

Challenges of implementing Electronic Government Procurement

A Case Study on Bangladesh Water Development Board

Dissertation submitted in partial fulfilment of the
requirements for the Degree of
Masters in Procurement and Supply Management

Submitted by

Syed Rafiqul Alam

Batch-1, Fall-2012, ID: 12282003

Masters in Procurement and Supply Management

December 2012



Institute of Government Studies

**BRAC University
Dhaka, Bangladesh**

Challenges of implementing Electronic Government Procurement:

A Case Study on Bangladesh Water Development Board

Researcher

Syed Rafiqul Alam

Student ID# 12282003

Batch-1, Fall-2012

Student, Masters in Procurement and Supply Management (MPSM)

Institute of Government Studies

BRAC University

Dhaka, Bangladesh

Supervisor

Shah Mohammad Sanaul Hoque, PhD

Deputy Secretary (ICT)

Cabinet Division

Government of Bangladesh

sanaulhq@yahoo.com

Institute of Government Studies

BRAC University
Dhaka, Bangladesh

December, 2012

*Dedicated
To
My daughters
Neha, Medha*

CERTIFICATE

This is my pleasure to certify that the dissertation entitled “**Challenges of implementing Electronic Government Procurement: A Case Study on Bangladesh Water Development Board**” is the original work of Syed Rafiqul Alam that is completed under my direct guidance and supervision. So far I know, the dissertation is an individual achievement of the candidate’s own efforts, and it is not a conjoint work.

I also certify that I have gone through the draft and final version of the dissertation and found it satisfactory for submission to the Institute of Government Studies, BRAC University in partial fulfilment of the requirements for the degree of Masters in Procurement and Supply Management.

Shah Mohammad Sanaul Hoque, PhD
Deputy Secretary (ICT)
Cabinet Division
Government of Bangladesh
sanaulhq@yahoo.com

DECLARATION

I hereby declare that the dissertation entitled “**Challenges of implementing Electronic Government Procurement: A Case Study on Bangladesh Water Development Board**” submitted to the Institute of Government Studies, BRAC University for the degree of **Masters in Procurement and Supply Management** is exclusively my own and original work. No part of it in any form, has been submitted to any other University or Institute for any degree, diploma or for other similar purposes.

Dhaka: December 2012.

(Syed Rafiqul Alam)
Student ID# 12282003
Institute of Government Studies
BRAC University
Dhaka, Bangladesh

ACKNOWLEDGEMENTS

I express my gratitude to almighty Allah, who provided me the opportunity to study in this sector and helped me to prepare this dissertation paper.

My sincere gratitude goes to my supervisor Dr. Shah Mohammad Sanaul Hoque, Deputy Secretary (ICT), Cabinet Division, Government of Bangladesh, without his cooperation and guidance this research could not succeed. He helped me in many ways, like to select research question.

I like to express my gratitude to Director General of CPTU, who gave me opportunity to study on procurement and supply chain management.

Thanks to Director General of Bangladesh Water Development Board, who nominated me for the course and gave full support to continue the course.

I have also been graced by Dr Rewan Khair, Director, IGS. He inspired me to learn and gave me the opportunity to study at IGS and for providing me all relevant supports. Thanks to Dr Silvia, who taught me the research methodology. Special thanks to Dr. Glynis for her effort to select research topic.

Thanks to all procuring entity and officials of Bangladesh Water Development Board, who responded to my questionnaire.

I am grateful to my family and friends who assisted me in many ways.

Finally, I offer my thanks and appreciation to them who have not been mentioned here due to lack of space, but have contributed to the work in different ways and occasions.

Dhaka: December 2012.

(Syed Rafiqul Alam)
Student ID# 12282003
Institute of Government Studies
BRAC University
Dhaka, Bangladesh

Abstract

Electronic Government Procurement (e-GP) solutions make purchasing activities more effective in terms of both time and cost. A large number of procurement articles have appeared in the literature in last 12 years. e-GP is changing the way businesses purchase goods, works and services. Since most products and services are procured using the Internet, the application of e-GP is inevitable in both manufacturing and services. There are limited empirical studies in the literature on the adoption of e-procurement in a country, that is, at the macro-level. Nevertheless, such a study will help companies in other countries to develop policies, strategies, and procedures to implement e-GP. Understanding the importance of such a study, I have conducted a questionnaire-based survey about the adoption of e-GP in Bangladesh Water Development Board (BWDB). The main objective of this study is to identify the perceived critical success factors and perceived barriers regarding the implementation of e-procurement. A conceptual framework has been developed for the adoption of e-GP, and this subsequently has been tested with data collected from BWDB. Also, this study examines the current status of e-GP adoption in BWDB. Finally, a framework is proposed based on the conceptual and empirical analysis for the adoption of e-GP. The results indicate that educating parties in both long- and short-term benefits would encourage the application of e-GP. Some critical success factors include adequate financial support, availability of interoperability and standards with traditional communication systems, top management support and commitment, understanding the priorities of the company, and having suitable security systems.

Keywords: e-GP; Government Procurement; E-procurement; PPR; PPA

ABBREVIATIONS

ADP	Annual Development Programme
BCC	Bangladesh Computer Council
BPR	Business Process Reengineering
BTO	Build-Transfer-Operate
BTRC	Bangladesh Telecommunication Regulatory Commission
BTTB	Bangladesh Telegraph and Telephone Board
DDN	Digital Data Network
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
FAQ	Frequently Asked Question
GOB	Government of Bangladesh
ICT	Information and Communication Technology
IMED	Implementation, Monitoring and Evaluation Division
IP	Internet Protocol
IPPR	Institute for Public Policy Research
ISP	Internet Service Provider
ITES	Information Technology Enabled Services
LAN	Local Area Network
LGED	Local Government Engineering Department
Mbps	Megabyte per Second
MIS	Management Information System
WAN	Wide Area Network

Table of Contents

Chapter 1	Introduction	3
1.1	Prelude	3
1.2	Research Question	4
1.3	Research Objectives	5
1.4	Methodology	5
1.4.1	Primary survey	5
1.4.2	Interviews	6
1.4.3	Case study	6
1.5	Organization of the Thesis	7
Chapter 2	Literature Review	8
2.1	Prelude	8
2.2	Definition of e-Procurement	10
2.3	Components of e-Procurement.....	12
2.3.1	e-Tendering	12
2.3.2	e-Purchasing.....	13
2.3.3	Auditing	18
2.4	Factors for the Success of e-Procurement.....	18
2.4.1	Overall Ineffectiveness of Existing Processes:	19
2.4.2	Difficulties of Internal and External Integration:.....	20
2.4.3	Lack of Common Standards:.....	20
2.4.4	ICT Support:	21
2.5	Benefits of e-Procurement	21
2.5.1	Benefits to the Government	22
2.6	Why Organisations should be aware of e-GP	27
2.6.1	Benefits and Improvements to Buyers	27
2.7	Reduction in Overhead Cost	29
2.8	Benefits and Improvements to Suppliers	29
2.8.1	Cashable Improvements and Benefits.....	30
2.8.2	Process Savings.....	30
2.8.3	Non-Cashable.....	31
2.9	Benefits to Buyer	31
2.9.1	General Features to look for in Procurement Portals/Systems.....	31
2.10	Running the Process: Resources and Issues.....	32
2.10.1	Planning and Design e-Government Procurement System.....	32
2.10.2	The Risks.....	33
2.10.3	Things to Avoid	34
Chapter 3	Procurement	36
3.1	Prelude	36
3.2	Developing Trends in Procurement	37
3.3	Legal and Regulatory Framework in Bangladesh.....	38
3.4	Overview of Previous Procedures and Practices.....	40
3.5	Financial Control and Audit.....	41
3.6	Corruption	42
Chapter 4	Electronic Government Procurement.....	44
4.1	Prelude	44

4.2	e-GP Change Management Programme.....	45
4.3	e-GP and HRM.....	46
4.4	The e-GP System	47
4.5	Stakeholders of the e-GP System.....	48
4.6	e-Tendering	49
4.7	Financial Transactions	50
4.8	Security	50
4.9	e-Signature	51
4.10	Pre-tender Meeting.....	51
4.11	Tender Opening.....	51
4.12	Tender Evaluation	52
Chapter 5	Data Collection and Analysis.....	53
5.1	Prelude	53
5.2	Questions and Responses	53
Chapter 6	Recommendation and Conclusion	63
6.1	Prelude	63
6.2	Case Study.....	65
6.3	Survey and the Organization.....	65
6.3.1	Adequate Internet Connectivity	66
6.3.2	Acceptability of New System.....	66
6.3.3	Knowledge and Awareness of BWDB Officials.....	66
6.4	Challenges to Implement e-GP in BWDB	67
6.4.1	Computer Competency.....	67
6.4.2	Lack of Bidder's Interest.....	67
6.4.3	Software Problem.....	68
6.4.4	Hacker	68
6.4.5	Electricity	68
6.4.6	Powerful Person of Government may create Obstacle	68
6.4.7	Logistic Support.....	68
6.4.8	Confidentiality	69
6.4.9	Central Databank.....	69
6.5	Merits of e-GP.....	69
6.6	Recommendations	70
6.7	Recommendations for Future Research	71
6.8	Conclusion	72
	References.....	74
	Appendix 1: Pilot Questionnaire.....	84
	Appendix 2: Final Questionnaire.....	87

Chapter 1 Introduction

1.1 Prelude

Modern society is very much interconnected, where the Internet has spawned tremendous improvements in efficiency and customer service. Now in developed countries people enjoy 24 hours service through telecommunication and Internet. In Bangladesh, people are increasingly demanding 24 hours online services. There are few limited online services with monetary transaction in Bangladesh with the help of mobile phone, like sale of train ticket, application fee for university admission, telephone bill payment etc. Our government websites are not that much interactive. There are few informative website of government like Flood forecasting, Hajj information, Passport etc. The official website of Bangladesh is www.bangladesh.gov.bd. “The state of the official web portal of the Government of Bangladesh, as mentioned above, indicates nonconformity with global trend and practice that argue for arrangement of information corresponding to types of services, not under the names of organizations.” (Hoque, p-11).

The procurement of goods and services by government agencies for their own purposes is a core element of the operation of governments. It secures the inputs that enable governments to fulfil their tasks, having a major impact on key stakeholders in society. Government procurement is also an important aspect of international trade. Since public resources are scarce, the efficiency of the procurement process is a primary consideration of every procurement regime. Open, transparent and non-discriminatory procurement is generally considered to be the best tool to achieve 'value for money' as it optimizes competition among suppliers.

The term e-GP or Electronic Government Procurement refers to the use of electronic means in conducting a public procurement procedure for the purchase of goods, works or services.

Electronic Government Procurement can be defined as the usage of e-Government platform over the electronic resources (Internet and Web-based applications) to conduct transactions for purchasing the products and services from suppliers to authority's buyers.

Interbank online payment is not allowed in Bangladesh. As a result, interbank online account transfers, online payment via credit card are not possible yet. So, online payment for tender document and tender security money are not possible for contractors; and online payment of work is not possible by procuring entities.

1.2 Research Question

Public procurement of Bangladesh is under a change process for long 12 Years. Central Procurement Technical Unit (CPTU) of Implementation, Monitoring and Evaluation Division under the Ministry of Planning of Government of Bangladesh, implementing Public Procurement Reform Project II (PPRP II). The project has one specific component to introduce e-GP on a pilot basis with the central database in the Central Procurement Technical Unit (CPTU), the nodal procurement policy unit of the Government.

Honourable Prime Minister of Bangladesh inaugurated online procurement, e-GP. CPTU hosted a web portal for e-GP. Official website of e-GP is www.eprocure.gov.bd . All Procuring Entities (PEs) and Suppliers will be registered under the site, in time all procurement related activities will be perform online through this portal. In the first phase four agencies are

selected for e-Tendering only. That is, tender notice and document will be available at portal, eligible suppliers will be allowed to download, fill-up and upload tender and related papers in this portal. Procuring entity will download suppliers tender from portal.

Bangladesh Water Development Board (BWDB) is a government agency expending around 8% of annual development budget of Government of Bangladesh. The objective of this research is to find out level of knowledge, awareness and infrastructure facilities available in BWDB to meet the new challenge of e-GP. Also the stakeholders of BWDB, like suppliers' readiness to use e-GP will be verified.

1.3 Research Objectives

- To study the present status of electronic procurement in Bangladesh Water Development Board.
- *To find out major challenges to implement e-GP in BWDB.*

1.4 Methodology

The main methodology of the research was primary survey. The questionnaire was developed to assess awareness, knowledge and available ICT infrastructure of BWDB procuring entities. BWDB expend most of the development budget through executive engineers at field level. They are the main procuring entities of BWDB.

1.4.1 Primary survey

The primary research methodologies of this study include questionnaire and interviews. Respondents are selected randomly, and they were requested for their response. Though it is better to collect data by face to face interview, but for time and resource constraint it was not possible to visit all over Bangladesh to collect data. But most of data collected by face to face interview. Some data collected by post; but communicated via

telephone and email for clarification of questionnaire. Survey invitation letters were first sent to 30 procuring entities of Bangladesh Water Development Board. 26 of them accepted the invitation, and participated in this survey. Among these 26 participants, 23 of them are Executive Engineer and 3 of them are Superintendent Engineer. All of the officers have at least 15 years experience in public procurement. Data was collected in November 2011, when few offices of BWDB already started using e-GP in their procurement.

A pilot test was first undertaken via 7 of the total sample of 26 selected for this study in order to ensure that every question was stated appropriately that respondents could clearly understand the concepts and questions. The pilot questionnaire is listed in Appendix 1. Improvements were made based on the respondents' comments at the end of this consultation process. Specifically, the participants suggested reducing number of question.

The final version of the questionnaire (see appendix 2) was distributed to 26 participants. For ensuring immediate responses, questionnaires were offered to professionals who are working at field level and who worked earlier as procuring entity but now posted at administrative posts. Altogether 26 questionnaires were distributed and data collected.

1.4.2 Interviews

As for interviews, System Analyst of ICT Cell of BWDB was interviewed. The interview was conducted at office hour.

1.4.3 Case study

For making this research more persuasive, a case study was also presented. A detailed explanation and analysis for the case is prepared by

interviewing Executive Engineer, Dhaka O&M Division-1, BWDB.

After cleaning data, EPI Info software is used for data entry. Data was cross checked for validation purpose. Then different statistical analysis was done by SPSS and EPI Info software.

To assess the ICT infrastructure of BWDB, Key Informant Interview was taken of the ICT personnel of BWDB. Mr Arif Ekramul Azim, System Analyst, BWDB is a resourceful person for this and he helped me to collect related data. He described the security issues of Internet based purchasing, such as the threat of hacker, virus and phishing.

1.5 Organization of the Thesis

The structure of the thesis is organised as follows: the first chapter deals with the problem statement of the research along with the rationale, objectives and methodology; the second chapter is a review on related literature that had been consulted during the study. The third chapter is the discussion on the basic concepts of procurement, procurement acts and rules in Bangladesh, PPR and PPA. The fourth chapter covers the concept of Electronic Government Procurement (e-GP). The fifth chapter contains the core part that is the analysis of the primary data collected from procuring entities of BWDB and data of Key Informant Interview. Finally in sixth chapter the paper gives some recommendations and conclusion.

Chapter 2 Literature Review

2.1 Prelude

As an institution, the public sector has a very distinct character from that of the private sector; its sheer size, its alienation from the threat of bankruptcy, the relation between policy-making and administration, its inherent visibility to the public, and the monopoly it holds over some of its functions clearly mark the public sector's individuality. Public sector is guided by rules. Government of Bangladesh spent most of its public fund through different government agencies. Agencies follow Public Procurement Act 2006 and Public Procurement Rules 2008.

A number of public sector agencies worldwide have identified Electronic Procurement (e-Procurement) as a priority e-Government agenda and have implemented or are in the process of implementing buy side e-Procurement systems.

The earliest literature on e-procurement is that relating to electronic data interchange – a technology that has been in use in organisations since the 1960s, (Millman 1998). One of the earliest articles on this subject was a 1967 paper extolling the benefits of electronic data interchange for buyers and sellers in the hospital environment. (Meyer 1967). Most discussions about electronic inter-organisational systems in the academic literature up until the mid 1990s involved electronic data interchange. It is only from the mid 1990s onward that there is a shift towards the discussion of the use of the internet for electronic commerce. In fact electronic data interchange continues to be the primary medium of electronic commerce.

There is little history of extensive e-procurement use in the public sector except in certain entities in the military and public health sectors. As

would therefore be expected, the academic literature covering public sector e-procurement is very limited.

However, there are some useful examples including, (Allen 1998; Arnold and Essig 2002; Cater 2001; Harink and Van Rooijen 2002; Harland et al. 2001; Liao et al. 2002; Oscar 2001; Spinardi et al. 1997; Teo et al. 1997).

Information about public procurement initiatives is most commonly elicited through relevant conferences. Much of the commentary on public sector e-procurement arises from the popular press announcing forthcoming projects or the awarding of related contracts to supply “solutions”. In addition, various government agencies advise public sector entities on the uptake of e-procurement. There is also evidence of networks supporting the development of electronic commerce in procurement, for example the Australian Procurement and Construction Council (<http://www.apcc.gov.au/>).

Whatever the information source, there is insufficient systematic research of the adoption of e-procurement in the public sector to answer some important questions. For instance, what is the extent of its uptake? Although there are headline initiatives in place, to what extent are these significant in the management of procurement effort within public sector entities? Also very importantly, what drives the adoption of e-procurement in the public sector? The lack of evidence of its extensive use throughout a period when it was widely used in certain industries may indicate that the existing technologies were not appropriate to the public sector and that the adoption of e-procurement only became feasible with the advent of the internet and more cost effective solutions. It could also be that, notwithstanding the more readily available supporting technologies, the procurement profiles of typical public sector entities have not warranted significant investments in e-procurement. Another proposition is that its adoption is being driven by wider policy considerations rather than the

business related benefits. Whatever the case, the significant investment of public resources in e-procurement and its consequences for public procurement outcomes deserves careful investigation.

2.2 Definition of e-Procurement

Any system that uses information and communication technologies (ICT) in order to do business can be classified as e-Business system. In fact, e-Business is a broader definition of e-Commerce because it includes not only the buying and selling of goods and services, but also servicing customers, collaborating with business partners, conducting electronic transactions within an organization.

EU literature defines e-Commerce as follows:

“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, on-line delivery of digital content, electronic fund transfers, electronic share trading, electronic bills of lading, commercial auctions, collaborative design and engineering, on-line 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).” (EU, 1997, p.2)

In this respect, e-Procurement is defined as a subset of e-Business concerning e-Commerce between private sector and public institutions where e-Commerce is intended as the activity of exchanging goods and services with some kind of payment by means of ICT. From this point of view, it is possible to make many definitions for e-Procurement.

In the simplest sense, e-Procurement means carrying out procurement decisions of the government online through the use of the Internet. In other words, e-Procurement is about transforming the processes associated with public procurement and refers to automating corresponding processes of public institutions. (IPPR, 2003). In other words, e-Procurement is more than simply buying online and it is changing the traditional way in which public institutions do business. (Coulthard, 2000) e-Procurement involves the use of ICT in each step of the public procurement process from identification of the need to payment. Implementation of e-Procurement initiates automation of both internal and external processes associated with public procurement process.

It is also possible to characterize e-Procurement as a comprehensive process in which the government establishes agreements with vendors for purchasing goods and services. (Coulthard, 2000) This process is achieved by either tendering or acquiring directly through e-Marketplaces in exchange for the payment that can be made by the purchasing cards. Shortly, e-Procurement is “the electronic management of all the procurement activities. It is the use of web communications to e-Enable purchasing processes and strategy, and is part of the wider e-Commerce revolution.” (BuyIT (a), 2002). As a system, e-Procurement is a Web-based purchasing system that offers the functionality of electronic ordering, electronic payment and enhanced administrative utilities to the public institutions. In general, e-Procurement systems are developed by using the Internet to streamline, manage and analyze the government procurement activities. These systems range from basic ordering tools to complex systems that cover the entire tendering process. (BuyIT (b), 2002) In each case, setting up an e-Procurement system involves implementing a software application that is customized based on the public procurement processes and rules. The resulting system should be accessible by each public institution through a Web browser that enables a secure and open purchasing environment.

2.3 Components of e-Procurement

Procurement transactions fall into two categories, namely Tendering and Purchasing, according to volume, value, complexity, frequency, number of suppliers, etc.

In the context of these two categories, e-Procurement system covers the following components.

- e-Tendering
- e-Purchasing
- Auditing

2.3.1 e-Tendering

e-Tendering component is developed to support competitive tendering process that is regulated by law (in Turkey, Public Procurement Law). This component is suitable for acquisition of complex goods and services associated with the ICT such as embedded systems and obtaining of goods like construction and capital investment. These transactions are among the most challenging procurement activities because their technical content is diverse and difficult to define and they are subject to rapid technological change over the project life cycle. In addition, they involve combination of professional engineering services and supply of diverse hard and soft technologies. (WB, 2003)

The important point is to identify functionality to be performed online. Theoretically, all the functionality related to tendering can be performed online. The decision should be based on criteria such as culture, electronic readiness and human resources of public institutions.

2.3.2 e-Purchasing

The e-Purchasing component is developed to address mainly low complexity, precisely defined transactions such as purchasing of off-the-shelf products, routine system maintenance and back up. These transactions are mostly related with the price-performance of the vendors. Therefore, it requires for the public institutions to reach as many vendors as possible. There are two types of e-Purchasing according to the price setting mechanism namely e-Shopping and e-Auction.

2.3.2.1 e-Shopping:

In this method, prices of goods and services are fixed. (Talero, 2001) The authorized procurement officers buy goods and services by using e-Catalogs of vendors. In e-Catalog of each vendor, they can find required information for comparing prices and features of various goods and services.

2.3.2.2 e-Auction:

In this method, prices are determined through the electronic negotiations among several public institutions. (Talero, 2001) e-Auction is appropriate for large purchases of off-the-shelf products. Also, public institutions may aggregate their purchases to get a price advantage.

It is important to recognize that e-Purchasing component is mostly equivalent to the e-Commerce systems in the private sector. However, since it is developed for the government usage, the terms and conditions for the qualification of vendors who can make registration are determined by the government. In addition, technical and quality standards, warranty requirements, maintenance services and ceiling prices are pre-established. Procurement Cards to be implemented as well.

2.3.2.3 e-Marketplaces

The e-Procurement component involves an electronic equivalent of physical marketplace called e-Marketplace where goods and services are demonstrated figuratively. It is possible to make several definitions for e-Marketplace ranged from emphasizing the Web-based characteristics (mySupplyChain, 2002) to describing the functionality and value-added features (Nishimura, 2002). However, all definitions share in common the statement that e-Marketplace is a web-based application and offers opportunities for online trading.

In the context of e-Procurement, e-Marketplace is defined as virtual trading environments that bring public institutions and vendors together for e-Procurement by enabling public institutions to reach more vendors and vice versa. Many buyers and many sellers coming together in marketplaces where they can obtain sufficient information to make decisions about whether to buy or sell a product, even though payment and delivery may not necessarily be arranged online. (UNCTAD, 2000) It requires that public institutions and vendors meet under the predefined rules. e-Marketplace enables online trading by offering several advanced purchasing techniques such as catalog-based purchasing, electronic auctions, etc. In other words, mechanisms implemented in e-Marketplace combine several business processes to save time and cost for both the public institutions and the vendors. (UNCTAD, 2001)

In addition, e-Marketplaces provide value-added services such as electronic payment, content management, comparison facilities, advanced techniques for finding best prices, etc. (Nishimura, 2002) These tools and services provided by the e-Marketplace changes depending on the type of the sector.

The benefits of e-Marketplaces to the public institutions are:

- Information gaps are removed and as a result better selections can be made.
- Costs are reduced by improvement of the procurement related processes. (Garicano, 2000)
- Competitive environment is enhanced by enabling the public institutions to access more vendors. (ERI, 1998)
 - Various goods and services can be screened and price advantage is achieved.
 - Market search will become easier through the e-Catalogs of vendors.

The benefits of e-Marketplaces to the vendors are:

- Sales related processes of vendors are simplified.
- Costs are reduced by modernization of the processes. (Garicano, 2000)
- Geographical distance is eliminated.
- Trading opportunities are expanded.

It is important to realize that the solutions for e-Marketplace that offers the functions mentioned above are available in the IT Market as commercial software. These solutions can be acquired, tailored according to the needs and can be operated by either the government or the vendors. Also, it is preferred that the existing private sector e-Marketplaces can be utilized.

2.3.2.4 e-Catalogs

e-Catalog is an important concept for e-Marketplaces. In definition, e-Catalog is an organized descriptive list of goods or services made available by vendors to potential buyers via the Internet. This online database of goods and services from multiple vendors facilitates the sale of goods and services by providing information about them. This information should both include technical specifications, price, picture, etc. and allow comparison with similar goods and services.

There are three functions in e-Catalog:

- Creating the e-Catalog
- Managing the content of e-Catalog
- Searching and finding goods and services

Successful e-procurement depends on highly organized and searchable catalogues and the real-time management of content. However creating and maintaining searchable and usable e-Catalog is an intensive and time-consuming task. Therefore, management of the content of e-Catalog should not be underestimated.

In the context of e-Procurement, e-Catalog management is generally performed by using the approaches:

- Hosted by Third Party: A third party serve as a service provider.
- Hosted by Vendors: Each vendor maintains its own e-Catalog, which is accessed by the public institutions via e-Marketplaces.

The other important issue for e-Catalog Management is the quality of the content. For public institutions to find the relevant information easily

through effective search techniques, data should be normalized and categorized. But, significant difficulty is encountered especially in deciding on the correct standards of product identification and classification. In this respect, utilizing open standards is preferable to achieve interoperability among public institutions and vendors.

As a summary, the e-Catalog should have the following properties:

- Easy to search
- Allow comparing data
- Detailed information on goods and services
- Standard classification scheme for goods and services

2.3.2.5 Public Procurement Cards

An electronic payment system is defined as “a financial exchange that takes place online between buyers and sellers” (Kalakota and Whinston, 1997, p.153). In fact, e- Payment is the critical part of e-Procurement, especially of e-Purchasing component, that enables online financial transactions. In this context, public procurement cards are becoming more common online payment method because of savings in processing time and cost. By utilizing the public procurement cards, it is possible for the government to link the purchasing information and the accounting information (Robinson, 2001).

In the electronic public procurement process, public procurement cards can be used for small but frequent purchases that are made directly through vendors. The benefits that public procurement cards bring to the procurement management of the government are (NASPO, 2001):

- Administrative cost reductions
- Productivity increases
- Flexibility of authorized procurement officers
- Reporting improvement

2.3.3 Auditing

The large scope, high level of risk, and software intensity of e-Procurement requires specialized oversight and auditing organization. This organization should balance the interests of the stakeholders of the e-Procurement system and promote cooperation among them to gain rapid adoption of e-Procurement system. The main functions of this organization are as follows:

Coordinate adoption of e-Procurement system

- Provide strategic advice on procurement and contract management
- Establish operational standards for e-Marketplaces
- Coordinate the reengineering of public procurement processes
- Advise public institutions on human resource education, training, and incentive systems
- Operate the financial and operational auditing system for both e-Tendering and e-Purchasing components
- Monitor outcomes of the e-Procurement system

2.4 Factors for the Success of e-Procurement

Most of the time, public institutions become unsuccessful in developing and carrying out the services they offer to the people in the web environment. The main reasons behind this are the overall ineffectiveness

of the business processes, the difficulties of integration with back-office systems and the lack of common standards. (NAPM, 2001) In addition to these obstacles, perceiving ICT by public institutions as the only solution is also important. Each of these obstacles is to be explained below:

2.4.1 Overall Ineffectiveness of Existing Processes:

It is important to improve the procurement processes of the government. Since the public procurement is central to the management of any operation and a comprehensive process covering every aspect of purchasing goods and services (such as determining the needs, ordering, payment and etc.), the effectiveness and efficiency of this process is essential to obtain goods and services of the right quality, at the right price and at the right time.

The use of ICT in public services implies that many steps of the process, formerly carried out manually, will be carried out online after the electronic transformation of public services. (NSW, 1998) This case is also true for e-Procurement and it is required to redesign public procurement process accordingly. In other words, e- Procurement should not be developed according to the existing processes because they are intended to work in the traditional paper-based organizational environment.

Therefore, for the government to benefit from e-Procurement, it needs to change its well-established public procurement processes. However, such changes are difficult to achieve, particularly for the government because the improvement of the public procurement process requires both the way of thinking and the way of behaving to change.

In summary, automating existing public procurement process using ICT will be the incorrect objective. To maximize e-Procurement benefits, public procurement processes must first be examined and re-engineered.

(Hope et al, 2000)

2.4.2 Difficulties of Internal and External Integration:

Integration of e-Procurement system and back-office systems such as accounting, inventory management, public investments and etc. is important for both the public institutions and vendors. Since without such integration, the potential benefits of e-Procurement and also targeted efficiency and effectiveness cannot be achieved. In other words, it would not make sense to use the e-Procurement system while performing internal processes manually. It should also be considered that investments on back-office systems would be needed for public sector modernization in the wake of the networking revolution.

Therefore, e-Procurement can serve as a driver of public information systems modernization investments that governments might otherwise delay.” (Talero, 2001,p.30)

2.4.3 Lack of Common Standards:

e-Procurement remains a relatively new concept and standards for e-Procurement have yet to emerge or be developed. Lack of common open standards is seen as a significant barrier to supplier adoption because of the cost of maintaining electronic data in many different standards. (OGC, 2002)

Open standards facilitate the implementation of e-Procurement system by providing common and interoperable platform for both public institutions and vendors enabling efficient and effective information exchange. (NECCC, 2001)

2.4.4 ICT Support:

Electronic transformation of the public procurement process with support of the ICT can enhance both the efficiency and effectiveness of public institutions by simplifying administrative procedures existing in the public procurement process. However, the transformation of e-Procurement is not just a technological effort. (Hope et al, 2000) In contrast, the transformation of e-Procurement requires fundamental changes in public administration and only a small part of this transformation can be done directly with the technology.

In other words, the ICT in itself should not be intended as either a solution or a key to success, but perceived as only an instrument to assess and improve existing procurement processes and to develop the e-Procurement solution. Therefore, attempts should not be made to make the processes fit the solution instead of controlling the technology to enable public procurement strategies.

2.5 Benefits of e-Procurement

e-Procurement uses Web-based technologies to connect the public institutions (as buyers) and vendors (as sellers). Therefore, the public procurement process in some way affects both the public institutions that need goods and services and the vendors that meet this need. Basically, public institutions can access various goods and services from a variety of vendors whereas vendors can reach all the public sector opportunities easier than ever before. As a result, both public institutions and vendors will benefit from a common platform where the former can get all the information to make a purchase decision and the latter can reach potential customers more than usual. (Ontology.Org)

Considering the inefficiencies found in the existing procurement process, the large purchasing power of the government as well as the developments in the ICT, the electronic transformation of the public procurement processes will offer the potential for significant savings from its early stages. It also brings lots of opportunities including reducing costs of goods and services through aggregating purchasing volume, streamlining procedures and etc. for both the government and the private sector.

In the following sub-sections the benefits of e-Procurement will be described regarding the government and private sector separately.

2.5.1 Benefits to the Government

Public procurement is a key process. Both lots of gains can be obtained and it is easy to implement e-Procurement technically. But before defining the gains and efficiencies that e-Procurement offers, it is essential to indicate the importance of strategic purchasing for the government. Strategic purchasing refers to “the process of determining which goods and services to procure, from which vendor and for what price.” (MetaGroup) Because of the relationship between strategic purchasing and public procurement, it is obvious that when strategic sourcing is performed well, public procurement becomes more effective and efficient. In addition, by taking advantage of the ICT, purchasing organizations will be able to operate more effective and efficient in the way they buy from, and work together with their vendors. (BuyIT (a), 2002)

The increased efficiency and effectiveness of public procurement process will provide potential to reduce the cost of public procurement. For example, in the United States it was reported that e-Procurement reduced the cost of transactions from \$120 to \$20 and delay from 40 days to 5 days. (Gunyou and Leonard, 1998) Australian Government estimates that the ratio of the processing cost for check versus electronic payments

ranges between 10:1 and 5:1. (DCITA, 2000) These savings are due to:

2.5.1.1 Decrease in costs associated with publishing and getting information

- Publishing the information related to the public sector opportunities and contract awards electronically in the Internet is both faster and cheaper than the traditional methods. (BuyIT (a), 2002)
- Purchasing activities can be monitored better (Avery, 2000) and statistical data for reporting on public procurement data and vendor activity will be provided. (Leipold, 2003)
- Market search will become easier through the e-Catalogs of vendors. (Nishimura, 2002)
- Public institutions will access various goods and services of multiple vendors in a competitive environment. (OGC, 2002)

2.5.1.2 Decrease in procurement transaction costs

- Public procurement services like market search, ordering, tendering, etc will become more efficient and effective. (BuyIT (b), 2002)
- Public resources will be used more efficiently and effectively. (Robinson,2001)
 - Administrative costs and time such as time and cost associated with business meetings will be reduced.
 - Time spent in the requisition-to-payment cycle will be reduced through the use of electronic ordering, electronic invoicing and etc.
- “Maverick buying” will be reduced. (Leipold, 2003)
- Bureaucratic inertia will be reduced. (Leipold, 2003)

2.5.1.3 Increase competition

- The public sector business opportunities will be accessible by all vendors, which in turn will enhance the competitive environment. (ERI, 1998)
- The purchasing power of the government can be better coordinated (Avery,2000) and costs of goods and services will be reduced through this aggregating purchasing volume.

e-Procurement will assist the improvement of not only public procurement processes but also other processes to which it must interface such as accounting, public expenditure management and public investments (Talero, 2001) changing the dynamics of public procurement management.

Considering the government expenditures on goods and services in Turkey, approximately \$22-24 Billion - 12% of GNP (Emek, 2001), the efficiency and effectiveness in public procurement process will bring significant cost savings.

There is also a consensus that government's efficiency and effectiveness in doing business will benefit all stakeholders: public administrations, vendors and taxpayers. (The Economists, 2000)

Among the benefits of e-Procurement comes promotion of e-Commerce. As a major purchaser, the government can encourage the e-Commerce activities of the private sector. (NSW, 1998) Basically, through the development of e-Marketplaces the fastest and easiest access to the public sector business opportunities can be enabled. Also, for securing competitive advantage, e-Procurement offers a powerful tool for ensuring that more businesses operate online.

It is also believed that, “e-Procurement can be a driving force for reform of legal and regulatory framework, technology investments and training that developing countries face as a result of the information revolution.” (Talero and Carp, 2002, p.9) Improvements in connectivity, adoption of common standards, and legislation on electronic transactions are indispensable not only for e-Procurement, but also for development strategies of most countries today. (Talero and Gaudette, 2001)

e-Procurement not only does enhance the overall quality of public procurement management throughout savings in terms of cost and time but also improves transparency in public administration.

Comparing to the economic benefits, transparency gains are more apparent from the first stages of e-Procurement. (Leipold, 2003) As disclosure of information associated with the public procurement is an obligation under the law, the Internet makes this disclosure easier and also makes procurement related information more accessible. In other words, the Internet offers the easiest way to publish this information on time.

As consequence of transparency, e-Procurement improves public administration further by fighting against corruption. Through the improved accessibility of all parties to the public procurement information and electronic logging of all transactions, equal treatment in the public sector business opportunities can be achieved and the likelihood of detection of illegal transactions can be increased. (Talero, 2001)

As a summary, an effective and efficient procurement process provides public institutions to gain more comprehensive picture of their overall procurement activities, initiate aggregate purchasing with others and improve relationships with the vendors. In addition, public institutions can reduce the maverick buying which is defined as the purchasing of goods

and services that do not meet the specified standards or are not supplied from the approved vendors.

2.5.1.4 Benefits to the Private Sector

Improvement of public procurement process by the means of e-Procurement will also benefit and enable improvement in the private sector. At the simplest level, for vendors, e-Procurement means easier business dealings with the government.

The other benefits that are gained by implementing e-Procurement are listed below:

- The procurement process will become more efficient by reducing the transaction costs associated with gathering information and supply chain.
- Vendors will reach more public institutions.
- The information associated with public sector business opportunities and contract awards will be accessed easier and faster. (Leipold, 2003)
- Vendors will have a chance to present the technical and non-technical descriptions, prices and promotions related with their goods and services.(OGC, 2002)
- The public procurement related processes like managing orders, managing inventories, financing, etc. will be more efficient and effective.
- Time and cost associated with business meetings will be reduced.
- The time consumed in the bureaucratic inertia will be reduced. (Leipold,2003)

- New opportunities for SMEs will be formed such as increased participation in supply chain. (ERI, 1998)

2.6 Why Organisations should be aware of e-GP

e-Government Procurement portals and systems can help with ensuring that the process and proper procedures are followed regarding the type of tender as described above. In addition the national e-procurement project (Public Procurement Reform Project- phase 2) will achieve the following efficiencies and savings:

- e-Government Procurement will improve process efficiencies
- e-Government Procurement will save overhead cost
- enables staff to concentrate on their prime function
- meeting e-government targets
- financial transparency and accountability
- benefits to suppliers
- reduction in processing costs
- reduction in ordering costs
- reduced paperwork
- improved cash flow
- reduced costs of credit control

2.6.1 Benefits and Improvements to Buyers

Although there may be overlap between the categories the benefits and improvements to the buyers generally fall into one of these areas:

2.6.1.1 Cashable

- The Tender organisation can use e-tender sites to advertise tenders which can result in considerable cost saving from advertising tenders in more traditional forms, ie national press
- The dependency on, and cost of, sending proposals via post or courier is eliminated
- Document storage - no physical storage constraints
- Document distribution - saves administration time and cost.

2.6.1.2 Process Saving

- Process improvements
- Receiving documentation electronically means circulating tenders internally across multiple locations is simplified greatly
- If 200 people have registered to receive details of the tender and if one of these people asks a question, then it is necessary to make everybody who has registered aware of the query and the answer – this is simple to do with an e-Government Procurement system/portal
- Saves time handling large numbers of expressions of interest and quickly reduces them to a manageable number
- Supplier can update pre-qualification and insurance details held on e-Government Procurement portal
- e-Government Procurement portal may be able to make use of such technologies such as XML questionnaires – the questions may or may not have mandatory options, which the tenderer must fill in before they can return the questionnaire
- Secure communications with suppliers can be data encrypted and time locked to protect all sensitive information

- Improved continuity when staffs are absent – information is easily shared via the e-Government Procurement portal.
- Automatically generates and dispatches common correspondence
- Encouraging suppliers to respond electronically saves time recording vital information and allows the automatic score of responses
- Formal opening procedures - speeds up recording of bids
- Dramatic time savings allow more time to make professional, accurate buying decisions
- e-Government Procurement system scan help compile year end reports,
- Tender organisation can also use system for quotes, ie RFQ.

2.7 Reduction in Overhead Cost

- The administration overhead of producing multiple bound copies of large paper-based proposal documents is eliminated.

Non-Cashable improvements/benefits

- Electronic submission can support environmental policies
- Total visibility of all tenders – greater management/audit control
- Project Management - project access for remote users
- Privacy, authenticity, integrity and non-repudiation
- Document control - Freedom of Information
- Improved history function of procurements, - all emails between the tender administrator and the tenderers are automatically recorded by the system.

2.8 Benefits and Improvements to Suppliers

Although there may be overlap between the categories the benefits and improvements to the suppliers generally fall into one of these areas:

2.8.1 Cashable Improvements and Benefits

- Visibility of all current and future business opportunities
- No cost to view opportunities and to register an interest - free access to the secure area of the portal (there may be a charge from the contracting authority for issuing the relevant documents).

2.8.2 Process Savings

- Tender documents are easily accessed and downloaded from the e-Government Procurement site
- The online submission process is simple to use, the upload is quick and a confirmation of receipt is usually issued
- Once a tenderer has gone through the pre-qualification process with the organization issuing the tender, it is likely that the tenderer will be asked only to update their own details and may be asked for further information which is not stored on the system resulting in fewer forms for the supplier to fill in
- History log - keeps supplier up to date with the process
- No need to rely on third party delivery of documents
- More time to prepare their response, if a tender system is on a managed server and web-based, the minute the supplier sends their response the buyer should be able to view it - the supplier can therefore submit responses minutes before the deadline
- Project Management - all communications and documentation held on portal
- Suppliers can generally make changes to their submission, including adding or deleting documents, at any time up to the tender opening date.

2.8.3 Non-Cashable

- Various ways to return documents
- Ease of use
- Data security - secure communications with suppliers, can be data encrypted and time locked to protect all sensitive information
- Supplier can update pre-qualification and insurance details held on e-Government Procurement portal

2.9 Benefits to Buyer

2.9.1 General Features to look for in Procurement Portals/Systems

- Fully CPTU compliant
- Manage expression of interest online
- ‘One Click’ publishing to websites and CPTU
- Complete tenderer management
- Different levels of access to the tender project can be assigned for different users
- Automatic generation and recording of common correspondence
- Easy to use questionnaire and score sheet creation
- Workflow management
- Transparent auditable process control
- Little or no internet knowledge required – should be intuitive help in the system
- Tenderers can receive everything they require via an e-Government Procurement portal; there is no need for software to be downloaded.

- Competing tenders are unaware of each other
- Pre-qualifying tenders
- Submissions not visible until opening date
- Messaging and feedback discussion area
- Can support all file types including PDF
- Involvement in procurement gives no rights of access to project data, other than to those documents included in the tender package
- The opening date for the tender can be extended if necessary, but cannot be brought forward.

2.10 Running the Process: Resources and Issues

Initial resources required and any issues which might need attention upfront such as:

- Decision on whether to involve an external ICT partner to deliver this or if there are the capabilities in house also to make the decision
- Evaluation of risks and contingencies if the system breaks down
- Resources in terms of money and personnel to drive forward the program
- Security, firewalls and other security related IT issues
- Training, cultural change and change management program.

2.10.1 Planning and Design e-Government Procurement System

e-Government Procurement allows professional buyers and sellers to announce their requirements online and gives an equal chance for all participants to respond by a set time on common terms. Control of the e-

GP process remains with the initiating Government Office who establish the tender terms, conditions and deadlines that need to be met by participating subscribers.

2.10.2 The Risks

If the system fails there should make provisions for putting into a place a back up in the form of email, disk or even reverting to hard copy.

It is probably advisable to put a disclaimer on the e-Government Procurement portal viewed by suppliers for any misinterpretation of instructions or downloads they receive by the e-Government Procurement portal.

Ensure suppliers are aware of what they are signing up to, for example by making them read a summary of important points before they register. A good example is that if, when they register, they are asked for an email address and it only gives the opportunity to add one, then they should be aware that if they give theirs and they are away they should give access rights to somebody else. If they give a generic email address, ie info@sales then there is a chance that emails could be deleted or redirected to the wrong person. In this situation it might be advisable to get more than one person to register from the supplier's company.

It is advisable to hyperlink anything that is generic but important that the buyer wants the supplier to sign up to, ie terms and conditions to the tender documents.

Include legislative points which might affect the award of the tender such as the Right To Information Act into the T&C's.

It is advisable on a web based procurement portal to give the buyers access to a view-only account for each supplier. So if a supplier is having problems with inputting information the buyer will be able to see exactly what the supplier can see and talk him/her through the process.

Make sure that all parties are aware that the server clock gives the time that everybody should adhere to.

A supplier may claim they could not access the e-Government Procurement portal because their network was down, before making a decision to accept the late tender.

2.10.3 Things to Avoid

Avoid excluding potential suppliers who cannot access an e-Government Procurement portal via a website, if needs be make hard copy ITT available.

Change processes for the better – do not just implement the paper system as it is.

Do not rely on paper, once the e-Government Procurement system proves it is working – switch off the paper.

Personalised letters etc, remember, the point of the e-Government Procurement system is to make information accessible to everybody so address letters generically, ie 'Dear Sirs' etc.

Giving users access they should not have. Make access relevant to the user and bear in mind that procurement should have overall control, for example procurement may be the only users to have access to the final award of the tender.

Avoid making a final decision on the tender award before involving users, where applicable, to look at the quality aspects of submissions.

Chapter 3 Procurement

3.1 Prelude

Procurement can be defined as the process of purchasing goods, works or services at the most economical total cost, while adhering to any specific requirements. The Procurement process should be optimised for benefit of the authority, supplier, or individuals and should be secured by signing a contract.

Procurement usually involves the acquisition of goods, works or service which are required either as a raw material or for operational purposes for a company or individual. Quality checks are also required as part of the Procurement process and suppliers are usually screened by the procuring company. Procurement processes usually lead to a good business relationship between the procuring company and the supplier.

Other terms for procuring include gaining, purchasing, buying and acquiring, and these provide in insight into what Procurement is. The Procurement process can vary between different companies, particularly when individuals are procuring goods or services for themselves, or when public sector organisations are procuring.

Electronic Procurement, which includes electronic invoicing, electronic ordering and electronic payments, is becoming more and more popular, with benefits including faster delivery and quicker payment.

Procurement procedures can also differ depending on the type of product or service being procured. While cost is the decisive factor in most Procurement exercises, factors such as reliability can outweigh cost when deciding on the successful supplier.

Procurement processes are carried out in some form or another in virtually every organisation, and are integral to smooth business operations.

Procurement is the full process involved in acquiring required goods, services or works. Procurement involves identifying the requirement of the purchasing authority, building a list of minimum requirements, and then scoring any interested parties who meet the minimum requirements, usually offering the highest score based on the most economically advantageous bid, commonly known as "best value". Part of the Procurement process is also to manage the contract once awarded, to ensure that the successful suppliers are providing a quality service.

3.2 Developing Trends in Procurement

Recently, a great deal of emphasis is being placed on procurement processes. The recent economic troubles, stiff competition and growing inflation are some factors which are thought to be responsible for this growing phenomenon. Unlike several years ago, when procurement was generally considered to be merely buying raw materials or machinery, the idea behind procurement has changed dramatically in recent times. Several new trends and developments have taken place in this regard.

Among the most important trends in this regard is the widespread use of online procurement. The web is playing an increasingly important role not only for direct procurement, but for indirect procurement as well. B2B activities are forming a major chunk of e-commerce activities, instead of B2C, as was previously believed. B2B procurement activities are on the rise on internet by the smaller as well as larger companies. The internet has brought about significant changes in the profit structure between the supply chains by reducing the number of intermediaries, which is an effective step in terms of lowering costs. Another major change that has been brought about is the level playing field for both large as well as small enterprises. With the amount of information available on the internet, even

the smaller enterprises are able to procure at favourable rates, which also help them to lower their cost of production. With access to a larger number of buyers as well as sellers, absolute advantage and monopoly is out of question. This generally means that the best rates are available when procuring.

Corporate procurement practices often rely on global sourcing these days. With the virtual world now emerging as the new workplace, it has become relatively easier to get in contact with suppliers all across the world and get the best rates. Although there might be several legal hurdles involved, global sourcing is nevertheless emerging as a clear favourite among a majority of the enterprises. Getting supplier information is incredibly easy, with details available in only a few clicks of the mouse. Just surf through the suppliers list, visit their websites, go through their product specialization lists and rates and get in contact with them. The costs can be reduced further by sharing supplier information. Enterprises can also opt for reverse auctions as well. This would help an enterprise in getting the best deals.

Procurement is an evolutionary process. What might appear to be the next big thing may be rendered absolutely obsolete the next day with the emergence of newer trends. Nevertheless, one cannot ignore the trends if one wants to survive in this scenario of cut throat competition.

3.3 Legal and Regulatory Framework in Bangladesh

Bangladesh is a unitary democratic republic with a written constitution. The president is the head of state. The government is modelled on the British parliamentary system. The national assembly comprises elected representatives who in turn elect a president. The majority party elects a leader who is invited by the president to form the government and the leader becomes the prime minister. The country follows the common law system, such as is found in Australia, Canada, India, and the United

Kingdom. The judiciary is independent from the executive branch of government.

The constitution had no direct provision bearing on public procurement. The public procurement procedures and practices had evolved over the years from the days of British and subsequently Pakistani rule. A Compilation of General Financial Rules (CGFR) originally issued under British rule was slightly revised in 1951 under Pakistani rule and was reissued in 1994 and again in June 1999 with very few changes. The CGFR outlines broad, general principles for government contracts to follow, leaving it to the departments to frame detailed rules and procedures for their respective procurements. It also refers to the Manual of Office Procedure (Purchase) compiled by the Department of Supply and Inspection as the guide for the purchase of goods and the Public Works Department (PWD) code as the guide for works. Both date back to the 1930s and have not undergone any revision worthy of mention. The CGFR also refers to the Economic Relations Division (ERD) Guidelines issued in 1992, modelled on World Bank Procurement Guidelines at the time, for procurement in externally funded projects, with the provision that the loan conditions would prevail in case of conflict. Since independence in 1971, the public procurement practices have been influenced by the World Bank, the Asian Development Bank, and other donors since the bulk of public procurement is externally funded. Some departments, autonomous boards, and public undertakings have drafted their own set of procedures or a manual, and the rest follow the PWD code.

The central ministries handle very little procurement. The departments under the ministries, such as the Public Works, Roads and Highways, and Local Government Engineering Departments, handle works in their respective sectors. The major share of public procurement is handled by the public sector corporations and semiautonomous bodies such as the Bangladesh Water Development Board, Rural Electrification Board,

Bangladesh Power Development Board, Dhaka Water and Sewerage Authority (WASA), Port Authorities etc. The authority to award contracts delegated to them is very low. For all larger contracts, the proposal must go to the ministry. Cabinet committee approve very large contracts. A substantial amount of procurement is carried out by major Government Departments, such as, Roads and Highways Department, Bangladesh Railway, Local Government Engineering Department (LGED), Bangladesh Telecommunications Company Ltd., Directorate of Health Services, Directorate of Education etc.

3.4 Overview of Previous Procedures and Practices

Each government agency and public sector corporation or board had its own set of procedures. They followed the open bid system-which includes public advertisement in the press, prequalification if appropriate, formal bidding and contract documents, bid and performance securities, public bid opening, evaluation of bids, and award to the lowest evaluated bidder. In the case of multiple lowest evaluated tender, the practice of selection of successful tender was lottery. And there was limitation to offer below estimated value, usually up to 5% below official estimation was allowed. The majority of public procurement was, externally funded which used to follow the procedures mandated by the development partner. The actual implementation of the procurements was very uneven, however. Barring some exceptions, the process was far from satisfactory, and substantial delays occur in most of the procurements. Some of the unsatisfactory features were:

- poor advertisement,
- a short bidding period,
- poor specifications,
- nondisclosure of selection criteria,
- award of contract by lottery,

- one-sided contract documents,
- negotiation with all bidders,
- rebidding without adequate grounds,
- other miscellaneous irregularities, and
- corruption and outside influence.

Procurement in Bank projects used Bank-mandated Standard Bidding Documents (SBDs) for ICB and Bank-cleared SBDs for National Competitive Bidding (NCB) and were closely supervised. The competition and quality of the procurement was superior. The review and approval procedures within the government were the same, to which we have to add the Bank review procedures. Hence, the delays were not very different.

3.5 Financial Control and Audit

The institutional framework of internal financial control in Bangladesh is under the supervision of the Ministry of Finance and external audit under the independent Comptroller and Auditor General (CAG) who audits all government and public sector expenditures and submits annual and special reports to the Public Accounts Committee of the national assembly. However, neither the internal control nor the CAG's audit is very effective. Many initiatives are under way to improve matters. The Country Financial Accountability Report prepared by the Central Bank, Bangladesh Bank, includes specific recommendations in the area of financial management and audit.

From the procurement point of view, the usual audit reports have only reported minor procedural lapses and unauthorized expenditures and not major irregularities, malpractice, or corruption in procurement. The audit staffs are not trained in public procurement concepts and procedures, and

the requirements of development partners such as the World Bank whose guidelines apply to a large part of the procurement. Hence training of audit staff is emergent.

Also, government should be required to respond to audit findings in a timely manner, failing which there should be some sanction, for example, withholding further loans to the sector by the International Financial Institutions (IFI).

3.6 Corruption

Corruption is a worldwide phenomenon, but it is especially widespread and destructive in developing countries. Bangladesh is no exception. As in many other developing countries, corruption pervades all walks of public activity in the country. In the words of the Country Profile of Financial Accountability (draft) report of June 12, 1998,

"Corruption is an endemic problem." It is common knowledge that procurement is a prime area for corruption. The report on Government Malpractices in the early 1990s confirms extensive corruption in public procurement. Since then, the extent of corruption has, by all accounts, increased and spread to all levels of bureaucracy and politics. It is the universal view that unless corruption is addressed, other reforms can have only a marginal impact. This is not an easy or quick task, however. The effort to eliminate corruption must be coordinated across the board, in all sectors and branches of government. In the words of the President of the World Bank, corruption in any country can be dealt with only by a combination of forces within the country and with a strong commitment at the top.

The reforms suggested in this report in the public procurement management area-such as a public procurement law and/or rules and procedures including an effective review/challenge procedure, national mandatory bidding and contract documents, reduction in the layering in the review and approval process, training at all levels, timely audit, enforcement of accountability, and establishment of a code of conduct for procurement staff-will substantially deter corrupt practices, although this will not be enough.

Reforms are needed in other sectors such as financial management, audit, judicial systems public servant salaries etc in a concerted and coordinated manner to minimize incentives for corrupt practices. Also establishment of a national watch dog institutional ombudsman -as indeed envisaged in the country's constitution, would contribute to greater transparency, accountability and good governance. This should be tackled on national basis covering all sectors of government activity.

Chapter 4 Electronic Government Procurement

4.1 Prelude

An e-procurement policy could provide valuable instruction to all levels of an authority and across all departments. A clear policy document provides readers with a statement of commitment to e-procurement but will also identify why the authority is choosing to modernise its procurement functions and to invest in e-procurement. Subsequently, the e-Procurement policy can be used for the following purposes: Guidance, education, motivation, and assistance in the process of change management in a number of ways. Firstly, the process of writing an e-procurement policy forces the organisation to clearly state its aspirations for the e-procurement system. Secondly, the authority can use the policy as a communication mechanism in respect of the vision of e-procurement within it, thereby beginning to prepare staff for the changes that they will face.

An e-procurement policy can detail how an authority's e-procurement strategy will be implemented, and should detail the authority's corporate hopes for the outcomes of the initiative. The policy should identify how these hopes are to be achieved and the requirements for project success. Additionally, the document must be informative and instructional, since it serves as an opportunity to extend a valuable message to all concern parties within the organisation. It is important to note that an e-procurement policy does not replace a business case for e-procurement, nor does it replace project management plans for it. Rather, it is a steering document which is used to help guide the authority and communicate with its employees (Hampshire County Council and Makgill, 2004). Therefore, for an e-GP policy to be effective, it must be updated as appropriate.

Managing and planning a distinctive policy and strategic framework can provide clear rules and guidelines to stakeholders that can help transform the socio-technical and socio-political environments. The efficiency of e-GP implementation is positively related to the availability of clear e-GP policies.

4.2 e-GP Change Management Programme

Another important organisational issue is the change management which is essential in anticipating and dealing with the psychological, cultural and technological obstacles that can arise. Without a carefully planned and managed change process, there can be a significant waste of time, resources, and an accompanying loss of employee morale. Hence, a carefully designed change management process can produce significant benefits.

Change management and training is the most important implementation issue and most other issues are also related to change management. In fact, change management in an e-GP project implementation process could be a major task and could take longer than expected. It may be argued that the full benefits resulting from e-GP will only be realised through significant changes in the organisation of public procurement operations and as such, will require effective change management.

The issue of organisational and institutional changes is hard to conceptualise for public sector organisations (UNDP, 2006). Organisational leaders with managing change tasks are engaged in “a great venture of exploration, risk, discovery, and change, without any comprehensive maps for guidance” (Senge, 1999:3). Therefore, many of the change management exercises are highly unpredictable in terms of what they achieve. Pascale (1999) suggests that failure of change projects is seen in 80% of all programmes.

The UNDP (2006) stated that change management shifts the roles and capacities of different actors, which in turn shifts the existing bases of power. Building in risk assessments and accounting for such initial instability, while managing its boundaries through managing people's expectations and concerns, is a necessary part of organisational change strategy.

Hence, it is essential to deliver clear and consistent messages regarding the change process, have regular and open stakeholder consultations, allow for the airing of grievances, and provide feedback and learning mechanisms to enable adaptation during the course of the change process, if this is to be managed effectively. It also stated that developing leadership skills, clarifying roles and getting stakeholders on board are all necessary for successful change interventions. However, paying attention to the soft aspects of organisations, such as culture, is also very much needed as these factors are often paramount determinants of the real direction and pace of change. The efficiency of e-GP implementation is positively related to the e-GP change management programme.

4.3 e-GP and HRM

Human resource management (HRM) is another important organisational factor in the achievement of efficient e-GP implementation. In all the required changes associated with this, it is very important to pay good attention to HRM issues, especially the selection of appropriate training and education programmes because any lack of skill required to effectively use e-government systems could be a serious problem, especially in developing countries, as has been indicated by numerous academics (e.g. Heeks, 1999; Moon, 2002; Ho, 2002). The procurement personnel should be educated and trained, has confidence in the processes used, and perceives procurement as a worthwhile career that can deliver benefits to

themselves and the community. They should also have access to relevant competent advice on e-procurement issues (ADB, 2004). The efficiency of e-GP implementation is positively related to the e-GP HRM.

4.4 The e-GP System

National e-Government Procurement (e-GP) portal (i.e. <http://eprocure.gov.bd>) of the Government of the People's Republic of Bangladesh is developed, owned and being operated by the Central Procurement Technical Unit (CPTU), IME Division of Ministry of Planning. The e-GP system provides an on-line platform to carry out the procurement activities by the Public Agencies - Procuring Agencies (PAs) and Procuring Entities (PEs).

The e-GP System is developed as a web portal, hosted in e-GP Data Center at CPTU, from where and through which Procuring Agencies and Procuring Entities will perform their procurement related activities, i.e. to publish Annual Procurement Plans, Invitation for Tender (IFT), Request for Proposal (RFP), Request for Quotation (RFQ), Tender/Application/Proposals preparation, tender Submission, Opening, Evaluation, Contract Award Notices, Contract management, payments, performance monitoring through Procurement Management Information System with Key Procurement Performance Indicators, and other procurement related information as required by the PPA 2006 and PPR, 2008 along with subsequent amendments, using a dedicated secure web based dashboard. The e-Government Procurement solution is introduced under the Public Procurement Reform (PPR) Project, supported by the World Bank and being used by all the government organizations which will help in ensuring equal access to the Bidders/Tenderers, efficiency, transparency and accountability in the public procurement process in the country. (www.eprocure.gov.bd)

As decided by the Government, users may be charged and/or waived specified amount of money for different categories of use including Registration (Currently Tk. 5000.00 for registration and Tk. 2000.00 for annual renewal), For International Tenderers and Consultants, registration fee is USD \$100 (US Dollars One Hundred Only) and annual renewal fee is USD \$30 (US Dollars Thirty Only) transaction, periodic renewal, additional storage space, facilities to use specific features/modules of the e-GP system and different services from the operation, maintenance and management entity. CPTU/IMED, M/O Planning shall have the rights to set reasonable charges or waiver to promote the use of the e-GP System and sustainability of the System in long run.

4.5 Stakeholders of the e-GP System

The e-GP System shall support the following user categories for stakeholders/actors initially, and provides them the secured access to related functionalities of the e-GP system through dashboards:

- Tenderers/Contractors/Applicants/Consultants.
- Procuring Agencies/Entities.
- Payment Service Providers (Scheduled banks and other payment service providers).
- Development Partners.
- e-GP System Administrators (CPTU and Procuring Entity administrators) and Auditors.
- Operation & Maintenance partners.
- Committees (opening/evaluation etc.).
- Approval authorities
- General public for information related public procurement
- Media community for updates, announcements, news releases etc.

The Government of the People's Republic of Bangladesh has approved the e-GP guidelines in pursuant to Section 65 of the Public Procurement Act, 2006. As per approved guidelines, e-GP system is being introduced in two phases.

In the first phase, e-Tendering will primarily be introduced on pilot basis, in the CPTU and 16 (sixteen) Procuring Entities (PEs) under 4 (four) sectoral agencies, namely: Bangladesh Water Development Board (BWDB), Local Government Engineering Department (LGED), Roads and Highways Department (RHD) and Rural Electrification Board (REB). The system will gradually be rolled out to 291 PEs of those 4 sectoral agencies up to district level and ultimately it will be expanded to all the PEs of the government.

In the second phase, e-Contract Management System (e-CMS) will be introduced covering complete Contract Management processes such as work plan submission, defining milestone, tracking and monitoring progress, generating reports, performing quality checks, generation of running bills, vendor rating and generation of completion certificate.

4.6 e-Tendering

Procuring Entity will publish their tender notice in e-GP website. To participate in e-Tendering published on e-GP system, the tenderers/consulting firms/individual consultants/Govt. owned enterprises need to go through a registration process. Only after the successful registration process, a tenderer gets access to e-GP System Dashboard and e-GP functions for participating in e-Tendering. Any fee stipulated in the tender document by Procuring Entities should be paid through scheduled member banks.

4.7 Financial Transactions

Scheduled Financial institutions/Banks authorized by the Bangladesh Bank are allowed to register for collecting fees and conducting financial transactions for e-GP. Scheduled banks and other payment service providers get secured access to the e-GP system with their own dedicated and secured Dashboard.

Tenderers can download the tender document from the e-GP System uploaded by the Procuring Entity (PE). Before downloading, the tenderers must pay fees determined the Procuring Entity (if applicable) for the document through e-GP member bank network. Fees may be paid through cash/Demand draft/Pay order/Bank instruction and the bank will update the e-GP System. Tender document download link will be enabled only after Bank updates the e-GP System about the fees paid by the tenderers.

Tenderer should prepare Tender Security and Performance Security through e-GP payment network member bank either in the form of Cash/Demand draft/Pay order/Bank advice or Bank guarantees. Then the bank should update the e-GP System with transaction details.

4.8 Security

Tender submitted by the tenderer will be stored in e-GP database in encrypted form. Only the tender opening committee can get access to tender documents and identification of tenderers only after the expiry of final deadline for tender submission. Before the deadline opening committee members/ procuring entity/ e-GP administrator or tenderers or any other user will not get to know the identity of the participating tenderers and the content of the submitted tenders.

4.9 e-Signature

All types of users at the first instance (except general website visitor) use their e-mail ID as user name and provide the secret password. This password will be converted into irreversible Hash value (combination of alphabet and numbers generated through mathematical formula). Password will not be stored in the e-GP database, only the Hash value will be stored. As the Hash value is irreversible, password cannot be regenerated from stored Hash value. In case of uploading and submitting documents to e-GP System, each of the documents will be encrypted by the Hash value as equivalent as putting the signature of the user.

4.10 Pre-tender Meeting

Responses/clarifications of the queries relating to the tender should be posted by tenderers via e-GP online channel through Dashboard before or during pre-tender meeting. Queries posted via Fax/Post/Email will not be entertained. Pre-tender meeting will be held online and clarification to the queries of the tenderers and also responses will be shared through e-mail, and also Dashboard inbox of the tenderers who purchased the documents for specific tender. Name of the tenderers who participated in the electronic pre-tender meeting will not be shared with other tenderers by the e-GP system and procuring entities.

4.11 Tender Opening

Opening committee members log into the e-GP System only after the expiry of the deadline of the final submission of tenders. Then e-GP System will automatically generate opening sheet in approved tabular format detailing the name, address, contact details, quoted price, discounts, currency and information about tender withdrawals, substitution and modification, if any. Participating tenderers may physically present or

remain online during the opening time. Tender Opening Committee forward the Tender Opening Sheet (TOS) with their comments, if any, to the Procuring Entity; and the Tender Opening Sheet will be shared with the participating tenderers through e-GP System. If any tenderer logs into the e-GP System at the time of tender opening, tenderer online status will be treated as his presence in the tender opening meeting.

4.12 Tender Evaluation

Evaluation Committee members get access to e-GP system and tenders, only at the specific time period set by the Procuring Entity. The e-GP system automatically generates the comparison matrix of all the tenders based on their quoted price & evaluation criteria for the reference to the evaluation Committee. Evaluation Committee prepares evaluation report with all necessary information, comparative charts & their comments & recommendations and forwards the compiled evaluation report electronically to the appropriate authority through the work flow set in the e-GP system for that particular tender.

Chapter 5 Data Collection and Analysis

5.1 Prelude

The questionnaire consists of 25 questions. First 5 questions are related to respondent personal information, question 6 to 12 are related to CPTU, question 13 to 16 are related to e-GP, question 17 to 23 are related to adequacy of knowledge and infrastructure of respondent, last 2 questions are their personal comments on e-GP.

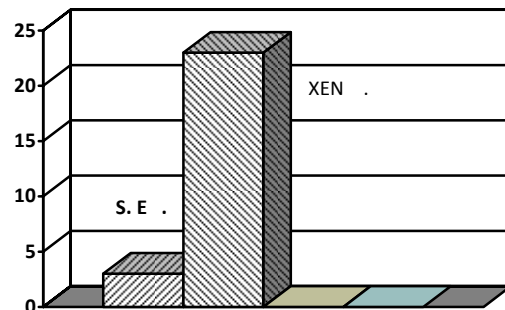
5.2 Questions and Responses

Question 1. You are (designation)

S.E. Executive Engineer SDE / A.E

Response:

Designation	No.	%
S. E	3	12
Executive Engineer	23	88
A.E	0	0
No response	0	0
Total:	26	100



Question 2 and 3:

Office name, respondent's name and cell number.

Question 4 and 5:

Experience of respondents in public procurement. BWDB is a Public Sector Engineering organization and all the engineers are involved with procurement at different level. Executive engineers have at least 15 years

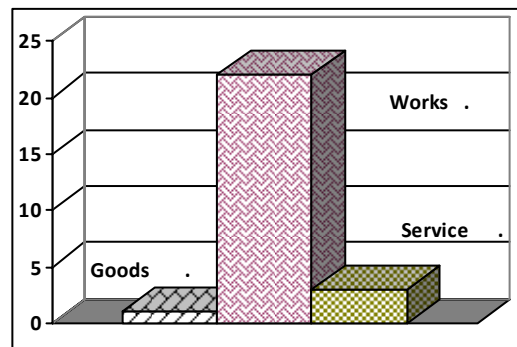
experience in job, so have at least 15 years of experience in procurement. In this survey, 100% responders have more than 5 years experience in procurement.

Question 6. What do you procure mainly?

Goods Works Service

Response:

Options	No.	%
Goods	1	4
Works	22	84
Service	3	12
No response	0	0
Total:	26	100



BWDB is an engineering organization, so most of budget spends for works. The goods and services they procure are directly related to work or planning, designing or feasibility study to perform the work. So most of the participants of this survey have experience to procure mainly works and it is 84%.

Question 7. What kind of document you use for procurement?

CPTU IDA Others

Response: All respondents' (100%) use PPR documents prepared by CPTU, 8% have experience to use IDA Guideline and 12% have experience to use other documents like ADB guideline, old BWDB procurement guideline etc.

Question 8. Do you know name of CPTU website?

Yes No

Response: 100% respondents know about CPTU and its website.

Question 9. Can you use EXCEL file provided by CPTU to write tender notice?

Yes No

Response:

Options	No.	%
Yes	19	73
No	7	27
No response	0	0
Total:	26	100

CPTU provided an Excel file in their website for preparation of tender notice, which is supposed to send to CPTU by email or CD media. CPTU software can upload the tender notice directly from the Excel file. Most of the participants prepared tender notice in MS Word and send to CPTU via CD media, which is hard to use by CPTU. 73% respondent can use the file and 27% cannot use the file.

Question 10. If yes, do you VALIDATE the excel file after writing tender notice?

Yes No Not applicable

Response:

Options	No.	%
Yes	14	54
No	5	19
Not applicable	7	27
No response	0	0
Total:	26	100

Only 73% respondent can use the Excel file of CPTU and 54% use to Validate the Excel file.

Question 11. Do you visit CPTU website to CHECK your tender notice?

Yes Not always No

Response:

Options	No.	%
Yes	24	92
Not always	2	8
No	0	0
No response	0	0
Total:	26	100

Most of the respondent (92%) visit CPTU website to check their tender notice.

Question 12. Do you PRINT your tender notice from CPTU website?

Yes Not always No

Response:

Options	No.	%
Yes	19	73
Not always	5	19
No	2	8
No response	0	0
Total:	26	100

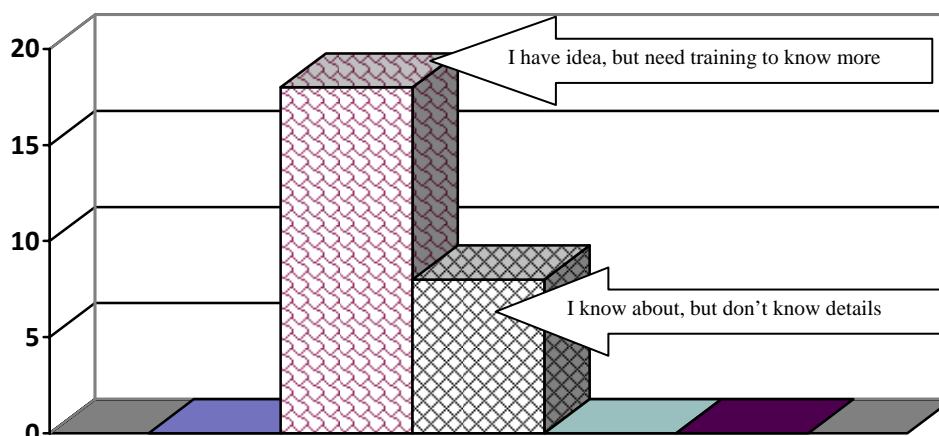
73% respondents print their tender notice from CPTU website and others are not regular to print or do not print.

Question 13. Your knowledge level about Electronic Government Procurement (e-GP)

- I have clear understanding
- I have idea, but need training to know more
- I know about, but don't know details
- I have no idea

Response:

Options	No.	%
I have clear understanding	0	0
I have idea, but need training to know more	18	69
I know about, but don't know details	8	31
I have no idea	0	0
No response	0	0
Total:	26	100



None (0%) have 'Clear understanding' in e-GP, while most of them (69%) 'Have idea but need training' and others (31%) 'know about, but don't know details' about e-GP.

Question 14. In your opinion, what are the challenges to implement e-GP?

Response: This is an open ended question. Responders discussed it different ways, but their main points are common. The responses are compiled below:

Response:

Options	No.
Inadequate internet connectivity	10
Network, computer infrastructure	3
Lack of computer competency of officials	3
Lack of knowledge of bidder	5
Financial transaction system is complicated	1
Lack of skill manpower	5
e-GGP software problem	1
Difficulties in Post qualification	1
As most of tenderer will employ operator or agent to fill-up tender data sheet online, it will be difficult to keep confidentiality.	1
Hacker, virus etc	1
Electricity	1
Acceptability of new system	4
Powerful person may create obstacle	1
Lack of awareness	3
Logistic support	2

Question 15. Do you know how to sell tender document in e-GP system?

Yes No Not sure

Response:

Options	No.	%
Yes	2	8
No / Not sure	24	92
No response	0	0
Total:	26	100

Most of respondent (92%) do not know the process of selling tender document in e-GP system. Only 8% know the process.

Question 16. Do you know how to receive tender security/performance security in e-GP system?

Yes No Not sure

Response:

Options	No.	%
Yes	2	8
No/ Not sure	24	92
No response	0	0
Total:	26	100

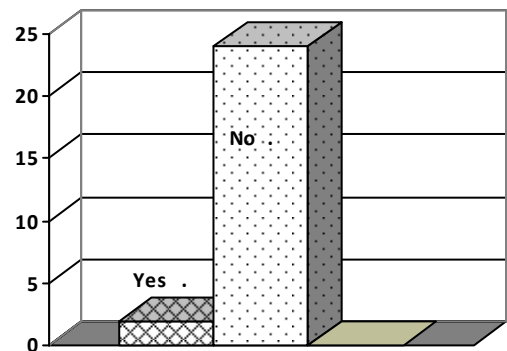
Same as selling process of tender document, 92% do not know the process of submitting tender security or performance security in e-GP and only 8% know the process.

Question 17. Do you have any training on e-GP?

Yes No

Response:

Options	No.	%
Yes	2	8
No	24	92
No response	0	0
Total:	26	100



Among the respondent, 8% have any training on e-GP and 92% do not have any training on e-GP.

Question 18. Do you have computer at office for your own use?

Yes No

Response:

Options	No.	%
Yes	24	92
No	2	8
No response	0	0
Total:	26	100

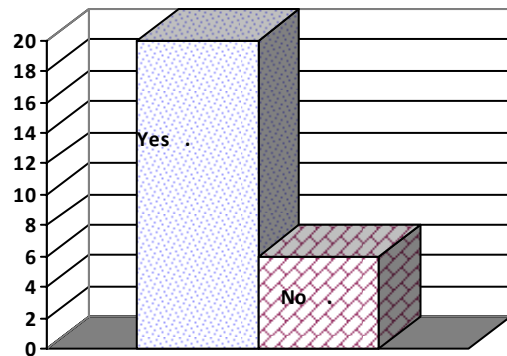
Almost every respondent have computer in office for his use. 92% responded to 'Yes' and 8% responded to 'No'.

Question 19. Do you do your official works in computer by yourself?

Yes No Not usually

Response:

Options	No.	%
Yes	20	77
No / Not usually	6	23
No response	0	0
Total:	26	100



77% responded to 'Yes' and only 23% responded to 'No' or 'Not usually'.

Question 20. Do you have adequate internet access?

Yes No

Response:

Options	No.	%
Yes	23	88
No	3	12
No response	0	0
Total:	26	100

88% respondents have adequate internet connection, but 12% do not have adequate internet connection.

Question 21. Are you used to send/receive e-mail by yourself?

Yes No

Response:

Options	No.	%
Yes	25	96
No	1	4
No response	0	0
Total:	26	100

96% responded to 'Yes' and 4% responded to 'No'.

Question 22. Is anybody know password of your e-mail address?

Yes No N/A

Response:

Options	No.	%
Yes	4	15
No	20	77
Not applicable	1	4
No response	1	4
Total:	26	100

77% responded to 'No', that is, they keep password secret. But 15% respondents are not aware to keep password secret.

Question 23. Do you have printer?

Yes No

Response:

Options	No.	%
Yes	25	96
No	1	4
No response	0	0
Total:	26	100

96% responded to 'Yes' and only 4% responded to 'No'.

Question 24. Do you like e-GP system?

Yes No

Response:

Options	No.	%
Yes	25	96
No	1	4
No response	0	0
Total:	26	100

96% respondents like e-GP and 4% responded to 'No'.

Question 25. Why:

Response: This is another open ended question. The responses are compiled below:

Options	No.
e-GP will reduce misprocurement	1
Transparent process	15
Time for procurement will reduce	1
Eliminate undue pressure	5
Tender box snatch will stop	1
Online payment is secure and fast	11
Step towards Digital Bangladesh	1
Modern and effective process	2
Fair selection of bidder	6
Economic	1
Corruption free	1
Bidder's participation will be reduced	1

Chapter 6 Recommendation and Conclusion

6.1 Prelude

One of the most significant barriers to successful implementation of e-GP is the resistance of organizations to change. Organizational cultures and fear of reorganization create resistance to integrating work and sharing use of systems across several agencies. It is difficult for the government officers, who are practicing traditional way of contracting, monitoring, reviewing and payment for years, to adopt transaction without face-to-face discussion.

A fundamental barrier to getting productivity from government ICT is government's inherent resistance to change. E-Government uses ICT to improve productivity by enabling better interactions and coordination. But each opportunity requires substantial changes in current bureaucratic procedures. Success will depend on breaking down the resistance to such change. A holistic approach is needed, and each E-Government initiative must include results oriented performance measures, policy alignment, training, communications, and organizational change milestones.

It is not uncommon for the traditional purchasing cycle to take months from the initial formation of the specification through to the award of the contract. A survey shows that the following are percentages of total time

- searching for/identifying appropriate suppliers is 53%
- managing/communicating preferred supplier list is 7%
- Tender document development is 10%
- Tender response/receipt is 7%
- screening/sorting tenders is 20%
- contract signing 11%

The whole process takes, on average, 3 to 4 months. e-Government Procurement (exchanging tenders documents electronically) can significantly improve the efficiency and time taken to complete a purchasing project, many of the activities listed above can be managed electronically and/or automated. e-Government Procurement portals (secure dedicated websites, specifically set up for the exchange of information and tenders documents electronically over the internet <http://www.eprocure.gov.bd>) and systems should allow the buyer to create, manage and transmit contract announcements (notices and addenda) electronically. Tenderers can create and manage multiple profiles containing expressions of interest/pre-qualification information. Invitation to Tender (ITT) documents can be exchanged electronically, and the assessment and award of tenders is usually automatic. E-Government Procurement portals/systems can significantly reduce the numbers of hours and bureaucracy to create and award a tender. It also creates an electronic audit trail that can be used to provide more effective management information, particularly in respect of the statutory returns local government departments are required to produce on an on-going basis.

All contracts from the public sector which are valued above a certain threshold must be published in the CPTU website according to Bangladesh legislation. The legislation covers organisations and projects which receive public money such as Local Authorities, Central Government Departments, Port Authorities, Defence etc. They must advertise in CPTU if the value of the goods/services or works exceeds the relevant thresholds. Because the legislation directly affects the public sector, e-Government Procurement is currently used more by those involved in the tender process within the public sector.

It may also be of interest and relevance to suppliers who take part or would like to take part in tenders.

6.2 Case Study

Bangladesh Water Development Board introduced e-GP in four divisional offices in 2011. The Offices are Dhaka Division-1, Rajshahi Division, Chittagong Division-1 and Sylhet Division of Bangladesh Water Development Board. As a pilot activity, each division office selected only one tender for e-GP in 2011. All of them faced problem to inspire bidders to participate in e-GP. All of them successfully completed the tendering, evaluation and issuing NOA. Three of them signed contract.

In case of Dhaka Division-1, tender notice published in 2/11/2011 and last date of online tender submission was 18/11/2011. But there was no participation of bidder and to inspire and to allow bidders to participate, date of submission extended for three times. At last, six bidders purchased tender document and two bidders submitted tender in e-GP portal. One of these two bidders declared non-responsive. So procuring entity issued NOA to only responsive bidder. But the bidder didn't sign the contract and his bid security is forfeited. As there is no other responsive bidder, the tender process is abandoned and CPTU informed that there are some technical problem in software to re-tender. And the tender goes then in traditional way. But this procuring entity is encouraging bidders to register in CPTU to participate in e-tendering; and they will use e-GP in more cases in future.

6.3 Survey and the Organization

Bangladesh Water Development Board is a public sector engineering organisation. Most of its activities are in procurement of works, goods and services. The officers are keen to introduce e-GP system. At present, there

are some problems to implement the system but they expecting the organization and CPTU will overcome the challenges.

6.3.1 Adequate Internet Connectivity

All over the Bangladesh, internet connectivity speed is low and somewhere connection is not reliable and not continuous. BWDB offices have internet connection in all offices now, but the service need to be improved. Connection facilities of bidders are limited. Usual time for submission deadline is between 12pm to 3pm, and traditionally bidders submit tender at last moments. Also, tender opening will be soon after deadline of tender submission. So when e-GP will be introduced at large scale, there will be huge traffic in internet infrastructure of Bangladesh and it may collapse.

6.3.2 Acceptability of New System

CPTU introduced the publication of tender notices in 2003. Tender notices of BWDB are publishing in CPTU website (www.cptu.gov.bd) for many years. Yet only 54% procuring entity use prescribed excel file (14 out of 26, validate the file) correctly. Though it is required to print the published tender notice for evaluation and record keeping purpose, 27% (7 out of 26) are not regular to print notices from website. All of these engineers have more than 5 years experience in public procurement and all of them used CPTU documents and procedure in procurement. So it seems that BWDB officials are not paying attention to accept new system quickly.

6.3.3 Knowledge and Awareness of BWDB Officials

All engineers (respondents) have idea or know about e-GP (26 out of 26), but none have clear understanding. 69% (18 out of 26) interested to have training on e-GP. Two engineers, out of 26, have training on e-GP and know how to sell document and how to receive tender security or performance security in e-GP system. Others do not have training and do

not know the process of selling document or process of financial transaction.

Almost every engineers (24 out of 26) have computer at office for his use, 96% have printer and 77% (20 out of 26) use computer personally for official purposes.

88% respondents (23 out of 26) have adequate internet connection and 96% (25 out of 26) personally send or receive email.

For e-GP system password of the procuring entity is very important. 77% respondents (20 out of 26) informed that they keep their password secret.

It may be concluded that BWDB officials have adequate knowledge and awareness in computer system. They will be able to use e-GP system, if they are trained.

6.4 Challenges to Implement e-GP in BWDB

6.4.1 Computer Competency

Though respondents use computer for official purpose and use email service, they think to improve their competency in computer. Also computer competencies of bidders need to be increased.

6.4.2 Lack of Bidder's Interest

Initially in pilot cases of BWDB, it shows that bidders are not keen to participate in e-GP system. They need to be inspired by advertisement and other promotional process.

6.4.3 Software Problem

In 2011, Dhaka Division-1 of BWDB faced software problem of e-GP system. CPTU system was unable to re-tender. So the software of e-GP should be bug free and should be able to handle all possible situation.

6.4.4 Hacker

Hacker, virus, spam, phishing are great threat for internet based computerized systems. Server of the system and workstations at users end, all are under threat. Proper antivirus software and only legal purchased software should be used in all workstations and servers.

6.4.5 Electricity

Power supply system and Internet connection of Bangladesh are not continuous. It may cause serious damage in transaction if there is discontinue of connection between server and workstation during online data entry.

6.4.6 Powerful Person of Government may create Obstacle

A basic concept of Procurement is that bidder will be selected by merit and not by chance or lottery. But lottery system is introduced in PPA for the interest of some powerful persons. This group may create obstacle to implement e-GP.

6.4.7 Logistic Support

Most of the procuring entity has adequate logistic support but most of the bidder may not have adequate logistic support. It is costly for bidders to buy computer, scanner, printer, internet connection and to appoint qualified computer operator.

6.4.8 Confidentiality

Confidentiality is a major issue for bidders. In manual system, office staffs prepare all documents of tender, but the proprietor or head of organisation quotes prices and keep them confidential. In e-GP system, it will be tough for them to keep price secrete, as most of them will depend on computer operator to submit online tender.

6.4.9 Central Databank

There is no central databank for bidders experience certificates, audit report, turnover record etc. So procuring entity can't check the records of bidders in e-GP online system. Procuring entities have to print huge document to send for post qualification. This is a time consuming and costly process.

6.5 Merits of e-GP

One respondent out of 26, dislike implementation of e-GP. Number of potential bidder reduce due to Public Procurement Regulation and Act, because now few companies have adequate experience to participate in bidding process and they sell contract unofficially to others after wining contract. e-GP will again reduce number of competent bidders and competition will reduce.

But most of the respondents, 25 out of 26, like the implementation of e-GP. They think, e-GP will reduce undue pressure in procurement, will be transparent, efficient, time saving, fair, economic and corruption free. They also think, e-GP will help to build digital Bangladesh.

6.6 Recommendations

Based on the analysis of the collected information and on international practice, some practical measures are recommended for better implantation of e-GP in Bangladesh:

- The formation of a high-powered steering committee or board with a mandate to take decisions on all issues is important factor for successful implementation of the e-GP agenda. This board can be composed of concerned government ministries, CPTU, Private Sector under the strong leadership of Prime Minister. Regular meetings once every six months should be initiated by this board to consider in detail all issues that arose during implementation and to provide solutions without loss of time.
- e-Government Procurement initiative needs to be monitored regularly to identify opportunities for ongoing improvements. This includes periodic and planned reviews. After specific period and based on collected information the Strategy should be updated and new objectives should be set forth.
- International practice has several options for revenue generation for agency like CPTU such as (i) Annual subscription fee from suppliers; (ii) Transaction fee paid by supplier awarded the contract and (iii) Fixed fee per tender participation. However, such fees need to be kept on a reasonable level in order not to run the risk of reducing supplier's participation.
- The lack of legislation on e-procurement can negatively impact on the use of such systems, in Bangladesh, the current legislation on procurement are generally based on conventional systems. Aware of computer fraud and system insecurity, many possible suppliers can easily be deterred from participating in the process than subjecting

themselves to a system which lacks legal backing in form of legislation and policy as this would be considered a big business risk.

- Resistance to change by system users are likely to suffice and if not well managed can adversely affect the success of implementing this system in government departments. Motivational program may improve the situation.
- CPTU should create a sustainable training system for procurement practitioners to ensure compliance, professionalism and career development. No online training tool (CD ROM, Animation, Video material, etc.) is developed yet. Buyers are not trained yet to use the system. CPTU should train both procuring entities and supplier.
- Currently there are two procurement websites: www.cptu.gov.bd and <http://www.eprocure.gov.bd>. Ideally, information shall be consolidated on one website with appropriate information and both Bangla and English should be used.
- Internet connectivity of the country should be improved. As it is not possible to do overnight, bidders may be encouraged to submit tender at night. Also tender opening time may be spanned for any time of the day.

6.7 Recommendations for Future Research

Electronic Government Procurement is a relatively new area of study. Bangladesh government launched e-GP as pilot basis in four targeted engineering organisation. Present research examined challenges to

implement e-GP in Bangladesh Water Development Board and to assess readiness of the organisation. There are lot of scope of research in this area.

- Performance measurement of e-GP system.
- Performance measurement of the procuring entity and bidders.
- Find out actual cost savings in tendering process.
- Identifying the training needs, motivational issues and composing a comprehensive training plan for both procuring entities and bidders.
- Develop a virus free platform for e-GP.
- Ethical issues in e-GP.
- Identifying the reason to reduce number of potential bidders since 2003.
- Identify the alternative way to assess competency of bidders.

6.8 Conclusion

All historical information relating to the award of the tender will be held on the e-Government Procurement portal/system. This means that auditors can find all the information they need in one place, along with an auditable trail of the award decision.

Anybody who has dealt with the reams of paper that can be involved in the traditional procurement process and has read this document will hopefully now see the obvious benefits that an e-Government Procurement system/portal can bring.

Electronic tender document evaluation systems can improve the procurement process significantly, if they are well adapted, time can be

saved in terms of bid evaluation; hence quickening the process, reducing the strain on the resources and thus realizing economies of scale.

e-Government Procurement solutions can undoubtedly improve the procurement process and drastically cut-down the amount of time taken. This can result in an increase in the amount of tenders undertaken at any one time and/or an improvement in the overall control of the process. End users can be given access rights to involve them in the process to a large degree ie the specification writing etc and work with purchasing to achieve the best overall value in terms of price and quality.

References

1. Adam, John et al (2007), *Research Methods for Graduate Business and Social Science Students*.
2. Ageshin, Evgeniy A (2001), "E-procurement at work: A case study," *Production and Inventory Management Journal*, 42 (1), 48.
3. Allen, Robert W (1998), "Exchanging data," *Independent Banker*, 48 (7), 20.
4. Anders, J (1991), "Electronic data interchange: it works," *Dimensions in Health Service*, 68 (7), 31-33.
5. Angeles, R., (2005). *Business -to-business e-procurement corporate initiative: A descriptive empirical study*. Fredericton, NB, Canada, ICEC conference, 2005,
6. Anonymous (2002), "Action is needed fast to get on-line government up to speed. But the man charged with making this happen, e-envoy Andrew Pinder, is finding his powers to effect change are limited," Vol. 2002-05-24: *Public Finance*: <http://www.publicfinance.co.uk>.
7. Arnold, Ulli and Michael Essig (2002), "Digital bidding in public procurement: economic effects of electronic sourcing in the public sector," in 11th Annual International Purchasing and Supply Education and Research Association Conference. Twente University, Netherlands.
8. Asian Development Bank (ADB) (2004) *Government of Sri Lanka, Survey of Readiness for Electronic Government Procurement (e-GP)*, ADB.
9. Avery, S. (2000). *e-Procurement: A Wealth of Information for Buyers Purchasing*.
10. Baker, R Jerry (1999), "e-Purchasing: big benefits, tough choices," in *Global Purchasing and Supply Chain Strategies*, Elizabeth Cooper, Ed. Vol. October 1999. London: World Markets Research Centre.
11. Bakos, J Y (1991), "Information links and electronic marketplaces," *Journal of Management Information Systems*, Autumn 91 (8/2), 31 - 53.
12. Bamfield, Joshua (1994), "Learning by doing: Electronic data interchange adoption by retailers," *Logistics Information Management*, 7 (6), 32.
13. Barratt, Mark and Karsten Rosdahl (2002), "Exploring business-to-business marketsites," *European Journal of Purchasing & Supply Management*, 8 (2), 111-22.
14. *Bilgi Toplumuna Doğru*. (2002). Türkiye Bilişim Şurası. 10-12 May.
15. Birks, Clare, Simon Bond, and Mike Radford (2001), "Guide to e-procurement in the public sector: cutting through the hype." London: Office of Government Commerce.
16. Burgess, T.F., H.K. Gules, and M. Tekin (1997), "Supply-chain collaboration and

- success in technology implementation," *Integrated Manufacturing Systems*, 8 (5), 323.
17. BuyIT (a), (October 2002) e-Procurement Guidelines. With support from the e-Envoy. Available at: http://www.buyitnet.org/Best_Practice_Guidelines/e-Procurement/index.jsp.
 18. BuyIT (b). (2002). Building the Business Case for e-Procurement.
 19. Cameron, JW (2003), "Electronic procurement in the Victorian government." Melbourne: Auditor General Victoria.
 20. Cannon, Joseph P and Christian Homburg (2001), "Buyers-supplier relationships and customer firm costs," *Journal of Marketing*, 65 (1), 29.
 21. Carabello, Laura (2001), "E-Procurement can reduce expenses," *Healthcare Financial Management*, 55 (12), 82-84.
 22. Cater, Nick (2001), "E-procurement in the aid business," *International Trade Forum*, Oct-Dec, 27-29.
 23. Coulthard, (2000). *Electronic Procurement in Government: More Complicated Than Just Good Business*.
 24. Cox, Andrew (1994), "Derogation, subsidiarity and the single market:," *Journal of Common Market Studies*, 32 (2).
 25. CPTU, Central Procurement Technical Unit (2003), "Standard bidding documents". www.cptu.gov.bd
 26. CPTU, Central Procurement Technical Unit (2006), *Public Procurement Act 2006* [pdf] Available at: <http://www.cptu.gov.bd> [Accessed 20 May 2011].
 27. CPTU, Central Procurement Technical Unit (2008), *Public Procurement Regulation 2008* [pdf] Available at: <http://www.cptu.gov.bd> [Accessed 20 May 2011].
 28. Croom, Simon (2001), "Restructuring supply chains through information channel innovation," *International Journal of Operations & Production Management*, 21 (504515).
 29. Cunningham, Chris and Caroline Tynan (1993), "Electronic trading, inter-organizational systems and the nature of buyer-seller relationships: The need for a network perspective," *International Journal Of Information Management*, 13 (1), 3.
 30. de Boer, Luitzen, Jeroen Harink, and Govert Heijboer (2002), "A conceptual model for assessing the impact of electronic procurement," *European Journal of Purchasing & Supply Management*, 8 (1), 25-33.
 31. Department of Communications, Information Technology and the Arts (DCITA). (2000). *Commonwealth Electronic Procurement – Implementation Strategy*. Available at: http://www.dcita.gov.au/text_welcome.html.
 32. Dhillon, Gurpreet and Mario Caldeira (2000), "Interpreting the adoption and use of EDI in the Portuguese clothing and textile industry," *Information Management &*

- Computer Security, 8 (4), 184.
33. Doyle, Simon (1995), "Interim report of the electronic commerce working group," National Supply Group.
 34. Emek, U. (November 2001). Kamu Alımlarında Etkin İhale Tasarımı. TUSİAD. Publication No: TÜSİAD-T/2001-11/311.
 35. Erridge, Andrew, Ruth Fee, and John McIlroy (1998a), "European Union public procurement policy and electronic commerce: problems and opportunities," *European Business Review*, 98 (5), 252.
 36. Erridge, Andrew, Ruth Fee, and John McIlroy (1998b), "European Union, public procurement policy and electronic commerce: problems and opportunities," *European Business Review*, 98 (5), 252-59.
 37. Essig, Michael and Ulli Arnold (2001), "Electronic procurement in Supply Chain Management: An information economics-based analysis of electronic markets," *Journal of Supply Chain Management*, 37 (4), 43.
 38. European Union (EU). (April 1997). A European Initiative in Electronic Commerce. COM(97) 157.
 39. Fields, R A (1989), "Two cases for EDI (electronic data interchange)," *Review (Federation of American Health Systems)*, 22 (3), 54-55.
 40. Foong, Soon-Yau (1999), "Effect of end-user personal and systems attributes on computer-based information system success in Malaysian SMEs," *Journal of Small Business Management*, 37 (3), 81.
 41. Foster, M J (1988), "Dreams of EDI (electronic data interchange). They may be about to come true ... at last!," *Health Industry Today*, 51 (11), 22-23, 27.
 42. Garicano, L., Kaplan, S. (2000). The Effects of Business-to-Business E-Commerce on Transaction Costs. Working Paper 8017. National Bureau of Economic Research. Available at: <http://www.nber.org/papers/w8017>.
 43. GOB and World Bank (2006), "Report on Electronic Government Procurement (e-GP) Readiness Assessment".
 44. Goes, James B and Seung Ho Park (1997), "Interorganizational links and innovation: The case of hospital services," *Academy of Management Journal*, 40 (3), 673.
 45. Griffith, D and P Cattroll (2003), "Implementing e-procurement in a UK Government agency," in 12th International IPSERA Conference. Budapest.
 46. Gunyou, J., Leonard, J. (1998). Getting Ready for e-Commerce. *Government Finance Review*. Volume.14, No.5.
 47. Haagsma, Auke (1998), "Information and communication technology issues in international public procurement.," in *Public procurement: global revolution*, Sue Arrowsmith and Arwel Davies, Eds. London: Kulwer Law International.
 48. Halse, D L (1983), "Electronic order entry in hospital purchasing offices," *Hospital*

- Purchasing Management, 8 (4), 3-5.
49. Hampshire County Council and Makgill (2004), Developing an e-Procurement Policy, Ticon UK Ltd,
 50. Hampshire County Council and Makgill (2004), Developing an e-Procurement Policy, Ticon UK Ltd. P-2
 51. Hansen, Bruce (1996), "Electronic data interchange: Exploring the benefits of full-service EDI networks," *Healthcare Financial Management*, 50 (1), 64.
 52. Harink, Jeroen and Gijs Van Rooijen (2002), "Framework for the application of e-procurement theoretical framework properly models the situation at Dutch Railways," in 11th Annual International Purchasing and Supply Education and Research Association. Twente University, Netherlands.
 53. Harland, C, L A Knight, and R Y Sutton (2001), "Information for supply interventions: sector, network and organisation opportunities from e-commerce," in 10th Annual International Purchasing and Supply Education and Research Association Conference. Sweden.
 54. Heeks, R. (Ed.) (1999) *Reinventing Government in the Information Age: International Practice in IT –Enabled Public Sector Reform*, Routledge, London.
 55. Hefner, Frank L. (1996), "State procurement preferences: evaluating their economic benefit," *Spectrum: the Journal of State Government*, 69 (1), 33-36.
 56. Heijboer, Govert and Luitzen de Boer (2001), "Optimal number of tenders in practice," in 10 Annual IPSEERA Conference. Sweden: International Purchasing and Supply Education and Research Association.
 57. Hinson, C. (1999). *Welcome to Public Procurement*. Publication by the National Institute of Government Purchasing. First Edition.
 58. Ho, A.T.K. (2002) *Reinventing Local Governments and the e-Government Initiatives*, *Public Administration Review*, 62, 4, 424-433.
 59. Holmdahl, K. W. (2003) *Electronic Procurement in Public Sector in Sweden*. Swedish Association of Local Authorities. Presented at e-Procurement Experts Working Group of Interchange of Data Between Administration (IDA).
 60. Hope R., D., Lett, B., Luebbers, J., Reilly, B. (May 2000). *Real e-Procurement Savings Do Not Come From Software*. *Electronic Commerce and Extranet Applications Research Note*. Gartner Group.
 61. Hoque, Dr Shah Mohammad Sanaul (2010), "E-Government Websites in Bangladesh: A study on Citizens' Benefits".
 62. Huntley, G, T Shride, M L McLure, and J J Moynihan (1997), "Streamlining the accounts payable function with EDI," *Healthcare Financial Management: Journal of the Healthcare Financial Management Association*, 51 (1), 64, 66-67.
 63. Iacovou, Charalambos L, Izak Benbasat, and Albert S Dexter (1995), "Electronic data interchange and small organizations: Adoption and impact of technology,"

- MIS Quarterly, 19 (4), 465.
64. IEEE Std 830. (1998). IEEE Recommended Practice for Software Requirements Specifications.
 65. Information Technology Infrastructure Library (ITIL). URL: <http://www.itil.nl>. [Last accessed on October 2011].
 66. Institute for Public Policy Research (IPPR). (2003). Report on Public Procurement and Electronic Service Delivery. Available at: <http://www.ippr.org.uk/research/index.php>.
 67. Kalakota, R., Whinston, A. (1997). Electronic Commerce: A Manager's Guide.
 68. Kaplan, R., Norton, D., (1993). "Putting the balanced scorecard to work". Harvard Business Review 71 (5), 134-147.
 69. Kaplan, R.S., Norton, D.P., (1992). "The Balanced Scorecard – Measures that Drive Performance". Harvard Business Review.
 70. Karahan Turan, H. (September 2003). e-Devlet Kapsamında Kamu Alımlarının Elektronik Dönüşümü: Kamu Alımlarında Etkinliğin Sağlanması. Thesis submitted to the SPO. Supervised by Murat İnce. DPT.
 71. Kendall, Jon D., Lai Lai Tung, Khoo Hui Chua, Chia Hong Dennis Ng, and Suan Meng Tan (2001), "Receptivity of Singapore's SMEs to electronic commerce adoption," The Journal of Strategic Information Systems, 10 (3), 223-42.
 72. Knudsen, Daniel (2002), "Uncovering the strategic domain of e-procurement," in 11th Annual International Purchasing and Supply Education and Research Association Conference. Twente University, Netherlands.
 73. Lang, J., (2004). Overview of Electronic Commerce. Class Lectures. Eastern Illinois University. Available at: <http://myphlip.pearsoncmg.com/cw/mpchapter.cfm?vbcid=8105>
 74. Lauer, Thomas W. (2000), "Side effects of mandatory EDI order processing in the automotive supply chain," Business Process Management Journal, 6 (5), 366.
 75. Law, W K and H Ooten (1992), "Electronic data interchange in hospital materiel management," Hospital Materiel Management Quarterly, 14 (1), 46-53.
 76. LeCompte, M. D., Preissle, J., Tesch, R. (1993). Ethnography and Qualitative Design in Educational Research. Academic Press.
 77. Lee, Ho Geun (1998), "Do electronic marketplace lower the price of goods?," Communications of the ACM., 41 (1), 73-81.
 78. Leipold, J. (2003). e-GP World Bank Draft Strategy.
 79. Leverington, M. (2003). e-Procurement Strategy for UK Central Civil Government: The Story So Far. Office of Government Commerce. Presented at e-Procurement Experts Working Group of Interchange of Data Between Administration (IDA).

80. Liao, T. S., M. T. Wang, and H. P. Tserng (2002), "A framework of electronic tendering for government procurement: a lesson learned in Taiwan," *Automation in Construction*, 11 (6), 731-42.
81. Lindgren, L. M. (2001) *Application Servers for E-Business*.
82. Liu, Duen-Ren, I-Chin Wu, and Sung-Ting Hsieh (2001), "Integrating SET and EDI for secure healthcare commerce," *Computer Standards & Interfaces*, 23 (5), 367-81.
83. Malone, T. W. and J. Yates (1989), "The logic of electronic markets," *Harvard Business Review*, 67 (Issue 3), 166.
84. Martin, Stephen, Keith Hartley, and Andrew Cox (1997), "Public purchasing in the European Union: some evidence from contract awards," *International Journal of Public Sector Management*, 10 (4), 297-93.
85. Maxwell, J. A. (1996). *Qualitative Research Design: An Interactive Approach*. Applied Social Research Methods Series. Vol.41. Sage Publications.
86. Maykut, P., Morehouse, R. (1994). *Beginning Qualitative Research: A Philosophic and Practical Guide*. London: The Falmer Press.
87. Mckenna, Cuneo (1993). *Government Procurement under the North American Free Trade Agreement*. NAFTA Papers.
88. McMillan, J. H., Schumacher, S. (1997). *Research in Education: A Conceptual Introduction*.
89. Meier, A., Stormer, H., 2009. *eBusiness & eCommerce: Managing the Digital Value Chain*. Springer-Verlag, Berlin Heidelberg.
90. MetaGroup (IT Consulting Firm). *What is Strategic Purchasing*. Available at: http://www.httpprint.com/epr_what_is.html.
91. Meyer, E (1967), "Electronic data processing benefits both buyer and seller," *Hospital Management*, 103 (6), 107-08.
92. Millman, Howard (1998), "A brief history of EDI," *InfoWorld*, 20 (14), 83.
93. Moodie, Ann Maree (2000), "Public buying [Government buying departments plan on adding on-line auctions to their e-procurement strategies]," *Cfo*, 5 (2), 60-61.
94. Moon, M.J. (2002) *The Evaluation of e-Government Among Municipalities: Rhetoric or Reality*, *Public Administration Review*, 62, 4, 424-433.
95. Mooney, Edmund (1985), "Electronic Transactions," *Systems International*, 13 (9), 22.
96. Mooney, J Lowell and William D Pittman (1996), "A guide to electronic commerce," *Management Accounting*, 78 (3), 43.
97. Moore, J. (2001). *Excellence in Procurement*. Thesis Report. University of Phoenix.
98. MOSICT, Ministry of Science and Information and Communication Technology

- (2010), "National Science and Technology Policy", Government of The People's Republic of Bangladesh.
99. Myers, M. D. (1997). Qualitative Research in Information Systems. MISQ Discovery. Archival version. Available at: http://www.misq.org/discovery/MISQD_isworld/.
 100. mySupplyChain.co.uk. (June 2002). What are B2B Marketplaces?. Available at: http://www.mysupplychain.co.uk/B2B/b2b_introduction.htm.
 101. National Association of State Procurement Officials (NASPO). (2001). State and Local Government Purchasing Principles and Practices.
 102. NC e-Procurement@Your Service. e-Procurement Glossary. State of North Carolina. Available at: <http://www.ncgov.com/eprocurement/asp/section/glossary/Glossary.asp>.
 103. Nishimura, T. (April 2002). Foreign and Domestic Trends in the e-Marketplace. E-Commerce Journal Japan, Available at: http://www.ecom.jp/ecom_e/latest/ecomjournal_no1/topic_02.html
 104. NSW. (1998). Implementation Framework: Integrated Government Electronic Service Delivery and Electronic Commerce.
 105. Office of Government Commerce (OGC). (2002). a Guide to e-Procurement for the Public Sector.
 106. OGC (2009), The Office of Government Commerce, UK. "The government e-procurement policy".
 107. Olav, R. (2003). e-Notification in Norway. DOFFIN: National Procurement Database on the Internet. Presented at e-Procurement Experts Working Group of Interchange of Data Between Administration (IDA).
 108. Ontology.Org Web Site. Chemdex, a Vortex Business. Available at: <http://www.ontology.org/main/papers/cases/chemdex.html>
 109. Oscar, Kenneth J (2001), "A Common E-Commerce Architecture for the Federal Procurement System," *The Public Manager*, 30 (1), 11.
 110. Pascale, R. (1999) Extract from Complexity and the Unconscious, in Henry, J. Creativity, Innovation and Change Media, Milton Keynes: Open University Press, pp. 9-10.
 111. Patton, M.Q. (1987). How to Use Qualitative Methods in Evaluation. Sage Publications.
 112. Patton, M.Q. (1990). Qualitative Evaluation and Research Methods. Sage Publications.
 113. Pearcy, D, L Giuniperob, and L Dandec (2003), "Reverse auction use and the impact of governance structure on supplier co-operation," in 12th International IPSERA Conference. Budapest.
 114. Powell, E., Renner M. (2003). Analyzing Qualitative Data. Program Development

- and Evaluation. University of Wisconsin.
115. Prior, Neale (2003), "State IT program in break-up limbo," in *The West Australian*, 14 January 2003 ed. Perth.
 116. Raghunathan, Srinivasan (1999), "Interorganizational collaborative forecasting and replenishment systems and supply chain implications," *Decision Sciences*, 30 (4), 1053.
 117. Rasheed, Howard S and Scott W Geiger (2001), "Determinants of governance structure for the electronic value chain: Resource dependency and transaction costs perspectives," *Journal of Business Strategies*, 18 (2), 159.
 118. Raymond, Louis and Samir Blili (1997), "Adopting EDI in a network enterprise: the case of subcontracting SMEs," *European Journal of Purchasing & Supply Management*, 3 (3), 165-75.
 119. Reisen, A (2002), "BundOnline 2005: aims and progress," in *European eGovernment 2002*. Brussels: Kable's Electronic Government International <http://www.kablenet.com>.
 120. Ritchie, L (2003), "Exploring the uptake and use of e-commerce in the procurement of pharmaceuticals in hospital pharmacy," in 12th International IPSERA Conference. Budapest.
 121. Roadcap, Casey A, Paul M Smith, and Richard P Vlosky (2000), "EDI and barcoding in the homecenter industry: 1992 vs. 1998," *Forest Products Journal*, 50 (9), 32.
 122. Robinson, B. 2001. Down Payment on e-Procurement. Federal Computer Week.
 123. Schuweiler, R C (1997), "The cost management organization: the next step for materiel management," *Journal of Healthcare Resource Management*, 15 (5), 11-18.
 124. Senge, P. (1999) *The Dance of Change*, Currency Doubleday, New York.
 125. SICT (2005), "Towards an e-Society-Status of e-Government in Bangladesh", Ministry of Planning.
 126. Smeltzer, Larry R. and Amelia S. Carr "Electronic reverse auctions: Promises, risks and conditions for success," *Industrial Marketing Management*, In Press, Uncorrected Proof.
 127. Smith-Gillespie, Roberto and Wayne Wittig (1999), "Working to reform public procurement systems in developing countries and economies in transition," in *Global Purchasing and Supply Chain Strategies*, Elizabeth Cooper, Ed. Vol. October 1999. London: World Markets Research Centre.
 128. Sollish, F. (2000). *The Role of Open Standards in e-Procurement*. NAMP papers.
 129. Spinardi, Graham, Ian Graham, and Robin Williams (1997), "EDI in the Scottish Health Service: inter-organisational systems and inter-organisational change," *The Journal of Strategic Information Systems*, 6 (3), 251-63.

130. Szeman, I (2003), "How far can we digitize?," in 12th International IPSERA Conference. Budapest.
131. Talero, E. (September 2001). Electronic Government Procurement. World Bank Discussion Papers.
132. Talero, E., Carp, T. (2002). A Legal Perspective of Electronic Government Procurement: Country Practices. World Bank Discussion Papers.
133. Taylor, A Jeremy and Christine Tonkin (2002), "Trends and issues impacting on public procurement." Brisbane: Department of Public Works Queensland.
134. Telgen, Jan (2001), "Public procurement goes electronic," in Public procurement goes electronic conference. Brussels: European Public Procurement Group.
135. Teo, Hock-Hai, Bernard C Y Tan, and Kwok-Kee Wei (1997), "Organizational transformation using electronic data interchange: The case of TradeNet in Singapore," *Journal of Management Information Systems*, 13 (4), 139.
136. The Economists. (2000). Quick Fixes. Vol:355.
137. The Enterprise Research Institute (ERI). (November 1998). SMEs and Public Procurement: Lowering Transaction Costs to Increase Participation. UNCTAD Workshop on Procurement. November 5-6.
138. The National Association of Purchasing Management (NAPM). (April 2001). NAPM/Forester Research Report On eBusiness.
139. The National Electronic Commerce Coordinating Council (NECCC). (December 2001). Is the Lack of e-Procurement Standards...A Barrier to Implementation?. Exposure Draft.
140. Timbrell, G (2002), "Return of the JEBI." Hong Kong: Centre for Asian Business Cases.
141. Tonkin, Christine (2002), "Adoption of electronic commerce in procurement: The experience of selected Australian jurisdictions." Brisbane: Unpublished research paper.
142. United Nations Conference on Trade and Development (UNCTAD). (2001). e-Commerce and Development Report. Geneva. Available at: http://www.unctad.org/ecommerce/docs/edr01_en.htm.
143. United Nations Conference on Trade and Development (UNCTAD). (2000). Building Confidence: Electronic Commerce and Development. Geneva.
144. United Nations Development Programme UNDP (2006) Institutional Reform and Change Management: Managing Changing Public Sector Organizations.
145. Vaidya, K., Callender, G., Sajeev, A.S.M., Gao, J., 2004." Towards a Model for Measuring the Performance of e-Procurement Initiatives in the Australian Public Sector: A Balanced Scorecard Approach. AEGC", University of Melbourne.
146. Van Roy, Jan (2001), "The creation of transparency with reversed auctions at Gaz de France," in Public procurement goes electronic. Brussels: European Public

- Procurement Group.
147. Wagnera, S and A Schwab (2003), "Determinants for the success of electronic reverse auctions," in 12th International IPSERA Conference. Budapest.
 148. White, Helen M.F. (2000), "Buyer-supplier relationships in the UK fresh produce industry," *British Food Journal*, 102 (1), 6.
 149. White, S.A., (2004). "Introduction to BPMN". IBM Corporation.
 150. Wichers, Hubertien (2002), "Purchasing processes and efficiencies." Brisbane: Queensland Purchasing.
 151. Woodgate, Stephen G (1992), "Barriers to the diffusion of inter-organisational systems," A dissertation submitted in partial fulfillment of the requirements for the degree of Master of Administration, Griffith University.
 152. World Bank (1999), "Country Procurement Assessment Report for the People's Republic of Bangladesh".
 153. World Bank (WB). (March 2003). Supply and Installation of Information Systems: Single Stage Bidding. Standard Bidding Documents.

Appendix 1: Pilot Questionnaire

Questionnaire for Research on “Challenges of implementing e-GP. Case study-BWDB”

For BWDB Officials (Procuring Entity)

Code: 01/_____

Date: _____

(Please ✓ or write, as appropriate)

1. You are: Procuring Entity Tenderer/Supplier/Consultant None

2. Name of BWDB Office: _____

3. Your Profile:

A. Your name (optional to mention):

B. Designation:

C. Organization:

4. Are you involve with public procurement? Yes No

5. Your total experience in public procurement:
 <1 years 1-5 years >5 years

6. What do you procure mainly? Goods Works Service

7. What kind of document you use for procurement? PPA Others

8. Do you know name of CPTU website? Yes No

9. If Yes, Please mention the name: _____

10. Do you send tender notice to CPTU?
 Yes No Only if tender value is above threshold

11. How do you send tender notice to CPTU (✓ as many applicable)?
 Hardcopy By e-mail By CD I don't send

12. Can you use EXCEL file provided by CPTU to write tender notice? Yes No

13. If yes, do you VALIDATE the excel file after writing tender notice?

Yes Not always No

14. Do you visit CPTU website to CHECK your tender notice?

Yes Not always No

15. Do you PRINT your tender notice from CPTU website?

Yes Not always No

16. Your knowledge level about Electronic Government Procurement (e-GP)

I have clear understanding
I have idea, but need training to know more
I know about, but don't know details
I have no idea

17. Do you know name of website of e-GP? Yes No

18. If Yes, Please mention the name: _____

19. In your opinion, what are the challenges to implement e-GP?

20. Do you need to be registered for e-GP? Yes No Not sure

21. Do you know the procedure of financial transactions in e-GP system?

Yes No Not sure

22. Do you know how to sell tender document in e-GP system?

Yes No Not sure

23. Do you know how to receive tender security/performance security in e-GP system?

Yes No Not sure

24. Do you have any training on e-GP? Yes No

25. Do you have formal training on IT? Yes No

26. If yes, please mention.

27. Do you have computer at office for your own use? Yes No

28. Do you do your official works in computer by yourself?
 Yes No Not usually
29. Do you have adequate internet access? Yes No
30. Can you browse internet? Yes No
31. Are you used to send/receive e-mail by yourself? Yes No
32. Can you attach document with e-mail? Yes No N/A
33. Do you keep your e-mail password confidential? Yes No N/A
34. Is anybody know password of your e-mail address? Yes No N/A
35. Do you have scanner? Yes No
36. Do you have printer? Yes No
39. Do you like e-GP system? Yes No
40. Why:

Declaration: *This Questionnaire has been prepared for the purpose of dissertation project as partial requirement of Master in Procurement and Supply Management program run by the Institute of Governance Studies (IGS) of BRAC University, and will be used only for academic purpose.*

Syed Rafiqul Alam
 Student ID# 12282003
 IGS, BRAC University
 Dhaka

Thank You

Appendix 2: Final Questionnaire

Questionnaire for Research on “Challenges of implementing e-GP. Case study-BWDB”

For BWDB Officials (Procuring Entity)

Code: 01/_____

Date:

(Please ✓ or write, as appropriate)

1. You are (designation): S E Executive Engineer SDE/Assit. Engineer

2. Name of BWDB Office: _____

3. Your name and cell no. (optional to mention):

4. Do you have experience in public procurement? Yes No

5. Your total experience in public procurement:
 <1 years 1-5 years >5 years

6. What do you procure mainly? Goods Works Service

7. What kind of document you use for procurement? CPTU IDA
Others

8. Do you know name of CPTU website? Yes No

9. Can you use EXCEL file provided by CPTU to write tender notice? Yes No

10. If yes, do you VALIDATE the excel file after writing tender notice?
 Yes No Not applicable

11. Do you visit CPTU website to CHECK your tender notice?
 Yes Not always No

12. Do you PRINT your tender notice from CPTU website?
 Yes Not always No Not applicable

13. Your knowledge level about Electronic Government Procurement (e-GP)
 I have clear understanding
 I have idea, but need training to know more
 I know about, but don't know details
 I have no idea

14. In your opinion, what are the challenges to implement e-GP?

15. Do you know how to sell tender document in e-GP system?
 Yes No Not sure
16. Do you know how to receive tender security/performance security in e-GP system?
 Yes No Not sure
17. Do you have any training on e-GP? Yes No
18. Do you have computer at office for your own use? Yes No
19. Do you do your official works in computer by yourself?
 Yes No Not usually
20. Do you have adequate internet access? Yes No
21. Are you used to send/receive e-mail by yourself? Yes No
22. Is anybody know password of your e-mail address? Yes No N/A
23. Do you have printer? Yes No
24. Do you like e-GP system? Yes No
25. Why:

Declaration: *This Questionnaire has been prepared for the purpose of dissertation project as partial requirement of Master in Procurement and Supply Management program run by the Institute of Governance Studies (IGS) of BRAC University, and will be used only for academic purpose.*

Syed Rafiqul Alam
 Student ID# 12282003
 IGS, BRAC University
 and
 System Analyst, BWDB, Dhaka

Thank You