very important. Currently Bangladesh is running 450 crore taka e-commerce markets which are very less comparing the total business of Bangladesh.
- Online transaction security and management is good in Bangladesh. In spite of having some individual small cases overall online transaction is well and secured in our country. Most of the banks are now using 'Two factor authentication method' for online money transaction. Some banks are using hardware based authentication system and some are using SMS based authentication system. This two factor authentication system is now accepted by the users and got popularity. But in most cases our customer prefers cash on delivery and Bkash or mobile banking transaction. So in that case security is not a big issue for Bangladeshi e-commerce users yet.
- E-commerce service providers mentioned that there is a relationship between e-government and e-commerce. Though these two are being operated in two different aspects. Government is taking initiatives to promote digitization so that its citizen can avail better and secured service thru online. So e-governance is getting popularity in the country as well as people are also developing hope that digital technology especially online communication will make their life easier. This understanding is reflecting on e-commerce transaction. Because some of those motivated citizens are now becoming the users of e-commerce.
- E-commerce issues are not well included in our National ICT Policy 2009 or 2015. As our e-commerce industry is not booming up and this is high time to think deeply about e-commerce transaction all over the country. But existing ICT policy is covering the e-commerce issues widely. So e-commerce policy is now demand of time. E-commerce service providers are now working with ICT division of Bangladesh Govt. under the supervision of e-commerce association of Bangladesh.
- Our internet users are aware about many e-commerce activities. Especially our facebook users all over the country are using many facebook e-commerce pages to

know about the products and to place order to get the products. So awareness is not an issue here. Main problem is here trust. For many reason our internet users have less trust on e-commerce sector. Among the lot of their assumptions some of those: Product may not be delivered as ordered, Product quality may vary, May be copied product, Guarantee may not be availed after purchasing the product, product is looking good on web but in real that may not be etc.

- Now e-commerce sector is enjoying VAT free market and it should be continued up to at least year 2025. E-commerce is now in its early stage, so if VAT is imposed on the e-commerce transaction, the industry will may hamper, people may discouraged to buy online. Private sector also should be aware on trust issues. This is the time to build the customer trust on e-commerce industry. If this sector fails to build trust in customers' mind the total industry will face difficulties to boom.

President of e-commerce association (e-CAB) also provided valuable information during interview with him:

- E-commerce Association of Bangladesh started its journey in November, 2014. This is the only association for the e-commerce institutions all over the country. This institution is also member of FBCCI, Bangladesh. This organization basically works to preserve rights of e-commerce business institutions and also works for the greater interest of e-commerce users in Bangladesh. This association is currently offering the lowest membership price as 3000 Taka and lowest renewal fee of TK. 2000 comparing with other association all over the country. This association is working very closely with ICT Division of Bangladesh Govt. Currently they are organizing e-commerce training for the e-commerce business personnel with the funding of Bangladesh Government. This association is working for drafting e-commerce policy 2016 which is the country's first e-commerce policy.
- Our total IT infrastructure is overall good. In city the IT infrastructure is comparatively better than the rural areas. In fact we have long way to go for ICT use in our rural areas. In Dhaka and Chittagong city area most of the regions are now under fiber optic network coverage. But rural area is now depending mainly on mobile phone network. We should concentrate on rural area for fiber optic networking. Still there is enough

chances to lay fiber optic connectivity easily because the rural infrastructure is still now in favor to do that. So this is the time to make the network. As our villages are also developing, it will be difficult to establish fiber optic connectivity in future just like city area in future. So govt. should concentrate on this.

- According to him Bangladesh e-commerce is now in child stage. But the IT development is happening so rapidly and simultaneously e-commerce growth will be in higher rate in upcoming years especially in the city areas. Comparing with the neighboring country our e-commerce development is not satisfactory yet. Myanmar, Pakistan and India's e-commerce market is healthier than our market. But we have huge chances to make it broad. The people of Bangladesh naturally can adopt the modern technology very quickly. For example our illiterate poor people can use mobile phone to make call to their desired person in spite of most cell phones are running in English language. So the e-commerce is also welcomed by people very warmly and there is enough room to groom it. He provided some data as follows:

Table 9: E-Commerce Status

	Year 2014	Year 2015	Year 2016
E-Com Websites	500	800	1000
E-Com FB Pages	3000	5000	8000
E-Com Transaction Numbers (Month Average)	7000	10000	20000

Source: e-CAB

- Bangladesh online transaction is secured. In last few years mobile banking has been spread in large scale in the country. For example bKash, Ucash, DBBL mobile banking is operating very smoothly in all over the country. Though there may be some bad incidents but overall the system is secured. As Bangladesh Bank given permission for online transactions since year 2009, the security is also closely monitored by Bangladesh Bank. This central bank is giving instruction time to time to the other commercial banks.
- While discussing about e-governance, Mr. Rajib referred some government initiatives like college university online form fill-up and payment thru Teletalk systems. He argued that as this big initiative was taken by government and it was mandatory for the service

seekers, people were bound to use online for form / data submission. After involving with this online mechanism people understood that this online transaction is good and hassle free for them and government is making something good for the citizen and this online transaction is also safe to do in future. This trust and flexibility set by government is good enough to encourage the people to use e-commerce facilities. These online users are ultimately motivated for online data communication and doing online communication when they get chance. So e-governance is promoting e-commerce in the country though e-commerce is not an agenda of e-governance.

- Our National ICT Policy 2009 and 2015 is not enriched by e-commerce issues. He mentioned that simply the e-commerce issues were overlooked in the ICT policies. Though e-commerce is part of ICT but it demands some extra care for its booming. Moreover it's a big industry for Bangladesh considering the near future. So separate policy is needed to take care of this industry as well as to control the industry so that it can get a good legal shape. To meet the demand of citizen the ICT policy should be enriched with e-commerce content or a separate e-commerce policy should be drafted. Currently e-CAB is working with ICT division to finalize e-commerce policy.
- Our internet users specially the city dwellers are aware to take e-commerce advantage in purchasing sitting at home but our rural citizen are not aware enough on this. There are lots of facebook users in rural area and the number is increasing day by day. These users are getting news about some online purchasing the few of them also using FB to place orders online. In that case delivery cost is getting high because of transportation. Most of our e-commerce service providers are sitting in the city area. So it is difficult to reach product in rural area in low cost. Overall our internet users are aware but most of them are not using e-commerce because of trust.
- Government should adopt a very good e-commerce policy that will be helpful to promote e-commerce industry in the country. More e-governance activities should be opened for the citizen. Then ultimately people will come under e-commerce umbrella. Private sector should use these e-commerce activities in well organized manner. To setup e-commerce is less costly than to setup a shopping mall. Investor should invest in this potential sector.

ISP (Internet Service Provider) Senior Officials:

Senior ISP personnel were interviewed in three different locations. For conducting the interview three leading ISPs in the country Link3 Technologies Ltd, Fiber at Home and Chittagong Online Limited were visited. ISP association is the association of these ISPs who works to preserve the right of ISPs and communicate with government authority on behalf of its members. Their feedback is as follows:

- ISP (Internet Service Provider) provides internet at the user level and corporate level. In Bangladesh ISP is running since 1996 as Bangladesh enjoy first internet connectivity on June 06, 1996. In that year only 2 ISPs were licensed. Now in 2016 there are 184 ISP in the country. Among those 119 ISPs are operating Nationwide and 65 are operating central area of the country.
- Bangladesh IT infrastructure is overall in good condition. Mainly the infrastructure of Dhaka, Chittagong, Sylhet city area and near the city areas are in mint condition. Rest big portion of the country is now developing. Many ISPs are working to build the network in all over the country because our rural areas and other city areas are also potential for internet users.
- Internet cost is lower in Bangladesh but not so cheap actually. Comparing with India and Myanmar per GB internet average cost is almost the same but comparing with Pakistan this cost is a bit high. But in short it can be said that our bandwidth cost is not so high and people are affording the cost somehow.
- Bangladesh e-commerce is now in developing stage with a large scale of possibilities. More than 1000 websites are running for e-commerce purpose. Many big national and multinational companies are now hosting their website with e-commerce facilities. Government is also allowing online money transaction both from bank to bank and bank to users.
- There is no doubt that Bangladesh online transaction is secured. As per Bangladesh Bank's guideline all banks are now using multiple internet connectivity. If one link fails for fiber optic cutoff or any other reason, other will ensure ceaseless internet connectivity for online banking transaction. Moreover, Most of the banks now use fiber optic connectivity for inter banking data transaction. This fiber optic data connectivity is

safe than metal wired data communication. In Bangladesh online banking is still under process and all banks are working to make their banks online.

- E-governance is directly and indirectly very helpful for e-commerce promotion. Citizen or the users first get faith and inspiration to use internet to get service from the biggest service provider i.e. government and other social bodies. In case of government the money transaction is still via Teletalk or other medium but somehow the internet submission is linked with money transaction. Both combinations create a faith in the citizen's mind that this type of transaction is feasible and state is promoting this type of service. So ultimately the user turns into e-commerce activities. Online passport form submission is one of the biggest examples of e-governance till now. Government did it very successfully. From online a user or service seeker citizen can submit the application form online. Moreover he can deposit the necessary passport fee by visiting some designated bank branch and also online fund transfer. This creates actually an amazing trust in users mind that online money transaction and e-service is possible and state is promoting the service.
- Most of the people in the country are not aware enough about our National ICT policy. Even the personnel related to e-issues are also not aware enough about National ICT policy. In fact the National ICT Policy does not own developing e-commerce industry in large scale. So for country's development it is now demand of time to make a e-commerce policy and to implement it as soon as possible.
- Our smart internet users are aware about e-commerce facilities. They look for the facilities but not using in large scale because of some reason like Trust and Provision to use the e-commerce. They may look for free home delivery, Payment on delivery, on time and short time delivery etc.
- Government should own the e-commerce prospect and Private sector should come up with new ideas to grasp the e-commerce market.

Country ICT Personnel and other ICT Related Officials:

Mr. Mostafa Zabbar is closely related to our ICT sector from the very beginning. Especially he is famous in the country for introducing Bijoy software which was the only Bangla writing software in the country at that time. Moreover he is involved in many ICT related task. He is one of the advisors of newly formed e-CAB (e-commerce Association of Bangladesh). Moreover, official of ICT Division, Bangladesh Bank official have been interviewed. Gathered information from those officials is:

- There is no doubt that Bangladesh IT infrastructure is overall in good condition and also developing in large volume all over the country. Government's Digital Bangladesh Agenda is one of the causes of IT developing in the country. This infrastructural development is also going very rapidly.
- Per GB (Giga Byte) Internet cost is reasonable in our country but it should be reduced more in upcoming years. Meantime the internet cost is reduced than the future and hopefully it will be less in near future.
- Bangladesh e-commerce industry is struggling to set in the country. Our people are also very much interested to buy online. Meantime they are using many local and international web sites to purchase online specially from elite areas. It is increasing very rapidly.
- Bangladesh online transaction between bank to bank and also between banks to user is almost secured. People are now using to give payment online in limited phase. Mobile banking is also getting popular at mass level.
- There is simply nothing about e-commerce in the National ICT Policy 2009 or 2015. We are working to develop a new policy i.e. e-Commerce Policy 2016 and this is almost finalized. Hopefully it will be come out soon.
- We should increase trust as well as awareness to the people to promote e-commerce in the Bangladesh market.

5.6 Case Studies

There are three case studies in the research work. Case study 1 is from a courier service representative who is closely related to e-commerce order delivery handling, Case study 2 is

from a regular e-commerce user and Case study 3 is from a e-commerce business person in Dhaka city area.

Case Study-1

Mr. X is an employee of a private courier service in Chittagong. His company mainly carries and delivers goods from one place to another. He is working for this company for last 11 years. As he told, his company has been successfully doing business to carrying letters, documents, goods, seasonal fruits, foods, heavy equipment etc. In last five years he is experiencing different business environment. He is getting less number of documents and letters order. More surprisingly a new type of order handling is increasing that is “online order”. They usually call it online order but in fact these are e-commerce order. These orders are mostly post paid orders. They do not deliver the orders at customer premises. Customers come to their office and collect the goods after making the necessary payments (Goods charges and carrying charges) and confirming their cell numbers. The number of this type of orders is increasing day by day and from year 2013 company has introduced special designated desk for only handing online orders. This year in 2016 they are processing about 200 orders per day. This number is just double than the previous year. He do not know what type of e-commerce transaction these are because in the invoice the recipient name and sender name is written with mentioning online booking. When customer comes to receive goods, sometime he came to know that these bookings are from facebook pages, websites, phone orders etc. He got very few order with pre paid status but most of the orders are post paid. It means customer comes and receives goods after payments. Another interesting thing is there are some orders for those no customer come to receive goods. They make phone call to customer to receive the goods and if they do not come in two days then they return the goods as per sender’s address. In that case his company gets the parcel handling charges from the sender. He receives 5 to 10 numbers such type of orders per day.

Case Study-2

Mr. Y is an e-commerce user. He is government service holder living at Dhanmondi in Dhaka city. He uses many local e-commerce web pages for his daily needs specially. For daily groceries he put orders from his mobile phone apps. He is satisfied to the company that is delivering the groceries at his door step. Mr. Y is mainly purchasing rice, dal along with the dry item that is needed in regularly. He put two or three time in a month for this grocery items. He never pays advance for this purchasing. When delivery man comes to his premises, he checks the products and confirming the quantity and quality he received goods and pay him manually. If any product is not up to the mark he returns the goods to the delivery man and does not pay for those goods. The company receives the goods. There is a chance to pay in advance using credit card, debit card and mobile banking but he never do it because he wants to get the product first then payment. He is happy because he is getting the product without any delivery charges and even he is getting product in cheap rate than the local grocery shop in his area. Besides this online grocery, sometimes he orders for some gift item very rarely. For some electronic goods, he often checks the price and product details online before he goes to any shop in the shopping malls. Generally for big deals he never relies on e-commerce purchasing. He also has some negative experiences while he purchased online from a famous brand shop in the country. He made all the payment in advance using his credit card online during placing order. When the goods came at his premises he found some faulty goods and wanted to return it but the brand shop authority denied his request on a ground that they have no return or refund policy. They also said sorry for this unexpected occurring. They informed that during product sending, the product was good in order and goods carrier also claim that they handle the goods with care and they have no liabilities about the product qualities. In that case he lost his interest on online shopping making advance payment. So Mr. Y have both pleasant and unpleasant experiences regarding e-commerce.

Case Study-3

Mr. Z is an owner of an online shop in Dhaka city. He is doing business in 6 different areas of Dhaka city having six ware houses. He has been doing business since year 2012 in Dhaka. He mainly sells the grocery items along with vegetables, meat, chicken etc. As e-commerce business enjoys VAT free business, it is possible for him to deliver customer a bit cheap rate for many products. He is doing business very good and his business size became almost double in more than three years. He started his business with a personal initiative having his friend with him. After huge struggling, now he is in this position. He planned to spread his business in urban areas and also outside of Dhaka but he is facing difficulties because he thinks that customer in urban and rural areas are not ready yet for e-commerce transaction. People of Dhaka city use e-commerce transaction because they want to avoid the traffic jam, transportation cost etc. He is hopeful that if e-commerce is well developed in the city areas, the people of urban and rural areas will also use this business channel to have the product at their door front. He also feels that his company will introduce 24/7 call center very soon because its customers' demand. Usually customer place orders at night. After day long hardworking they return home and mainly after evening they take rest at home and place order for various items thru online. Sometimes they get confused about product details. Then they need online chat facilities or telephone call option so that they can get the needful information from our customer service agents. If the company can introduce effective call center for customer, hopefully it will increase the customers' trust on e-commerce transactions.

5.7 Analysis

Survey data shows that e-commerce is not developed in Bangladesh yet. E-commerce business is running in Bangladesh in consumer shopping, wholesale shopping, corporate shopping and also some global shopping. According to survey data, good numbers of people are using e-commerce but they are making very small number of e-commerce transaction with very little financial value. Internet is accessible to everyone though very few people mentioned it somehow accessible. Internet cost is not very satisfactory in Bangladesh according to the survey but internet cost is not a big issue for the users. Internet speed is not remarkably slow in Bangladesh. People are using medium type of internet connectivity. Surprisingly most of the users are interested in future e-commerce transactions. So it can be concluded that people are using less e-commerce now with an ambition to use e-commerce in future. This is good sign for Bangladesh e-commerce market. People are using internet to check the product details before purchasing the product from the nearby market or online shops.

According to data collected from interviews, now the users of Bangladesh are getting easily internet connectivity thru mobile phone (3G/2G), Land line, Fiber optic connection or wireless communication. Internet price is not so less but comparing with neighboring country the rate is acceptable and this is decreasing day by day. Almost 80% population is now using mobile phones and almost 1/3 people in the country are now using internet using different mediums. ISPs got permission to work in rural area to establish network in the rural areas and they are doing this very actively. We have no infrastructural or software issues enabling e-commerce activity in the country.

In Bangladesh internet is secured for communication and especially internet banking is safe in spite of having some few small cases in last few years. People have still very less trust on internet commerce. People rarely believe that they will get the product on time after placing order, the product will be the same as he/she ordered, the product will be in good quality, they will get proper warranty or guarantee as they are not purchasing directly from shop. In case of product mismatch, the refund of money or claiming for the right product is a big challenge for the users. For this reason user consider e-commerce transaction over internet as not safe.

Most of the interviewees were in the same tune that ICT Policy 2009 / 2015 are not articulated properly considering e-commerce. Separate e-commerce policy is needed to develop the rising e-commerce industry. Tax issues should be clearly mentioned in the e-commerce policies so that this sector can enjoy less tax and VAT to flourish in Bangladesh Market. E-governance services should be more easy, modern and smart so that it can attract people much.

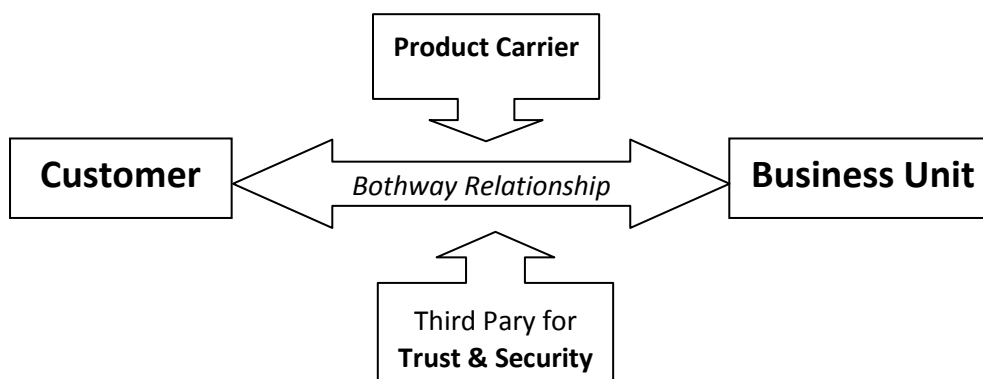
The information has collected from the case studies are also showing the same line like survey data and interview data. From the case studies it is clear that e-commerce transaction is increasing in Bangladesh. All of these e-commerce transactions are not going thru proper e-commerce channel. Some are thru facebook, websites, phone calls and may be thru emails. There is very little e-commerce transaction with settled payment while booking for the goods. Electronic payment is very less in Bangladesh though many people have electronic payment system like credit card, debit card, mobile money transfer, online fund transfer etc. E-commerce business personnel are doing business for last few years and their business is also growing but they are scared about the future tax and VAT issues because till now in the country there is no e-commerce policy yet. According to the business personnel e-commerce policy may reduce their tension regarding their business prospects. Very few companies are following goods return policy with some limitations but most of the companies are not following goods return policy. Especially the band shops have not following the goods return policy. In that case people are confused to make their payment in advance.

People are participating internet based activities in large scale than previous time. Especially the number of facebook users has increased in big numbers. Users visit various web sites to know the product details, to see the product images, to check the price and also to buy products. Our people are now well aware about online market, online payment and overall. People are also interested to use e-commerce activities in near future. In spite of being aware about e-commerce market surprisingly the user are not doing e-commerce in big shape. The interview, survey and case study revealed that trust is the main factor of this less number of e-commerce activities.

5.8 Discussion

The research work shows that we have no such big issues promoting e-commerce in our country. Our market is electronically mostly ready for e-commerce activities. We have good infrastructure, better internet speed than the last five years, medium cost of internet, people are also aware about online market. Mainly our ICT policies are not enabling e-commerce in the country. Hopefully we will get individual e-commerce policy that will help our market and people more to promote e-commerce in the country. Another very important issue is “Trust”. E-Commerce means the online transaction between customer and business unit. People electronically see the product online and they choose the product. After choosing they put order also over internet. After putting order a third party may be needed to deliver the product all over the country except the electronic goods or services. Now all over the country we have various courier services to carry the product in all over the country after successful e-commerce order.

Figure 24: Third party between the two parties



In this stage to see the success of e-commerce, the business units need to ensure a very clear refund policy and also clear indication is needed how the product will be return and the money will be refund. Here another third party is needed to ensure the financial safety and also to preserve the right of both buyer and seller. In many countries there are such third parties like Paypal. Paypal ensures the customer about their payment issues and they promptly response the customer’s query or claim about financial transaction. For this reason in those country people feel more interest to do financial transaction over internet thru this type of third party. In some countries there are some smart e-commerce portals like e-bay or amazan.com. These service providers ensure a very trusted refund policy. If

customer change his mind about the product or the product seems not up to the mark customer can refund the product thru postage and can get the refund easily and instantly. So the two way trust is needed to ensure e-commerce growth in the country. E-Commerce policy or any other suitable policy should include these issues so that government can monitor or can support these third party organizations those are really needed to establish a very rich e-commerce market.

5.9 Observations on Research Questions

The first research question was intended to explore the infrastructural and software inputs which can enable growth of e-commerce in Bangladesh. The study found that Bangladesh has a very good IT infrastructure almost all over the country and more development process is going on but this infrastructure is not enabling e-commerce much. We are not facing any software issues related to e-commerce activities now. Moreover Bangladesh is earning huge foreign currency by exporting software in many countries. Internet is accessible for all citizens in the country in different media. It is very easy to access internet in Dhaka but in other areas of the country it is not as easy as Dhaka. Internet cost is lower or in acceptable condition comparing to neighbor countries. Survey shows that monthly average internet cost is about 500 taka. Overall internet speed is satisfactory in the city areas but not in other part of the country. Moreover the cost is going down gradually as seen in last five years. In spite of having all infrastructural and software environment, Bangladesh e-commerce is not developed yet. E-Commerce sector is developing gradually. Comparing with year 2015 the number of e-commerce transaction turns into double.

The second research question was aimed to check whether our ICT policy and laws are supportive for e-commerce or not. There is no positive perception of people about our ICT policies and laws regarding e-commerce. Big number of respondents disagree on the statement that Govt. services online are satisfactory. Large number of people confirms that people in country mostly do not know about cyber act. Govt. has published ICT policy 2015 after ICT policy 2009. Both ICT policies are good for overall ICT development but not focused on e-commerce issues. In this year Govt. is in process to draft an e-commerce policy and yet to finalize it.

Third research question was intended to check the implementation of ICT policies specially enabling country e-commerce. ICT policy is indirectly helpful for e-commerce activities but not very much practical enabling e-commerce. In our country internet communication is safe and both government and people are well concerned about security. But in case of e-commerce transaction people have less confident that internet communication is safe. ICT policy has put enough emphasize on internet communication security. People are interested to have SMS notification after any sort of transaction. Bangladesh Bank also instructed the commercial banks to push SMS notification for financial and other related transaction.

The last research question was aimed to check the awareness situation of people on e-commerce activities. People are well aware about e-commerce issues. Survey shows that good number of people use both laptop and mobile phone for internet activities. Though big number of people not doing e-commerce but they browse internet to know about the product and to check the product price before they purchase it from the market. In spite of having all people near about 53% do not use e-commerce but 69% people are interested to do e-commerce in near future. Survey revealed that main reason of not doing e-commerce is having less trust on online confirmation. Other reasons are product quality, product delivery, product unavailability and product return issues.

5.10 Analyzing Findings using Analytical Framework

Table 10: Analyzing the findings

Issues	Findings
<ul style="list-style-type: none"> ➤ Government policies are good enough for ICT infrastructure but not enabling much for e-commerce development. ➤ To pushup e-commerce activities and to make friendly environment of e-commerce a new e-commerce policy is needed. 	<ul style="list-style-type: none"> ➤ E-Commerce is still developing in Bangladesh and we have long way to go. ➤ Having most of the e-readiness factors, people are not doing e-commerce activities in big numbers because of Trust issues and financial
<ul style="list-style-type: none"> ➤ Internet is secured for transaction in the country but people have less trust on internet for e-commerce transactions. ➤ Mainly two parties i.e. buyer and seller are involved in e-commerce activities, more party is need to be involve to 	

Issues	Findings
secure the goods handover process and to safe the financial transaction.	transaction matters. ➤ Number of e-commerce web portal is increasing rapidly and e-commerce market share is also growing
➤ Peoples are adopted very fast with new technology ➤ Users are participating online / electronic activities in many ways ➤ Bangladesh has a good number of facebook users having 25% penetration rate.	
➤ Internet is accessible in all over the country by various mediums like broadband, Lease line WiFi, Mobile Internet, 3G, Wimax etc. ➤ Users are also enjoying a competitive rate for internet package in the country but these are mainly city based. Rather than city areas, internet connectivity or speed is not so satisfactory.	

Government has many policies those are related to ICT issues. The latest and most effective policy is ICT policy 2015. ICT policy encourages the IT entrepreneurs with very different smart packages specially the female entrepreneurs. Good ICT environment is necessary for developing e-commerce activities. If this ICT development goes on smoothly, definitely e-commerce sector will flourish.

Till now there is nothing big occurrence related to data communication within the country. Bangladesh bank issue is different case here as this is related to international factors. But overall our people's perception about electronic communication for e-commerce is not highly trusted. Having these perception, e-commerce is not developed yet.

Bangladeshi people easily do welcome the new technology. Though our literacy rate is not so high but the new technology is adopted by the mass people very quickly. People are participating online activities in many ways. The number of facebook users is also good. But all e-commerce activities do not go on facebook as business companies have different websites or mobile apps using their platform.

Internet is accessible all over the country but all e-commerce activities in the country are not available widely in the country. To make e-commerce available in all over the country especially in the rural areas, our postal or courier service need to be more developed. Without proper handling of compliance, Securing the payment and third party presence between the two parties e-commerce will not develop.

5.11 Chapter Conclusion

After conducting some interviews and having survey response we got an explainable picture of Bangladesh e-commerce. Regarding ICT, the scenario of Bangladesh is satisfactory. Overall it can be concluded that Bangladesh has good telephone infrastructure, good internet coverage, software industry is working good and also very rapidly developing, city people are enjoying competitive cost internet connectivity along with easy access for internet, there are no big security issues in the country, people's participation about online activities is also satisfactory. In spite of having lot of good things we have also shortage of ingredients of e-readiness in the country. E-commerce friendly policy, easy internet availability in outside the city areas, peoples' trust on e-commerce transaction, third party presence between the two parties are needed to develop the e-commerce in the country. In the next chapter the way forward to ensure the e-commerce development is described. The next chapter is planned to draw major findings of the research and some concluding remarks along with recommendations will be mentioned there.

CHAPTER-6

Conclusion

6.1 Introduction

The general objective of the research work was to examine the e-readiness for the e-commerce development in Bangladesh which will give us an opportunity to understand our country's position regarding e-governance.

More specifically the objectives of this study were-

- To examine infrastructural situation of the country to enable effective electronic commerce system in Bangladesh;
- To examine the policy issues promoting e-commerce in Bangladesh.
- To get a clear idea about peoples' awareness and peoples' readiness for e-commerce activities.

After the research work it can be concluded that regarding e-commerce development overall scenario of Bangladesh is not up to satisfactory position, but it is developing gradually. Infrastructural situation of the country is good but e-commerce activities are yet to reach desirable volume. ICT policy is not enabling to promote e-commerce activities widely in Bangladesh. Overall the country e-readiness situation is average considering IT infrastructure, Software issues, Govt. policies, people's adoption on technology etc. Among the selected sample in this study, participation of e-commerce activities is also not so less, but good number of people is not under e-commerce umbrella. Moreover, the people who are doing e-commerce transactions are not very much involved with big e-commerce deals. They mostly do some online ticketing very occasionally and sometimes they are purchasing some rare goods from outside of country through online order submission. In fact the number of e-commerce transactions and total volume of money transaction is not satisfactory. People of Bangladesh are aware enough about online activities and also aware about e-commerce activities but they are not participating in e-commerce activities in big

numbers because of having less trust on online commerce and also people are facing product delivery difficulties as well as payment difficulties. Our people mainly prefer hard cash instead of soft money transaction and they don't prefer payment before receiving the goods or services. Though we have satisfactory ICT infrastructure, we have e-readiness issues and also have some difficulties for e-commerce activities. In spite of this situation, e-commerce activities are growing in the country especially in last three years. Its good news for Bangladeshi citizen that in spite of having e-commerce business difficulties in Bangladesh, lot of international e-commerce service providers is coming here. Some international service providers also have started their business in small shape in this country. Very recently internally known 'UBER' arrived in Bangladesh for giving taxi services in the Dhaka city area. There is no doubt that this newly arrived service provider will face difficulties to run in Bangladesh because of our overall e-commerce environment as well as policy issues. Definitely the upcoming e-commerce policy will further encourage e-commerce activities in the country.

6.2 Future Policy Recommendations

Now this is the developing tenure of Bangladesh e-commerce. It is also high time for shaping the e-commerce market and to lead the market towards success. Government can take many necessary steps to promote the e-commerce market. As it has been observed that policy plays a very vital role to develop this sector, govt. should take initiatives to revise the existing policy and also to formulate new policies.

As e-commerce somewhere depends on money transaction activities, Bangladesh Bank can adopt policies to make the money transaction easy but secured in all over the country. Instead of hard cash, soft money transaction is helpful for healthy e-commerce. So Bangladesh Bank can take necessary measure to ensure secure money transaction within the commercial banks. These things should be reflected correctly in the Bangladesh Bank policy and guideline.

Tax and VAT is very important elements for a country's economy. Now Bangladesh e-commerce sector is enjoying VAT free business environment. This environment can't be continued for unlimited period of time. So government needs to take essential steps to

impose or not impose VAT on e-commerce transaction. E-commerce growth is a good concern here as well as total economy should be within the consideration. In government future policy related to e-commerce these issues should be focused correctly.

Trust during e-commerce transaction is very important factor. It's a big obstacle for Bangladesh e-commerce growth. Government should move forward to ensure these trusts between two parties during e-commerce transaction. Third party involvement is needed between the two parties from order placing to delivery of products and also the third party or parties need legal support from government for compliance issues and government will may need to monitor their activities. Illegal money transferring to foreign country using e-commerce channel is also a big challenge for government. So these issues need to be considered during new government policy formulation.

In Bangladesh we have e-readiness for e-commerce activities but not completely supportive for developed e-commerce. Many e-readiness elements are absent in Bangladesh like nationwide internet connectivity, Internet cost, Internet security, government policy issues etc. In future policies of government these should be reflected timely and properly.

6.3 Way Forward

E-Commerce is now not a dream for Bangladesh, it is a reality. To make the people more engaged in e-commerce activities, this study has found that some more initiative needs to take further. Some recommendations are –

1. It is very essential to build people's trust on e-commerce activities.
2. Postal service should be more prompt and quicker about delivery of goods and compliance issues should be handled with much care.
3. Regarding monetary transaction third party like Paypal should have access in Bangladesh market and govt. should adopt policies to monitor and to control these third party e-commerce parties. The developing countries are already enjoying the benefit of having these third parties within the two parties of e-commerce activities.
4. E-commerce business parties also should adopt a very effective good return policy according to customers' choice. Within the particular time frame for valid reason

customer should be allowed to return the goods (without tempering the goods condition). In that case postal charge may be borne by customer or business party depending on terms and conditions.

5. Cash on delivery is popular in Bangladesh because of trust issues. But for healthy e-commerce transaction this payment method is not good. So again a trusted third party is needed here.
6. Bangladesh Bank should take more steps or need policy revisions so that user can flexibly use their credit and debit cards. Security of money transaction thru cards should be ensured by the concerned banks. Currently some of the banks in Bangladesh are using two way authentication methods for online card transaction. It should be ensured for any money transaction of e-commerce.
7. International third party is needed to secure international transaction thru international credit or debit card. Otherwise the international e-commerce will face difficulties.
8. E-Commerce policy has been drafted and awaiting to be finalized. E-commerce friendly initiatives should be reflected in this new policy and global issues need to be considered as well as local e-commerce issues.

6.4 Scope for future research

Like other research work this study also has some limitations. Some relevant and important issues may be overlooked in this study for limitations of time and resources. E-commerce has many positive aspects in many countries. Bangladesh is a developing country and struggling with many difficulties. Moreover the country is a highly populated country. So spreading of e-commerce activities in the country may have some negative impacts on its business area because traditional business may face customer crisis in their business. Every new initiative faces many difficulties during the starting. E-commerce is new for Bangladesh market, so this new trend will may face new difficulties on the way of its journey. When computer came in Bangladesh market, it replaced traditional and electric type writer machine very rapidly because of its fast data processing and data preservation opportunities. In that time the employee of many offices especially in the government offices didn't welcome computers because of their fear of losing job. But gradually the

computer has been warmly welcomed in the offices and now no office can be imagined without computer. So there is enough scope to conduct future study considering the negative impact of e-commerce in developing country like Bangladesh.

References

Publications:

- Aminuzzaman, S. M., 2011, Essentials of Social Research, OSDER publications, Dhaka
- Alam, M. and Islam, M.S., 2007. E-Governance: Infrastructure and Implementation Challenges in Bangladesh. In Proceedings of 10th International Conference on Computer and Information Technology.
- Alam, M., 2007, December. E-governance: scope and implementation challenges in Bangladesh. In Proceedings of the 1st international conference on Theory and practice of electronic governance (pp. 246-249). ACM.
- Ashaye, O.O.R., 2014. Evaluating the implementation of E-Government in developing countries: The case of Nigeria (Doctoral dissertation, Brunel University Brunel Business School PhD Theses).
- Azad Dr. A. K., Dr. M. M. H. Joarder and Md. Iqbal, 1996, Summary of Reports on Uruguay Round Agreements and Related Issues, Ministry of Commerce, Government of the People's Republic of Bangladesh.
- Baum, C. and Di Maio, A., 2000. Gartner's four phases of e-government model. Gartner Group
- Baum, C. and Maio, A.D., 2000. Gartner's Four Phases of E-Government Model, Gartner. Inc., Research Note, Tutorial TU-12-6113.
- Blakeley, C.J. and Matsuura, J.H., 2001, September. E-government: An engine to power e-commerce development. In Proceedings of the 2nd European conference on e-government, Dublin, Ireland (pp. 39-48).
- Bui, T.X., Sankaran, S. and Sebastian, I.M., 2003. A framework for measuring national e-readiness. International Journal of Electronic Business, 1(1), pp.3-22.

- Chaffey, D., Ellis-Chadwick, F., Mayer, R. and Johnston, K., 2009. Internet marketing: strategy, implementation and practice. Pearson Education.
- Dave, C., 2008. E-business and E-commerce management. Pearson Education India.
- Fang, Z., 2002. E-government in digital era: concept, practice, and development. International journal of the Computer, the Internet and management, 10(2), pp.1-22.
- Hossain, M., 2015. E-commerce in Consumer to Consumer. East West University.
- Hossain, N., 2000. E-commerce in Bangladesh: Status, potential and constraints. Institutional Reform and the Informal Sector, University of Maryland, College Park.
- Hudson, H.E., 2013. From rural village to global village: Telecommunications for development in the information age. Routledge.
- IRIS Center, Undated. Electronic Commerce in Bangladesh: Opportunities and Challenges, A report prepared for the Honorable Prime Minister of Bangladesh, IRISCenter, University of Maryland at College Park.
- McConnell International, WITSA, 2000. Risk E-Business: Seizing the Opportunity of Global E-Readiness.
- Joshi, V.C., 2004. E-finance: Log in to the Future!. SAGE Publications India.
- Lixia, Y. and Xun, L., 2009, May. Analysis on the Successful Strategies of Taobao's E-Commerce. In Proceedings of the 2009 International Symposium on Web Information Systems and Applications (WISA'09) Nanchang: Academy Publisher (pp. 202-205).
- Mann, C.L., Eckert, S.E. and Knight, S.C., 2000. Global electronic commerce: A policy primer. Peterson Institute.
- Molla, A. and Licker, P.S., 2005. Perceived e-readiness factors in e-commerce adoption: An empirical investigation in a developing country. International Journal of Electronic Commerce, 10(1), pp.83-110.

- Musso, J.A. and Weare, C., 2005. Information technology and political participation: A comparative institutional approach. *Handbook of Public Information Systems*, pp.581-598.
- Mutua, J., Oteyo, I.N. and Njeru, A.W., 2013. The extent of e-commerce adoption among small and medium enterprises in Nairobi, Kenya. *International Journal of Business and Social Science*, 4(9).
- Ndou, V., 2004. E-government for developing countries: opportunities and challenges. *The electronic journal of information systems in developing countries*, 18.
- Qin, Z., 2010. *Introduction to E-commerce*. Springer Science & Business Media.
- Rahman, M.M., 2009. E-banking in Bangladesh: Some policy implications. *Policy notes, Bangladesh Bank Quarterly*.
- Vatanasakdakul, S., Tibben, W. and Cooper, J., 2004. What prevent B2B eCommerce adoption in developing countries?: a socio-cultural perspective.
- Vitale, R.P., 2011. *Business to business marketing*. Pearson Education India.

Websites:

- Budhiraja, R. and Sachdeva, S., 2002. E-readiness assessment (India). On-line: <http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN014673.pdf>. (Accessed on 2016, Oct 06)
- Cisco (2014), *Cisco Visual Networking Index: Forecast and Methodology, 2013–2018*, Cisco Systems, Inc., www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.html (Accessed on 2016, Oct 04).
- Daily Star (September 24, 2014). <http://www.thedailystar.net/e-commerce-the-in-thing-43111> (Accessed on 2016, Dec 10).

e-Market@bd, Implementation of an e-marketplace prototype for developing countries like Bangladesh. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1099516 [Accessed on 2016, March 25]

Gil Press (2014), "A very short history of the Internet Of Things", Forbes, 18 June 2014, www.forbes.com/sites/gilpress/2014/06/18/a-very-short-history-of-the-internet-of-things/ (Accessed on 2016, Dec 11).

<http://bankofinfo.com/list-of-e-commerce-website-in-bangladesh/> (Accessed on 2016, Dec 05).

<http://ec.europa.eu/eurostat/documents/42577/3222224/Digital+economy+outlook+2015/> (Accessed on 2016, Dec 11).

<http://ecombd.net/tag/e-commerce/> (Accessed on 2016, Oct 10)

http://eprints.lse.ac.uk/3710/1/The_reality_of_ecommerce_with_developing_countries.pdf (Accessed on 2016, Sep 05).

<http://graphics.eiu.com/pdf/E-readiness%20rankings.pdf> (Accessed on 2016, 01 November)

<http://journals.abc.us.org/index.php/abr/article/view/Islam-et-al> (Accessed on 2016, Nov 13).

http://link.springer.com/chapter/10.1007/978-3-642-22961-9_9 (Accessed on 2016 Nov, 18)

<http://unpan1.un.org/intradoc/groups/public/documents/CAFRAD/UNPAN006617.pdf> (Accessed on 2016, Sep 30).

<http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan041046.pdf> (Accessed on 2016, Dec 04)

http://www.btrc.gov.bd/OLD/sites/default/files/journal_file/information_and_communication_technology_status_issues_and_future_development_plans_in_bangladesh.pdf
(Accessed on 2016, November 25)

<http://www.cddc.vt.edu/digitalgov/gov-publications.html> (Accessed on 2016, May 07)

<http://www.oecd.org/development/electroniccommerce.htm> (Accessed 2016, Dec 15).

http://www.open.ac.uk/StudentWeb/m879/Public_part/Samples/C1/Issues%20and%20problems%204.htm (Accessed on 2016, June 02)

http://www.plancomm.gov.bd/wp-content/uploads/2015/02/18_Achieving-Digital-Bangladesh-by-2021-and-Beyond.pdf (Accessed on 2016 Nov, 29)

<http://www.policy.hu/kaushik/files/readiness4.pdf> (Accessed on 2016, May 07)

<http://www.sdnbd.org/sdi/issues/IT-computer/ereadiness-BCG.pdf> (Accessed on 2016, May 07).

<http://www.slideshare.net> (Accessed on 2016, Oct 21)

<https://graphics.eiu.com/pdf/E-readiness%20rankings.pdf> (Accessed on 2016 Nov 05)

<https://novicemarketers.wordpress.com/2013/01/06/e-commerce-in-bangladesh-status-potential-and-constraints/#respond> (Accessed on 2016, Mar 25).

<https://www.adb.org/> (Accessed on 2016, Oct 23)

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=10&cad=rja&uact=8&ved=0ahUKEwirlJSIwfHLAhXMkl4KHbzfDz8QFghaMAk&url=https%3A%2F%2Fwww.scribd.com%2Fdoc%2F27272128%2FAssignment-on-E-commerce-in-Bangladesh&usg=AFQjCNEKZY0CpEijHWNgcUEBy_DOyYaS9Q&bvm=bv.118443451,d.c2E (Accessed on 2016, Mar 29).

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=13&cad=rja&uact=8&ved=0ahUKEwim->

o7GwfHLAhXPCI4KHSjiB_M4ChAWCCcwAg&url=http%3A%2F%2Fbangladesh.um.dk%2Fen%2F~%2Fmedia%2FBangladesh%2FDocuments%2FTeaser%2520on%2520e-commerce%2520final.pdf&usg=AFQjCNHc1uNOJcpPK45qLOLeZoEcaLgXrA&bvm=bv.118443451,d.c2E (Accessed on 2016, Mar 29).

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=19&cad=rja&uact=8&ved=0ahUKEwim-o7GwfHLAhXPCI4KHSjiB_M4ChAWCFIwCA&url=http%3A%2F%2Fwww.ijmra.us%2Fproject%2520doc%2FIJMIE_AUGUST2012%2FIJMRA-MIE1763.pdf&usg=AFQjCNHFxnVLIxJh_Cmhmlh0QrcCk3ebIw&bvm=bv.118443451,d.c2E (Accessed on 2016, Mar 20).

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwirJSlwfHLAhXMkl4KHbzFDz8QFggjMAE&url=http%3A%2F%2Fresearch.ijcaonline.org%2Fvolume70%2Fnumber9%2Fpxc3887867.pdf&usg=AFQjCNHgUSxEZDPiDJB_iOZTUghY7sR3-w&bvm=bv.118443451,d.c2E (Accessed on 2016, Mar 30).

<https://www.oecd.org/sti/consumer/ECommerce-Recommendation-2016.pdf> (Accessed on 2016, Mar 23).

<https://www.researchgate.net/> [Accessed on 2016, March 26]

Rubens, P. (2014), "Internet of Things a potential security disaster", eSecurity Planet, 4 September 2014, www.esecurityplanet.com/network-security/internet-of-things-a-potential-security-disaster.html (Accessed on 2016, Dec 11).

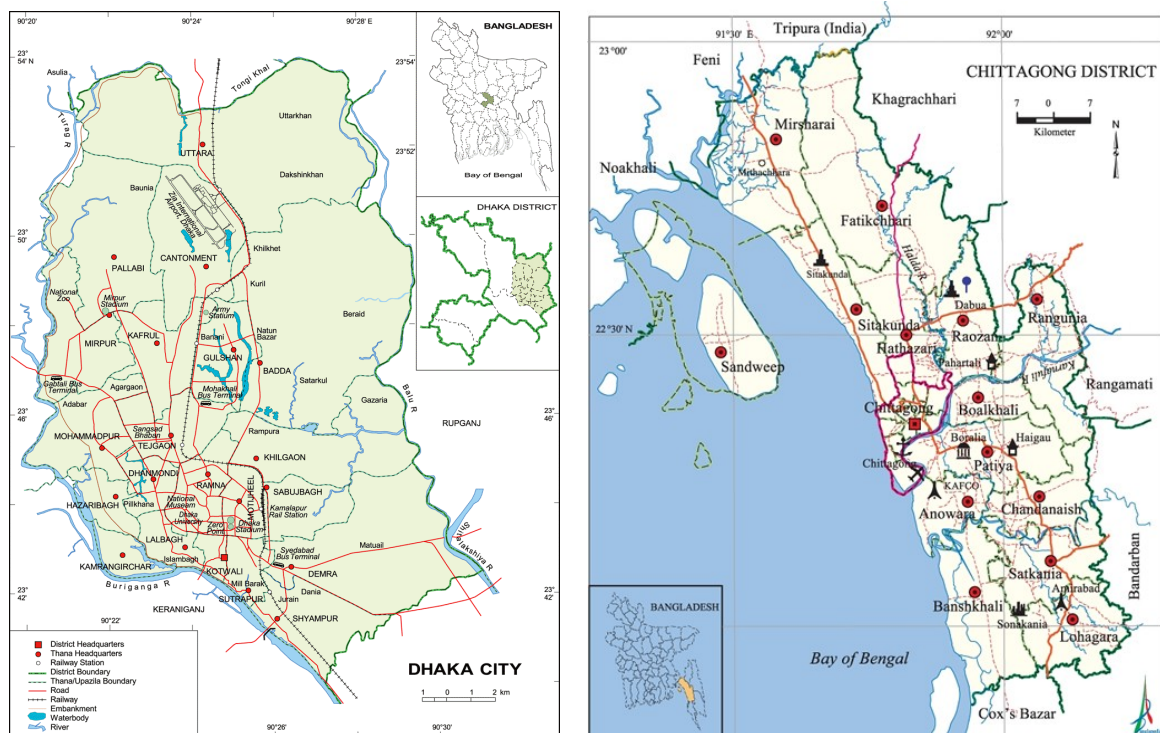
Yared, P. (2013), "2013: The Internet of things, delivered via smartphone", VentureBeat, 2 January 2013, <http://venturebeat.com/2013/01/02/internet-of-things-via-smartphone/> (Accessed on 2016, Oct 15).

Appendix I

Description of the study area

The field research was conducted in Dhaka and Chittagong city areas. Dhaka is the capital of Bangladesh and this is a highly populated area. Most of the head offices and corporate offices are Dhaka based. Moreover, national level organizations are situated in Dhaka. Besides this, the people of Dhaka are enjoying more citizen facilities than any other part of Bangladesh. So it is seen that internet based activities are mainly Dhaka based. For availability of sampling the Dhaka area was chosen. Chittagong city area is considered just immediate after of Dhaka city. This city is also populated and this is also the commercial capital of Bangladesh. Internet connectivity and other facilities are not as like as Dhaka but people are enjoying the good connectivity of internet along with other facilities. Field work was done this area also. It is expected that Dhaka and Chittagong area will represent the best possible picture of development. In order to get the best picture of e-commerce development, these two cities have been chosen.

Map of Dhaka and Chittagong City:



Appendix II

Survey Questionnaire (In Bengali Language)

মাস্টার ইন পাবলিক পলিসি এন্ড গভর্নেন্স প্রোগ্রাম

নর্থসাউথ বিশ্ববিদ্যালয়, ঢাকা।

বাংলাদেশে ই-কমার্স সুবিধা ব্যবহার সংক্রান্ত জরিপ

গবেষকের নামঃ এ.এস.এম. নাজমুল হাছান

(বিঃদ্র: এই প্রশ্নমালার উত্তরসমূহ কেবলমাত্র একাডেমিক কাজে ব্যবহার হবে এবং উত্তরপ্রদানে
আপনার সহযোগীতা এই গবেষনার কাজে অনেক বেশী সহায়ক ভূমিকা পালন করবে)

(প্রশ্নের উত্তরে প্রয়োজনবোধে একাধিক অপশনে টিক চিহ্ন দেয়া যাবে)

1. উত্তর প্রদানকারীর নামঃ
2. মোবাইল নম্বরঃ
3. বয়সঃ
4. লিঙ্গঃ
5. ধর্মঃ
6. শিক্ষাঃ
 - a. নিরক্ষর
 - b. প্রাথমিক শিক্ষা
 - c. মাধ্যমিক শিক্ষা
 - d. উচ্চ মাধ্যমিক শিক্ষা
 - e. স্নাতক অথবা তদুর্ধঃ
7. পেশাঃ

8. বসবাসের স্থানঃ
- a. গ্রাম
 - b. শহর
9. ইন্টারনেট ব্যবহার করেন কিনা? হ্যাঁ অথবা না
10. দিনে আনুমানিক কতক্ষণ ইন্টারনেট ব্যবহার করেন?
11. ইন্টারনেট ব্যবহারে আপনার আনুমানিক মাসিক ব্যয় কত? টাকা
12. ইন্টারনেট আপনার কাছে সহজলভ্য কিনা?
- a. হ্যাঁ
 - b. না
13. ইন্টারনেট ব্যবহার করে থাকলে ব্যবহৃত ডিভাইসঃ
- a. কম্পিউটার/ল্যাপটপ
 - b. ট্যাবলেট
 - c. মোবাইল ফোন
 - d. প্রযোজ্য নয়
14. পণ্য ক্রয়-বিক্রয়ের জন্য ইন্টারনেট ব্যবহার করেন কিনা?
- a. হ্যাঁ
 - b. না
15. বাজার যাচাই, পণ্য সম্পর্কে জানতে আপনি কি ইন্টারনেট ব্যবহার করেন?
- a. হ্যাঁ
 - b. না
16. কোন কোন ই-কমার্স ওয়েবসাইট (ক্রয় বা বিক্রয়ের জন্য) ব্যবহার করেন?
- a. কয়েকটির নাম লিখুন
-
-
- b. প্রযোজ্য নয়

17. আপনি ভবিষ্যতে ইন্টারনেটে কেনাকাটা বা ই-কমার্স সুবিধা ব্যবহারে আগ্রহী কিনা?
- হ্যাঁ
 - না
 - মন্তব্য নেই
18. অনলাইনে ক্রয়-বিক্রয় করে থাকলে নীচের কোনটি আপনার ক্ষেত্রে প্রযোজ্য? আপনার অনলাইন কেনাকাটা-
- সাপ্তাহিক
 - মাসিক
 - বাৎসরিক
 - কদাচিত
 - প্রযোজ্য নয়
19. অনলাইনে সাধারণত কি ক্রয় বা বিক্রয় করে থাকেন?
- পণ্য বা সেবার নাম
 - প্রযোজ্য নয়
20. আপনি ছাড়া আপনার পরিবারের আর কতজন সদস্য পণ্য কেনাকাটায় ইন্টারনেট ব্যবহার (ই-কমার্স) করেন?
- উত্তর
21. আপনার জানামতে বাংলাদেশে আনুমানিক কতগুলো প্রতিষ্ঠানে অনলাইনে পণ্য কেনাকাটার সুযোগ আছে?
- টি
 - অনুমান করতে পারছি না
22. অনলাইনে বা ইন্টারনেটে বিভিন্ন পণ্য সম্পর্কে জানার জন্য খোঁজ করেন কিনা?
- হ্যাঁ
 - না
23. ই-কমার্স ওয়েবসাইট ব্যবহার না করে থাকলে তার কারন-

- a. ই-কমার্স সম্পর্কে জানা নেই
- b. আস্থা নেই
- c. ওয়েবসাইটে আপনার চাহিদামাফিক পণ্য নেই
- d. ইন্টারনেট ব্যবস্থা ভালো নয়
- e. অনলাইনে পেমেন্ট জটিলতা
- f. প্রযোজ্য নয়

24. ই-কমার্স ওয়েবসাইট ব্যবহার করে থাকলে তার কারন-

- a. চাহিদামাফিক পণ্য বাছাই করা সহজ
- b. বিল পেমেন্ট সুবিধাজনক
- c. ঘরে বসে পণ্য পাওয়া যায়
- d. সময় বাঁচে
- e. প্রযোজ্য নয়

25. নিচের কোন সুবিধা প্রচলিত থাকলে আপনি অধিক ই-কমার্স ব্যবহার করবেন?

- a. বাজারে প্রচলিত খুচরা পণ্যমূল্যের চাইতে কম মূল্য
- b. সরকারি-বেসরকারী উভয়ক্ষেত্রে অনলাইনের ব্যবহার বৃদ্ধিকরন
- c. পণ্যমূল্য পরিশোধের সহজ পদ্ধতি চালুকরন
- d. অনলাইনে পণ্য কেনাকাটায় সরকারি ট্যাক্স বা ভ্যাট হ্রাসকরন

26. আপনার মতে ইন্টারনেটে কেনাকাটায় অসুবিধা (যদি থাকে) কি কি?

- a. b. c. প্রযোজ্য নয়

27. দয়া করে নিচের প্রশ্নগুলির উত্তর দিন (প্রযোজ্য ঘরে টিক চিহ্ন দিন)

প্রশ্ন	1 মোট একমত নই	2 একমত নই	3 মন্তব্য নেই	4 ঠিক আছে	5 একদম ঠিক আছে
1. আপনার মতে বাংলাদেশে গ্রহক পর্যায়ে					

ইন্টারনেটের বর্তমান মূল্য যৌক্তিক					
2. ইন্টারনেট স্পীড বা ব্যান্ডউইথ এর মান ভালো					
3. বাংলাদেশে পন্য কেনাকাটায় ইন্টারনেট নিরাপদ					
4. বাংলাদেশে ইন্টারনেট ব্যাংকিং সুরক্ষিত					
5. বাংলাদেশের সাইবার এন্ট সম্পর্কে আমি জানি					
6. ইন্টারনেটে সরকারি সার্ভিস প্রাপ্তি বেশ সহজ					
7. এসএমএস এ কেনাকাটার সুযোগ থাকলে তা আরও বেশী গ্রহণযোগ্য হবে					
8. কেনাকাটার বিল পরিশোধে ইন্টারনেটের চেয়ে এসএমএস অধিক গ্রহণযোগ্য					
9. ই-কমার্স লেনদেনে সকল নোটিফিকেশন এসএমএস এ আসা উচিত					
10. আইসিটি পলিসি 2009 বেশ কার্যকরি					
11. আইসিটি পলিসি 2015 ই-কমার্সবান্ধব					

28. আপনার মতে বাংলাদেশে ই-কমার্স এর স্বল্প ব্যবহার এর কারন কি?

a. b.

29. আপনারা মতে বাংলাদেশে কোন সেক্টরে ই-কমার্সের (অনলাইনে কেনাকাটা) ব্যাপক সম্ভাবনা রয়েছে?

- নিত্য প্রয়োজনীয় খুচরা কেনাকাটা
- পাইকারী কেনাকাটা
- বিদেশী ওয়েবসাইটে কেনাকাটা
- কর্পোরেট পর্যায়ে কেনাকাটা
- মন্তব্য নেই

Appendix III

Survey Questionnaire (In English)

“Survey on “E-readiness for e-commerce Development in Bangladesh”

The survey is designed as a part of my thesis work of 'Master in Public Policy and Governance' Program in NSU, Dhaka. The data of this survey will be used for academic purpose only without quoting any respondent. There is no doubt that your sincere response will enrich my thesis work.

* Required

Q.1 Your Name *

Q.2 Email (Optional)

Q.3 Your Age *

Q.4 Gender *

1. Male

2. Female

Q.5 Your Highest Academic Achievement *

1. HSC

2. Honors

3. Masters

4. Phd

Q.6 Profession *

1. Govt. Employee

2. University Teacher

3. Bank Official
4. Internet Service Provider Official
5. Undergraduate Student
6. Others

Q.7 Do you use internet? *

1. Yes
2. No

Q.8 How many hours you use internet per day? (Just put number value) *

Q.9 How much money you spend for internet in a month? (in average) *

Q.10 Is internet easily accessible to you? *

1. Yes
2. No
3. Somehow

Q.11 What type of device you use for internet? (If you are a user of internet) *

1. Computer/Laptop
2. Tablet/Mobile phone
3. Above All
4. Not Applicable

Q.12 Do you use internet to see the product or to get product price idea from market? *

1. Yes
2. No

Q.13 Do you use internet to purchase or sell product? *

1. Yes
2. No

Q.14 What e-commerce websites you usually use to purchase or sell product over internet?

Pls mention some of those (If not, Please leave it blank)

Q.15 Are you interested to purchase any product online (e-commerce) in future ? *

1. Yes
2. No
3. May be
4. No Comments

Q.16 If you make purchase or sell over internet (e-commerce), Which one is applicable for you? *

1. Weekly
2. Monthly
3. Quarterly
4. Half Yearly
5. Yearly
6. Rarely
7. Not Applicable

Q.17 Please write the products name those you usually purchase or sell online/e-commerce? (If not, please leave it blank)

Q.18 Except you, how many of your family members use internet for e-commerce? *

Q.19 From your Knowledge, how many organizations are doing e-commerce business in Bangladesh? (If you can't remember, leave it blank)

Q.20 If you do not use internet for e-commerce, what are the reason(s) behind? *

1. Don't know about online buying or selling
2. No trust or There are online security issues
3. No product on web according to your requirement
4. Online purchase is complex

5. Payment issues over online
6. Not Applicable
7. Other:

Q.21 If you use internet for e-commerce, what are the reason(s) behind? *

1. It is easy to select product according to my requirement
2. Bill payment is easier
3. Home delivery
4. Time Saving
5. Many offers are available over internet
6. Not Applicable
7. Other:

Q.22 Which one you prefer for e-commerce? *

1. Company's website
2. Mobile Apps
3. Facebook
4. SMS
5. Other:

Questions	1	2	3	4	5
Q.23 In Bangladesh the internet bandwidth price is logical *					
Q.24 In Bangladesh the internet quality or bandwidth is satisfactory *					
Q.25 Internet is secured to buy or sell product over internet in/from Bangladesh *					
Q.26 Internet banking is safe in Bangladesh *					
Q.27 Most of the people know about cyber act in Bangladesh *					
Q.28 It is easy to get government service over internet (e-governance) *					
Q.29 It will be more acceptable if there is buying or selling					

provision thru SMS. *					
Q.30 Payment by SMS is more acceptable than payment by internet *					
Q.31 All notification of online transaction (e-commerce transaction) should be received in SMS *					
Q.32 ICT policy-2015 is very effective and e-commerce friendly policy. *					
Q.33 Bangladesh e-commerce is well developed. *					

Q.34 Which sector is prospectus for Bangladesh e-commerce? *

1. Daily Needs purchasing
2. Whole Sale
3. e-commerce thru foreign websites
4. Corporate level purchasing
5. No comments

Q.35 What type of facilities will encourage you to use e-commerce more? (Pls write in details)

Appendix IV

List of Tables (From Survey Data)

1.

Survey Respondents

Type	Number	Percentage
Male	88	73%
Female	33	27%
Total	113	100%

2.

Respondents' Type

Type	Number	Percentage
Govt. Official	22	20%
University Teacher	23	20%
Bank Official	16	14%
ISP Official	15	13%
Student	12	11%
Others	25	22%
Total	113	100%

3.

Respondents' Academic Background

Education	Number	Percentage
HSC	11	10%
Hons	30	27%
Masters	62	55%
PhD	10	9%
Total	113	100%

4.

Internet Accessibility		
Accessible	101	89%
Not Accessible	0	0%
Somehow Accessible	12	11%
Total	113	100%

5.

Internet Cost in Bangladesh is satisfactory		
Opinion	Number of Response	Percentage
Strongly Disagree (1)	23	20%
Disagree (2)	27	24%
Neutral (3)	35	31%
Agree (4)	22	19%
Strongly Agree (5)	6	5%

6.

Internet Speed is good in BD		
Opinion	Number	Percentage
Strongly Disagree (1)	23	20%
Disagree (2)	28	25%
Neutral (3)	35	31%
Agree (4)	20	18%
Strongly Agree (5)	7	6%

7.

Device used for internet browsing		
Device	Number	Percentage
Computer/Laptop	19	17%
Mobile/Tab	24	21%
Both	70	62%

8.

Internet using to know about products		
Answer	Number	Percentage
Yes	93	82%
No	20	18%

9.

Internet using for e-commerce		
Answer	Number	Percentage
e-com user	53	47%
not e-com user	60	53%

10.

Future e-commerce user		
Answer	Number	Percentage
Yes	78	69%
No	7	6%
May be	28	25%

11.

Mostly Visited e-Commerce Site		
Page	Number	Percentage
Train Ticket	19	17%
Ali express	18	16%
Bikroy	18	16%
FB	12	11%
Sohoz	8	7%
Chaldal	6	5%
Paypoint	6	5%
Daraz	5	4%
ebay	4	4%
Rokomari	3	3%
Kaymu	3	3%
Ajker Deal	2	2%
Foodpanda	1	1%

12.

ICT policy 2015 is effective		
Opinion	Number	Percentage
Strongly Disagree (1)	10	9%
Disagree (2)	32	28%
Neutral (3)	52	46%
Agree (4)	14	12%
Strongly Agree (5)	5	4%

13.

Govt. service over internet		
Opinion	Number	Percentage
Strongly Disagree (1)	24	21%
Disagree (2)	39	35%
Neutral (3)	29	26%
Agree (4)	18	16%
Strongly Agree (5)	3	3%

14.

Cyber Act		
Opinion	Number	Percentage
Strongly Disagree (1)	46	41%
Disagree (2)	36	32%
Neutral (3)	13	12%
Agree (4)	14	12%
Strongly Agree (5)	4	4%

15.

Internet security for e-com		
Opinion	Number	Percentage
Strongly Disagree (1)	16	14%
Disagree (2)	35	31%
Neutral (3)	36	32%
Agree (4)	19	17%
Strongly Agree (5)	7	6%

16.

SMS Notification		
Opinion	Number	Percentage
Strongly Disagree (1)	10	9%
Disagree (2)	12	11%
Neutral (3)	15	13%
Agree (4)	26	23%
Strongly Agree (5)	50	44%

17.

Reason of not doing e-commerce		
Reason	Number	Percentage
Don't know	5	7%
No trust	49	67%
No product available	5	7%
Complex online	9	12%
Payment Issue	17	23%
Not Applicable	39	35%

18.

Preferences of e-com channels		
Media	Number	Percentage
Company Web	69	61%
Mobile Apps	33	29%
Facebook	32	28%
SMS	14	12%

19.

Bangladesh e-com is developed		
Opinion	Number	Percentage
Strongly Disagree (1)	18	16%
Disagree (2)	46	41%
Neutral (3)	28	25%
Agree (4)	19	17%
Strongly Agree (5)	2	2%

Other Tables: (From e-CAB Information, BTRC Website)

20.

e-com Trend			
Type	Year 2014	Year 2015	Year 2016
Company Web Sites	500	800	1000
FB Pages	3000	5000	8000
E-Com Transactions	7000	10000	20000

20.

Mobile phone subscribers	
Year	Subscribers (Million)
2009	52.4
2010	68.6
2011	85.4
2012	97.4
2013	112.0
2014	120.4
2015	133.7

21.

Internet Users	
Year	Users (Lakh)
2009	7.0
2010	15.0
2011	22.2
2012	29.4
2013	35.8
2014	41.2
2015	54.1

22.

Internet Price	
Year	1 mbps in taka
2009	27000.0
2010	17000.0
2011	10000.0
2012	8000.0
2013	5000.0
2014	1000.0

Appendix V

E-Commerce Web Portals

In Bangladesh currently we have more than 10,000 e-commerce web portals. Big numbers of companies are also doing their e-commerce business thru facebook pages that is called as f-commerce. Many business units are doing business both by their company websites and facebook pages simultaneously. People purchases mainly the daily needs but less expensive materials thru e-commerce web portals. There are some gift shops, grocery shops and Iso some electronic business shop. Some of the popular e-commerce websites in Bangladesh are given below:

- 24haat.com : For online product sell
- aarong.com: For online product sell
- akhoni.com: For online products
- ajkerdeal.com: Mainly for various gift items
- bangladeshbrands.com: For some Bangladeshi products
- bangladeshigift.com: For Bangladeshi products
- bdgift.com : Online gift shop
- bdhaat.com : For online product sell
- bdshops.com : For online product sell
- bikroy.com : For buy and sell products
- boi-mela.com: For books
- carmudi.com.bd : For online car sell
- chaldal.com: Mainly for glossary items
- clickbd.com : Online auction
- daraz.com.bd : Online purchase of various products
- easy.com.bd;: Mobile airtime and internet recharge
- ekhanei.com : For buy and sell products
- foodpanda.com.bd : Order food items online
- gadgetgang7.com : For smart gadgets and Xiaomi products
- giftbd.com : Online gift store
- hutbazaar.com.au: Online purchasing

- iferi.com : For online product sell
- kaymu.com.bd : For online product sell
- lamudi.com.bd : For online product sell
- meenabazar.com.bd : For online product sell
- olx.com.bd : For buy and sell products
- pakhibazar.com: For many types of birds and feeds
- priyoshop.com : Online gift shop
- rang-bd.com: For online product sell
- rokomari.com: Mainly for books
- sohojshopping.com: For multiple types of products
- techshopbd.com: For electronics bits and pieces for DIY projects
- zettabyte-gadgets.com: Mainly for electronic goods

Besides these websites there are some foreign web sites. Through the foreign websites people are also purchasing goods over credit card transaction in limited and restricted way. Some of those foreign websites are:

- aliexpress.com: For electronic and some other goods
- ebay.com: Mainly for electronic goods
- amazon.com: For multiple types of products
- alibaba.com: For mixed types of products
- usgobuy.com: For shipment from USA to worldwide
- ipsparcel.com: For international parcel services
- walmart.com: USA based online shopping
- myinternationalshopping.com: For global shopping
- overstock.com: For multiple types goods and services
- toysrus.com: For toy shopping
- cafepress.com: Online retailer for stock products
- play-asia.com: Online store for video games, movies etc.
- shopbop.com: Shopping specially for women
- dx.com: Gadgets shopping online
- jcpenny.com: Global renowned shopping online

- bhphotovideo.com: For camera, photo and accessories
- clove.co.uk: UK based online shopping for smart phones and tablets
- jadopado.com: Dubai based online shopping
- shoes.com: For purchasing many types of shoes
- dhgate.com: Online shopping from China markets
- gearbest.com: For online shopping globally
- myus.com: USA based global delivery of goods
- uber.com: For hiring taxi in the city.

There are huge global e-commerce websites and there million number of e-commerce transactions are happening per day. The people of Bangladesh are not using all global e-commerce web portals because of goods delivery issues, Bangladesh Central Bank policies, cross country customs issues etc.

Appendix VI

Highlights of Bangladesh National ICT Policy

Information & Communication Technology (ICT) is one of the most important tools to achieve economic prosperity of a country through improving the management and efficiency in every sphere of life. The experience of the developed and emerging economies supports the above notion. To effectively harness the power of ICTs, Bangladesh formulated its first National ICT Policy in 2002. The National ICT Policy 2002 could not reach the professed levels of success due to lack of appropriate plans to achieve the goals set in the policy as well as poor implementation of the underlying actions. Consequently, the Government took an initiative in May 2008 to review the National ICT Policy 2002 and formed a 17-member Review Committee. The committee and its working group met all together 15 times over a period of four months to complete the task. During this period, about 70 representatives from different sectors representing academia and public and private sectors invested over 1000 man-hours to review the existing National ICT Policy and related documents to prepare recommendations befitting the current and foreseeable future needs of the nation.

In last year Bangladesh Government cabinet approved the draft of the 'National Information and Communication Technology (ICT) Policy-2015'. This policy has been updated in line with the previous National ICT Policy-2009 and has been revised in consultation with the stakeholders. It was aimed to develop and promote ICT sector to ensure its effective use to achieve development goals. The policy covers ten special objectives, 56 strategic themes and 306 action programs which will be implemented by different organizations under short, medium and long term timeframe by 2016, 2018 and 2021. It can be expected that this policy would be a guideline for ICT sector to ensure comprehensive and effective use of ICT, transparency, accountability, human resources development through materializing national development goals by 2021. In this policy there are some strategic themes as well as some action plan with short term, midterm and long term vision. Some action plans related to e-government and e-commerce are given below:

1. Action Plan under Social Equity
 - a. Establish Community e-Centre
 - b. Modify ISP license
 - c. Enable all citizens to apply for and receive public grants electronically
 - d. Special ICT literary and training programs for ethnic minorities
 - e. Women's e-commerce center to expand market access to promote women-led micro enterprises.
2. Action plan under Integrity
 - a. Introduce standard Bangla keyboard and Unicode system
 - b. Develop national network
 - c. ICT & e-Governance curriculum development
 - d. Allow online VAT registration
 - e. Allow online tax filing and tax payment system
 - f. Establish electronic payment gateway for inter-bank electronic transactions for citizens and businesses
3. Action plan under productivity
 - a. Conduct a study to understand the current status of ICT and services availability for business
 - b. Conduct media campaign to build mass awareness on e-commerce activities
 - c. Implement ICT based model for Small, Medium and Micro enterprise at Dhaka and other divisional head quarters
 - d. Arrange internet connectivity up to all villages in the country.
 - e. Enable e-commerce platforms for Small, Medium and Micro industries in BD.
 - f. Establish e-governance in all executive layer of govt.
4. Action plan under Universal Access
 - a. Establish New Submarine cable connectivity for redundancy and capacity enhancement
 - b. Introduce 3G services for better and faster data, multimedia and voice communication
 - c. Create Broadband wireless Access Network through WiMax and other technologies
5. Action plan under Supports to ICT

- a. Implement payment gateway for online transactions
- b. Introduce cyber police to ensure cyber security
- c. Introduce and enforce electronic fund transfer ACT to enable citizen to pay through electronic means

The action plans are the tangible dimension of the ICT policy which will ultimately determine the degree of success or failure of the policy itself. At 306 items, the list is comprehensive, but not exhaustive. The action items have a running serial number across all objectives and tables. Action items have indicative implementation timeframes, e.g., short-term, mid-term and long-term. Short-term is meant to be 18 months or less, midterm is meant to be longer than 18 months but not more than 5 years while long-term is meant to be longer than 5 years but not more than 10 years. In the ICT sector, looking ahead even 2 years is a challenge as the industry is continuously evolving at a rapid pace. The short-term action items are the needs of the hour while the mid-term and long-term action items need to be aligned with the ground realities and developments in ICTs during annual reviews of the action items. Separate allocations have to be made in the national budget for implementing the action items. A budget line for e-governance should be created in every ministry, department, and autonomous bodies for routine ICT activities. An ICT Development Fund should be created through block grants in the annual budget to be accessed by public sector entities by a process of competition.

It is expected that the successful implementation of the vision and objectives of the National ICT Policy 2009 will facilitate materialize Digital Bangladesh which the government pledged to build within 2021.