Analyzing Public Procurement Process Operational Inefficiencies In Bangladesh: A Study On Department Of Public Health Engineering (DPHE)

A Dissertation
by
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Master in Procurement and Supply Management

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January 2016

Dedicated

To

My Son

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DECLARATION

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ABSTRACT

Government is implementing e-GP to improve transparency and efficiency in Public Procurement. As a Government Organization, Department of Public Health Engineering (DPHE) is using e-GP in procurement activity to ensure transparency and accountability of using public fund. It is a great responsibility for the Executive Engineers to ensure utilization of public funds properly. Failure in Procurement process operation may increase cost and time and slow down development of Bangladesh. In DPHE, Executive Engineers act as Procurement Entities and Assistant Engineers & Sub-assistant Engineers participate in evaluation and tender opening process as members. Most of the Sub-Assistant Engineers have lacked computer literacy and not all Assistant and Sub-Assistant Engineers have computer and internet facility. Evaluating the inefficiencies in procurement process operation will help to identify the knowledge gaps and will help to mitigate the issues identified. Qualitative Research was conducted to address the research questions. The study was limited on the Executive Engineers of Department of Public Health Engineering (DPHE) due to time constrain. After analyzing the interviewed documents it was found that all respondents talked about Server Incapability, Unplanned Training, and troublesome BOQ uploading process as Procurement Process Operation inefficiency. Other inefficiencies were Supplier Selection failure due to Corrupted File Upload, Lengthy Document Verification, lack of knowledge, lack of logistics Support and reinventing the wheel for two tenders having same documenting. Generally causes behind these inefficiencies were uncertain server downtime, unplanned training, lack of training database, lack of motivation, lack of computer literacy, lack of computer availability and internet facility, absence of conversion software, lengthy manual evaluation. The consequences of these inefficiencies were lengthy procurement cycle, extra workload on Procuring Entities, tender opening failure leading to extra added step like time extension approval in procurement cycle, lack of confidence, Lack of reliability of work , slowness of procurement activity, typing error, extra step of corrigendum for correcting typing error, lack of competition and litigation issue, prolonged tender preparation time, violation of code of ethics, risk of erroneous and biased evaluation and litigation problem and added extra cost and time in tender preparation. The mitigation of these inefficiencies include controlling number of tenders to be floated in e-GP system each year, upgrading server, planned training, proper motivation and use of reward power, developing a cloud document verification and storage system, implementing Central Technical Support Service at DPHE and ensuring computer and internet facilities.

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LIST OF ABBREVIATIONS

AA	Approving Authority
AO	Approving Officer
APP	Annual Procurement Plan
BDT	Bangladesh Taka
CCGP	Central Committee on Government Purchase
CPTU	Central Procurement Technical Unit
DoFP	Delegation of Financial Power
DPHE	Department of Public Health Engineering
EC	Evaluation Committee
e-GP	Electronic Government Procurement
FMCG	Fast Moving Consumer Goods
GCC	General Conditions of Contract
GoB	Government of Bangladesh
HOPE	Head of Procuring Entity
LGED	Local Government Engineering Department
NOA	Notification of Award
PCC	Particular Condition of Contract
REB	Rural Electrification Board
PP	Procurement Planning
PE	Procuring Entity
PPA	Public Procurement Law
PPR	Public Procurement Rule
REB	Rural Electrification Board
RHD	Roads and Highways
SAE	Sub-Assistant Engineer
STD	Standard Tender Document
TD	Tender Document
TOT	Training of Trainers
TS	Tender Security
WDB	Water Development Board

1. INTRODUCTION

1.1 Introduction

Government is aiming to implement e-Governance as a part of VISION 2021 implementation plan within 2021 (Planning Commission 2012). e-Governance is complete delivery of service and information using electronic devices. To ensure e-Governance in public procurement, Government of Bangladesh (GoB) is implementing e-GP in public procurement sector since 2011. To improve economy and transparency, in 2011, Government has introduced Electronic Government Procurement (e-GP) rolling out among 4(four) public sector organizations: Bangladesh Rural Electrification Board (REB); Bangladesh Water Development Board (BWDB); Local Government Engineering Division (LGED); Roads and Highways (RHD) that consumes majority of Government Development Budget. Further it has been extended to 96 agencies of 24 ministries of Bangladesh. In the fiscal year of 2014-2015, a total of 16952 tenders were invited through e-GP. The number of tenderers registered with the system during the period was 6217 and training on e-GP was provided to both procuring entities and tenderers totaling 830 (Hossain, 2015). Annual Development Budget of Bangladesh for Financial Year 2015-2016 is 100996.92 Crore BDT (Planning Commission 2015). Public procurement expenditure constitutes over 70% of the annual development program in Bangladesh; thus procurement plays an important role in the development agenda of the Government. It is well-documented that weaknesses in public procurement have a cumulative negative effect on investment and economic growth (World Bank 2014). e-GP has increased competition, enhanced transparency and improved efficiency. A digital culture has emerged in the local level, opening new opportunity of computer literate workforce. e-GP is bringing substantial savings to our national resources by paving a new way of doing business in the private sector. e-GP system is conducted in single web portal from beginning to end of procurement cycle from advertising to contract completion. Tenderers no longer need to do troublesome paperwork or physical energy to drop tender. Tenders are submitted via the web from anywhere of the world 24hours a day, 7 days a week that open, evaluated and awarded online. When a contract is awarded, detail of the winner, the number of tenders and the value of the contract are all published in the e-GP web portal. Performance of the procurement system are measured with indicators electronically. Within 2021, it is aimed to make 100% public procurement online (Hossain, 2015).

Department of Public Health Engineering (DPHE) is responsible for ensuring drinking water supply and waste management in the country except Dhaka, Narayanganj and Chittagong cities

where WASAs operate. As a public agency, it follows the public procurement rules for its purchasing of works, goods and services. In 2015-2016 financial year, total allocation for Annual Development Programme (ADP) is 2045.4 million BDT and majority of this figure is used to procure goods, works and/or services. HOPE (Chief Engineer of DPHE) suggests to use e-GP for any procurement below 500 million BDT. Spending of this amount impose accountability, transparency and compliance issue. Since it is a great responsibility for the Procuring Entities/ Executive Engineers to ensure utilization of public funds properly and smooth completion of procurement, understanding of the threats related to the procurement process is very important. Procurement process failure by the Procuring Entities (PE) may lead to some negative scenarios:

1. Overall procurement cost may increase.
2. Delay in procurement may increase accusation cost of product whether goods, work or service. Due to budget constraint Procuring Entity (PE) may force to write new specification that denotes lower quality than before.
3. Slow the development work of DPHE as well as of Bangladesh. This ultimately slows the implementation of VISION 2021.

So it is very important for the Procurement Entities to understand the treats and risks in the procurement process and act accordingly to procure goods, works and services at right price, at right time, with right quality and/or quantity and from right source and ultimately achieve value for money.

1.2 Statement Of Problem And Rationale Of The Study

In the Financial Year 2015-2016, Annual Development Programme (ADP) for DPHE is 2045.4 million BDT and major portion is to be used for procurement of goods, works and services. Success of ADP implementation depends on the success of procurement process in compliance with PPA and PPR. Moreover, Mahmud (personal communication by mobile phone, 25th January, 2016) confirmed that HOPE of DPHE (Chief Engineer) had signed a government order for ensuring maximum use of e-GP for procurement of goods, works at estimated value below 500 million. In DPHE, Executive Engineers, Assistant Engineers and Sub-assistant Engineers are involved in conducting Electronic Government Procurement (e-GP). Executive Engineers act as Procurement Entities and Assistant Engineers & Sub-assistant Engineers participate in evaluation and tender opening process as members. All the Executive engineers

and most of the Assistant Engineers have completed 3(three) weeks PPR training and 1(one) week e-GP training organized by CPTU, but no proper training has been organized by DPHE to develop their IT expertise. Knowledge level and IT expertise to do procurement activity by the Sub-Assistant Engineers are not up to mark. This may put procurement opening and evaluation at risk. Moreover, all the offices of DPHE are not fully equipped with computer and internet connectivity. In addition to that no study has been conducted before to evaluate procurement process operation inefficiencies. Evaluating the inefficiencies will help to identify the knowledge gaps and will help to mitigate the issues identified. This would help to increase the success rate of procurement and reduce the cost, quality, time, and compliance and litigation risk.

1.3 Objective

The study intends to know the inefficiencies in procurement process operation in e-GP system. Whole study is focused on Department of Public Health Engineering (DPHE). The specific objectives are:

(1) Identify inefficiencies and causes & consequences of these inefficiencies in procurement process operation in e-GP.
(2) Address mitigation measures to improve procurement success.

1.4 Research Question

a) Is there any operational inefficiencies found by the Procuring Entities while working in e-GP system?
b) What are the consequences these inefficiencies?
c) What measures can be taken to mitigate these inefficiencies?

1.5 Scope

The scope of study is limited to understand the inefficiencies, their causes and consequences of Procurement process operation in e-GP system. The target public sector organization is Department of Public Health Engineering (DPHE) and stakeholder are limited to only Executive Engineers as they act as Procuring Entities at District Level.

 In e-GP, at present, procurement process involves e-APP approval, e-Tender Preparation, e-Tender Issue, Receipt and Process, e-NOA. Inefficiencies are evaluated against these processes.

1.6 Limitation of the Study

- e-GP itself has some limitations. They are:

  1) e-Contract management has not started yet. So, this is out of e-GP scope now.

  2) Service procurement is not yet included in e-GP system.

  3) Procurement of works and goods above 500 million are beyond e-GP scope now.

  Considering this limitation only goods and works below 500 million can be procured using e-GP.

- Only one Organization is considered: DPHE.

- Due to time limitation only Executive Engineers are considered and other stakeholders specially suppliers or tenderers are ignored.

2. LITERATURE REVIEW

2.1 Procurement: Definition

The word procurement is a noun. According to dictionary.com, procurement means the act of procuring, or obtaining or getting by effort, care, or the use of special means. Again in the businessdictionary.com, procurement is defined by the act of obtaining or buying goods and services. Wikipedia.org also defined procurement as an act of acquiring, buying goods, services or works from an external source. So Procurement means: *"the purchasing or hiring of Goods, or acquisition of Goods through purchasing and hiring, and the execution of Works and performance of Services by any contractual means"* (Fineurop-ESCB, 2011a; e-GP Guidelines, 2011). A more elaborate definition of procurement is given by Lysons & Farrington: *"Procurement is the process undertaken by the organizational unit that, either as a function or as part of an integrated supply chain, is responsible for procuring or assisting users to procure, in the most efficient manner, required supplies at the right time, quality, quantity and price, and the management of suppliers"* (Lysons & Farrington, 2006).

Finally reviewing above definitions, a working definition of procurement can be an act or process of purchasing or hiring goods, works or services or any combination by an organizational function or unit in the most efficient manner at the right time, quality, quantity and price, and the management of suppliers.

2.2 e-Procurement: Definition and Characteristics

2.2.1 History

E-Procurement was first introduced in the early 1980 with the progress of electronic data interchange (EDI). This helps buyers and sellers, most often in the FMCG, to send and receive orders and invoices via secure store and call forward networks. These EDI systems allowed businesses to exchange and synchronize master data files on product types, product cost, product price, product specification and product related information about each other's locations and trading practices. In 1990's internet based software became available and software developer companies began to develop buyer managed electronic catalogues for use by vendors. As the catalogues became outsourced, software companies started to offer the same catalogues to a number of buyers. Another development in e-Procurement that arose at a similar time was the explosion of e-marketplaces which covered some of the electronic trading needs of certain industries, such as automotive and aircraft. These act as a virtual market place for suppliers, distributors, agents and customers.

2.2.2 Definition

According to CIPS, e-procurement is:

"*The combined use of electronic information and communications technology (ICT) in order to enhance the links between customer and supplier, and with other value chain partners, and thereby to improve external and internal processes. E-Procurement is a key component of e-business and e-commerce.*" (CIPS, 2013)

Again according to PETRONAS:

"*e-Procurement (electronic procurement, sometimes also known as supplier exchange) is the business-to-business or business-to-consumer or Business-to-government purchase and sale of supplies, work and services through the Internet as well as other information and networking systems, such as Electronic Data Interchange and Enterprise Resource Planning*". (PETRONAS, 2014)

Beyond these two, other resource are reviewed for definition and following are found:

Source	Definition of e-Procurement
Minahan 2001	"*The process of utilizing web-based technologies to support the identification, evaluation, negotiation and configuration of optimal groupings of trading parties into supply chain network, which can respond to changing market demands with greater efficiency*"
Byatt 2001	"*The electronic management of all procurement activities: it is the use of web communications to 'e-enable' your purchasing process and strategy, and part of wider 'e-commerce' solution*"
Tatsis et al 2006	"*The integration, management, automation, optimization and enabling of an organization's procurement process, using electronic tools and technologies, and web based applications*"

Table1: Definitions of e-Procurement from various journals.

So reviewing above mentioned definitions, a simple working definition of e-Procurement is performing whole procurement using electronic tools and technologies and web based applications.

2.2.3 Components of e-Procurement

Electronic Tendering follows normal tendering procedures, except documents are electronic and communications are via the Internet. The following sub-phases of the electronic procurement process could be identified:

e-Sourcing: Preparatory activities conducted by the contracting authority/entity to collect and reuse information for the preparation of a call; potential bidders may be contacted, if admitted by the legal rules, by electronic means to provide quotations or manifest interest.

e-Noticing: Advertisement calls for tenders through the publication of appropriate contract notices in electronic format in the relevant Official Journal; electronic access to tender documents and specifications as well as additional related documents are provided in a non-discriminatory way.

e-Access: Electronic access to tender documents and specifications as well support to economic operators for the preparation of an offer, e.g. clarifications, questions and answers.

e-Submission: Submission of offers in electronic format to the contracting authority/entity, which is able to receive, accept and process it in compliance with the legal requirements.

e-Tendering: The union of the e-Access and e-Submission phases.

e-Awarding: Opening and evaluation of the electronic tenders received, and award of the contract to the best offer in terms of the lowest price or economically the most advantageous bid.

e-Contract: Conclusion, enactment and monitoring of a contract / agreement through electronic means between the contracting authority/entity and the winning tenderer.

e-Orders: Preparation and issuing of an electronic order by the contracting authority/entity and its acceptance by the contractor.

e-Order Status: Preparation and delivery of status information against the e-Order.

e-Invoicing: Preparation and delivery of an invoice in electronic format.

e-Payment: Electronic payment of the ordered goods, services or works

2.3 Electronic Government Procurement (e-GP)

In its broadest sense, the term e-GP refers to the use of electronic systems to handle any or all steps of public procurement process, but several formal definitions also exist. According to the

World Bank (2003), e-GP is defined as: "*the use of information technology (especially the internet) by governments in conducting their procurement relationships with suppliers for the procurement of works, goods, and consultancy services required by the public sector*." The World Bank further defies e-GP under the headings e-tendering and e-purchasing. An e-tendering solution is used for procurement of specialized works, goods and services, characterized by high-value and low-volume transactions. Procurement of standard goods and services is addressed using an e-purchasing solution, characterized by low-value and high-volume transactions. The European Union (EU) offers a similar definition, specifically distinguishing procurement by "*government institutions and other public sector organizations*" (European Commission, 2004). Other e-GP definitions have a greater focus on process and refer to the introduction of information and communications technology (ICT) and transaction processing throughout the procurement chain, including the following phases of procurement: "*publication of tender notices, provision of tender documents, submission of tenders, evaluation, award, ordering, invoicing and payment*" (European Commission, 2010). The handling of all procurement processes—fully electronic and integrated—is referred to as end–to-end e-procurement or straight-through e-procurement. Implementation of straight-through e-procurement is difficult to achieve (Vaidya et al., 2006) and is often referred to as the "ultimate prize" (European Commission, 2010) that various jurisdictions strive to achieve.

The term e-government procurement (e-GP) broadly refers to the use of electronic systems to handle any or all steps of the public procurement process. Many governments across all regions of the world have embarked on implementation of e-GP and worldwide adoption is increasing. Government procurement accounts for a significant percentage of the economy, meaning dollar value savings from implementation of e-GP can be considerably high. Common misconceptions about e-GP are also dispelled, such as e-GP does not necessarily lead to job losses, nor does it take away discretionary powers assigned to officials. Key challenges related to e-GP implementation are identified and explained. It should be noted that the full potential of e-GP will only be realized when implementation is accompanied by procurement reforms.

The Republic of Korea, Singapore, and a handful of other countries have had success in implementing straight-through e-procurement. Elsewhere, only one or more stages of public procurement are handled using electronic systems, such as (i) publication of tender documents through a web portal (e-publication), (ii) electronic submission of bid documents by suppliers (e-tendering), and (iii) vendor selection and transaction processing based on electronic catalogs (e-catalogs). Government agencies tend to use ICT to handle one or more procurement steps

initially, and then roll out the application of ICT to include additional steps in a phased manner over time. With time, the functional coverage of e-GP tends to expand toward end-to-end coverage. An end-to-end e-GP system typically has an enterprise web portal that primarily addresses the requirements of the supplier community. This portal is tightly integrated with an enterprise application system, designed to handle procurement-related workflows within the government (Vaidya et al., 2006). A fully implemented e-GP system has both government-to-business (G2B) and government-to-government (G2G) system components knitted together

2.4 Bangladesh e-GP system overview
2.4.1   Overview

Bangladesh has very recently reformed its legal and institutional framework governing public procurement. Since the adoption of privatization as an economic policy reform in 1976, public procurement by contractual means in Bangladesh has been increasing day by day. Public procurement in Bangladesh including government's activities of purchasing, hiring or obtaining of goods, works or services by any contractual means. Various government agencies or procurement entities, especially the ministries, divisions, departments/directorates and other autonomous/semi-autonomous bodies or corporations in Bangladesh often acquire/purchase goods, services or works by contractual means. Although limited tendering method or direct procurement method can be used for some specific reasons, procurement and contracts in Bangladesh often take place through open competitive biddings. Corruption and poor governance are impeding Bangladesh's efforts to reduce its massive poverty by reducing economic growth and lowering the achievement of social objectives. Corruption destroys citizens' faith in their government. Economic growth is essential to reduce poverty; however, corruption slows economic growth.

Bangladesh is encouraged to pursue its plans to pass the constitutive elements of its procurement framework at the level of a parliamentary law. An amendment to a law is designed to remove the lacunas of existing law and find the way to implement the provision more effectively. However, unfortunately the recent amendment introduced to the public procurement rule (PPR) would perhaps put a damper on a vital front of governance. Corruption, terrorism and mismanagement in the public purchase are the common scenario for the last decades. Mishandling and mismanagement of public procurement in absence of a uniform law contributed largely to the situation. Reforms in the public sector procurement and finance were initiated during the previous regime of all government. Later on the laws were passed in 2006.

However, public procurement act (PPA) and Public Procurement Rule (PPR) were made effective during the caretaker government in 2008. It has been modernized and brought to international standard through the enactment of successive law and rules (Mahmood, 2010). Public procurement reforms are a crucial building block in improving public sector management, governance and accountability. Public procurement expenditure constitutes over 75% of the annual development program in Bangladesh; thus procurement plays an important role in the development agenda of the Government. It is well-documented that weaknesses in public sector procurement have a cumulative negative effect on investment and economic growth. Poor public procurement skews investment toward areas where rent-seeking is prevalent, rather than toward the areas that need it more for poverty reduction and development.

The PPRP II follows up the successes of PPRP I to progressively improve performance of the public procurement system, particularly focusing on large spending areas, ministries and agencies. After piloting, the PPRP II has been rapidly expanding the electronic procurement (e-GP) and online procurement performance monitoring systems (PROMIS) in four key government agencies, namely the Roads and Highways Department, the Local Government Engineering Department, the Bangladesh Rural Electrification Board and the Bangladesh Water Development Board. Electronic procurement makes public contracting more accessible, more secure and more efficient, thereby enhancing the implementation of priority development programs. Through the web interface, procurement information becomes accessible and competition and transparency are enhanced making collusive bidding difficult (Word bank, 2011).

National e-Government Procurement (e-GP) portal of the Government of the People's Republic of Bangladesh is developed, owned and has been 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 a single web portal from where and through which PAs and PEs will be able to perform their procurement related activities using a dedicated secured web based dashboard. The e-GP system is hosted in e-GP Data Center at CPTU and the e-GP web portal is accessible by the PAs and PEs through online for their use (www.cptu.gov.bd).

This complete e-GP solution introduced under the Public Procurement Reform (PPR) Program is being supported by the World Bank and gradually used by all government organizations.

This online platform also helps them ensuring equal access to the Bidders/Tenderers and also ensuring efficiency, transparency and accountability in the public procurement process in Bangladesh.

The government has sought opinions from all ministries to finalize e-government procurement (e-GP) system, which is expected to minimize traditional meddling in bidding processes by musclemen. The countrywide major development projects are conducted by different agencies starting from the Prime Minister's Office to local government entities. The CPTU is responsible for monitoring and implementing the law and rules in public procurement. The entity thinks that if the government goes for an online bidding process, no one can exert or show muscle power.

e-Government procurement (e-GP) as the collaborative use of Information and communications technology (especially the Internet) by government agencies and other sectors of procurement community in conducting all activities of Government Procurement Process Cycle (GPPC) for the acquisition of goods, works, and consultancy services with enhanced efficiency in procurement management. It would also connect the government body and the national and international contractors on an online platform, which automates the entire government's procurement process by introducing centralized registration of contractors, e-tendering, e-contract management system, e-payment, e-signature and e-security (www.eprocure.gov.bd).

The amount of government procurement of Bangladesh is approximately US $5.0 billion per year. Each department and public sector entity has its individual manuals and procedures. Project Implementations are often delayed due to the delay in procurement activities of goods or services or works. Hence, the need for improved governance in public sector procurement has been arisen. The e-GP guidelines were approved by the Government of the People's Republic of Bangladesh in pursuant to Section 65 of the Public Procurement Act, 2006. As per approved guidelines, e-GP system has been introduced and implemented. The e-GP system has been developed and introduced in two phases. (Khatungonj Theke Motijheel, 2015)

In the first phase, e-Tendering has been introduced on pilot basis in the CPTU and 16 other Procuring Entities (PEs) under 4 (four) sectorial agencies, namely: Bangladesh Water Development Board (BWDB), Local Government Engineering Department (LGED), Roads and Highways Department (RHD) and Rural Electrification Board (REB). The system rolled

out to 291 PEs of those 4 sectorial agencies is now expanding to all the PEs of the government up to Districts and sub-Districts or upazila level.

The system rolled out to 291 PEs of those 4 sectorial agencies is now expanding to all the PEs of the government up to Districts and sub-Districts or upazila level. In the second phase, e-Contract Management System (e-CMS) has been developed and introduced and implemented. E--CMS is a complete electronic contract management system which provides platform for preparation of work plan and its submission; defining milestone, tracking an monitoring progress, generating reports, performing quality checks, generation of running bills, vendor rating, generation and issuance of completion certificate (wwweprocure.gov.bd).

The e-GP System has been implemented in two phases:

1. e-Tendering System: Covering complete e-Tendering processes such as centralized user registration, preparation of Annual Procurement Plan (APP), preparation of Bid\Tender document, preparation of Bids/Tenders, invitation of Tenders, sale of Tender Documents (e-TD), conducting online pre-bid meeting, collection of bid\Tender security, on-line Bid\Tender submission, Bid opening & evaluation, negotiations (where applicable), and contract awards.

2. e-Contract Management System (e-CMS): Covering complete e-Contract Management processes, such as preparation of work plan and its submission, defining milestone, tracking and monitoring progress, generating reports, performing quality checks, generating running bills, vendor rating and generating completion certificate.

e-Tendering and eCMS (eGP) is launched successfully on pilot basis and eventually being rolled out to all PEs of four Sectoral Agencies, namely Bangladesh Water Development Board (BWDB), Local Government Engineering Department (LGED), Rural Electricity Board (REB) and Roads and Highways Department (RHD). It is now expanding to all government procuring entity dealing with public procurement.

All the stakeholders, including Bidders/Tenderers / Applicants / Consultants (National and International), PEs, procurement related Committees, payment service providers, Development Partners (DPs), media, Operation, Maintenance and Management Entity (OMME), e-GP system administrators, auditors and general public are getting access to e-GP system and information as per the Terms and Conditions of Use and Disclaimer and Privacy Policy.

The e-GP system shall be used by all concerned, for procurement of goods, works and services using public fund, following the 'Government Procurement (e-GP) Guidelines' prepared under the provision of Section 67 of the PPA -2006 and Rule 128 of PPR-2008.

2.4.2 Key Functionalities of e-GP system

1. Centralized Registration System

(Contractors/Applicants/Consultants, Procuring Entities and other actors of e-GP)

- Centralized Tenderer /Consultant registration
- Procuring Entity (PE) registration
- Media Registration
- Payment service provider's registration
- Development partner's registration

2. e-Tendering (e-Publishing/e-Advertisement, e-Lodgment, e-Evaluation, e-Contract award) System

- Annual Procurement Planning (APP) preparation and publishing
- Standard Tender Document (STD) Library
- Preparation and publishing Invitation to Tender
- Preparation and publishing Tender Document
- Online Pre-Tender Meeting
- Publishing Tender Corrigendum / Addendum / Amendment
- Online Tender / Application / Proposal preparation by Tenderers / Applicants / Consultants
- Online Tender Submission / Tender Substitution / Tender Withdrawal
- Online Tender Opening
- Online Tender Evaluation by Technical Committees
- Post Qualification
- Online Negotiations
- Issuance of Notice of Award (NOA)/ LOI
- Online Contracts

3. Procurement Management Information System (PROMIS)

- Compliance monitoring through key procurement performance indicators
- MIS reports

4. *Workflow management System*

5. *e-Contract Management System (e-CMS)*

   - Work Plan Submission

   - Progress Report generation, submission / acceptance

   - Defining Payment Milestones

   - Running Bill Payment Processing

   - Variation Order / Repeat Order

   - Quality certification

   - Work Completion Certificate

   - Final Payment

   - Supplier Rating

   - Complaint and resolution database

6. *e-Payment System*

   - Registration Fee, Tender document purchase fee, and other services fee Collection

   - Receive Tender Security and performance security submission

   - Transactions for security release and forfeiture handling

7. *System and Security Administration*

   - E-Signature (Generation of Hash/Signature)

   - PKI based digital signature

   - Bid Encryption/ Bid Decryption

   - 128 Bit SS

8. *Handling Errors and Exceptions*

9. *Application Usability & Help*

   - Integrated Inbox / Message Box

   - Integrated e-Mail / SMS Gateway

   - Dashboards for Procurement Performance Monitoring

   - Manuals for all users

   - Help desk support

2.5 e-GP system user agreement terms and conditions

National e-Government Procurement (e-GP) portal (i.e. http://eprocure.gov.bd) of the Government of Bangladesh is developed, owned and operated by Central Procurement Technical Unit (CPTU), IMED, Ministry of Planning for carrying out the procurement

activities of the public agencies (procuring agencies and procuring entities) of the Government of Bangladesh. CPTU / IMED also runs a training server (http://training.eprocure.gov.bd) to allow the users to try and learn by themselves all the functionalities of e-GP system through an online mock-up of real transactional e-GP System. Users may try all activities, which is available in real transaction system. None of the activities done in training servers will be taken as real transactions. For carrying out the real procurement transactions, users must use the National e-Government Procurement (e-GP) portal at http://eprocure.gov.bd or simply http://eprocure.gov.bd User account will be created only when the following Terms and Conditions of e-GP System User Agreement is read and accepted. For accessing and using this e-GP user services, you shall be deemed to have accepted to be legally bound by these Terms and Conditions of Use and comply with all of the Terms and Conditions given below, and the guidelines as stipulated in e-Government Procurement Guidelines:

2.5.1 Email verification:

Your email will be used as the user name for accessing e-GP System. Upon submission of your basic user identity information opened by clicking on the "New User Registration" button from the home page of e-GP Portal, you will receive in the email provided by you, an email from system@eprocure.gov.bd with a link to click, your unique security key, and other instruction related to your credential documents verification, and payment process. When you click the link provided in your email, an email verification page with a form will open. You need to enter the email, password and the received security key, and Press the 'Submit' button. If you correctly enter the information, this process will complete the email verification process successfully. With that your account will be successfully created, and you will be displayed another form for entering your specific information, upload digitally scanned mandatory credential documents (scanned documents of Company registration Certificate, Tax and VAT clearance certificate, Valid Trade license, National ID of Contact Person, must be easily readable).

2.5.2 Credential documents verification:

Tenderers, Applicants and Consultants may visit 'e-GP Users Registration Desk' in CPTU / IMED, Ministry of Planning, Sher-e-Bangla nagar, Block# 12, Floor# 2 with the original credential documents used during online registration process or send the documents via registered post or courier service for the post-verification for authenticity. Tenderers, Applicants and Consultants also must include envelope return address written or typed, and with required postal stamp or bank draft in the name of Director General, Central Procurement

Technical Unit (CPTU). The verification process may take one day to two weeks. After verification of the original credential documents, Tenderer, Applicants and Consultants gets the Confirmation email notification of registration and will instantly get full access to secured personal dashboard for user specific functions of the e-GP system as the e-GP System User. Procuring entities, Development partners, Payment network partners (Banks and others), and media will be registered through official communication with CPTU, IMED, Ministry of Planning.

2.5.3 Maintaining confidentiality:

Users are responsible for maintaining the confidentiality of their password and are fully responsible for all activities that occur using your account (email ID and password). E-GP system does not store user passwords, but it will store only the generated irreversible hash value of the password as e-Signature. User must notify CPTU (admin@eprocure.gov.bd) of any unauthorized use of your password or any other suspected security breaches. Users must ensure that they appropriately log-out every time from their unattended computers or from the computers you are using in public places. CPTU is not liable for any loss or damage arising from such compromise of your user account and password. The e-GP System allows modifying, updating their user details including password. But it does not allow to change the login email ID and the name of the company provided during registration process.

2.5.4 Internet Browser and Users Computer compatibility:

To access the e-GP System securely, users should use appropriate web browsers and their associated security settings. However because of the rapid development of new browsers and new security measures come up frequently, users need to update or install new components and configuration settings as and when these come into effect. Current version of e-GP system can be best viewed at Internet Explorer 8 or above (IE8+) versions and Mozilla Firefox 3.6 or above. Users are responsible to comply with the hardware, software requirements of the computer systems, and also uninterruptible Internet connectivity with sufficient bandwidth required to operate, upload and download documents in e-GP System. CPTU, IMED, Ministry of Planning is not responsible for non-compliance for the above by user.

2.5.5 Applicable Time:

The e-GP System shall use the e-GP Data Center server time as the reference time for all time-bound activities of procurement processes. E-GP Data Center is located in CPTU / IMED, Ministry of Planning, Dhaka, Bangladesh.

2.5.6 Proprietary Rights:

This e-GP Portal is developed and maintained by the Central Technical Procurement Unit (CPTU), IMED, and Ministry of Planning of the Government of Bangladesh. The materials located on this e-GP web portal including the information and software programs (source code) are copyrighted to CPTU, IMED, Ministry of Planning, the Government of Bangladesh, and operating system, tools, and other software and contents used for the operation of e-GP Portal are licensed to or controlled by CPTU, IMED, Ministry of Planning, the Government of Bangladesh.

2.5.7 Auto alert and User Dashboard Inbox:

Users may choose to select automatic alert services through the configuration in preference section of their dashboard. Each auto alert will be sent to users via preferred channel (i.e. email or SMS), and by default same will be seen in the users' inbox available in their e-GP Dashboard. If the user does not receive auto alerts because of some third party component or system failure or for any other reason, the users must check their inbox for such alerts/notifications and communications.

2.5.8 Registration charges:

Tenderers/Applicants/Consultants will be charged Tk. 5000 for the user registration, and annually it should be renewed. Tk. 2000 will be charged each year for renewal of their account. 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). Users must make sure the amount is deposited to CPTU designated Account, or send bank draft in the name of Director General, Central Procurement Technical Unit (CPTU) before membership expires. Users may be charged and/or waived specified amount of money for different categories of use including Registration, Subscription and periodic renewal, additional storage space, transactions, facilities to use specific features/modules of the e-GP System and different services from the Operation, maintenance and management entity. CPTU / IMED 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. CPTU/IMED will publish a public notice if any changes on the charges, waiver.

2.5.9 Tender Submission:

The Tenderers / Applicants / Consultants are responsible to plan their time sufficient to complete the documents upload, third party transactions like Tender security preparation and submission through banks, verify completeness of tender, and final submission of tenders documents for the specific tenders. Before final submission, the Tenderer / Applicant / Consultant may upload documents, fill-in required online forms, modify and verify the documents, and complete other activities part by part. But attempt to submit incomplete tender will not be allowed by the e-GP System.

2.5.10 Payment process:

Until the e-Payment infrastructure is available in Bangladesh, the e-GP System uses the method to use the service of scheduled banks. Scheduled banks and other payment service providers get secured access to the e-GP System with their own dedicated and secured Dashboard, from where, the banks can carry out the financial transactions related to public procurement collecting fees and charges, providing guarantees, tracking the guarantees, making payment transactions, and other service fees, etc. Tenderers / Applicants / Consultants should pay to Bank the required amount of money for the specific purpose of transaction with e-GP System. Bank will collect the charges and fees from Tenderers crediting the account opened by CPTU for specific service/transaction in e-GP system, and Bank will immediately update the payment information in the e-GP system through the provided Bank user access. When Bank Guarantees and securities (tender security, Performance Security, etc.) are issued by the Bank, the same should be immediately update in the e-GP System. When Procuring Entities or CPTU instructs the bank for releasing the Guarantees or Securities, and deposit in specific Procuring Entity or CPTU accounts, the Bank will carry out the transactions, and update the transaction information in the e-GP System. The CPTU shall not be responsible for the transactions made by banks using bank rules with the e-GP system users. In case of International Tenderers / Applicants / Consultants, payments should be made to the Master Bank Account opened by CPTU through Bank Wire transfer or any other method clearly mentioning the purpose of payment. International Tenderers / Applicants / Consultants must communicate with the Banks of e-GP Online Payment Network for updating their payment details in e-GP System. Any

charges incurred for payment transfer, communication or any currency conversion should be paid by the Tenderers / Applicants / Consultants themselves. In case of Bank Guarantee, securities issues by International banks must be endorsed by the local scheduled bank in Bangladesh and the bank must be member of e-GP Online Payment Network in Bangladesh. International payments can be directed/ credited to Master Bank Account opened by CPTU as and when International payment gateway is integrated with the e-GP System.

2.5.11 Virus and Integrity of documents:

If the electronic records entered online and files containing the Tender / Application / Proposal are corrupt, contain a virus, or are unreadable for any reason, the tender will not be considered. It is strictly the responsibility of the Tenderer / Applicant / Consultant (National or International) to ensure the integrity, completeness and authenticity of the Tender / Proposal, and also should comply with the applicable laws of Bangladesh.

2.5.12 External Web References:

CPTU does not take any responsibility of its availability and authenticity of the external third party web references, links referred in the e-GP Portal, as CPTU / IMED does not have any control over those websites.

2.5.13 Operation, Maintenance and Management:

The CPTU / IMED reserves the right to outsource operation, maintenance and management services of e-GP Data center, e-GP system and other related services to any third party. The users of e-GP system are to be obliging such any agreement with any outsourced firm/company.

2.5.14 Governing Law:

This Terms and Conditions of Use Agreement of e-GP Portal shall all be governed by the laws of Bangladesh applicable to agreements made and to be performed in Bangladesh. Government of Bangladesh and CPTU reserve the right to initiate any legal action against those users violating any of the above mentioned terms & conditions of e-GP System User agreement.

2.5.15 Changes in e-GP System and Terms and Conditions of Use:

CPTU / IMED shall have the right to modify clauses of the terms and conditions without prior notice. CPTU reserves the right to modify, add, delete and/or change the functions, User

Interface, contents, and other items in e-GP Portal at any time without any prior notice. User is responsible to use the updated e-GP portal functions and terms and conditions of use.

2.6 Procurement Process Using e-GP

2.6.1 Procurement Plan

The procuring entity must prepare an annual procurement plan to carry out public procurement using government fund. (PPA 2006, Section 11) Procurement planning should aim at attracting maximum competition for the benefits of the procuring entity (PE). In Public Procurement Act (PPA) 2006, procurement planning is regulated by frequency, approval, publication, splitting into packages/lots. Again in Public procurement rule (PPR) 2008, Procurement planning is regulated by Nature & size of the Procurement, Source of funding, Limits & conditions and Forms. Careful & detailed procurement planning is essential for quality project execution, speeding up the procurement process & reducing project implementation delays, reducing possibility of error & reducing subsequent work, contribution to enhanced project quality & efficiency. (Fineurop-ESCB, 2011b) Taking into account the threshold, types of procuring method is decided. For Goods & related Services or Works & Physical Services, relevant methods are OTM (Open Tendering Method), LTM (Limited tendering method), TSTM (Two Stage Tendering Method), RFQM (Request for Quotation Method), DPM (Direct Procurement Method) and OSTETM (One Stage Two Envelope Method). For the procurement of intellectual and professional services, relevant methods are QCBS (Quality and Cost Based Selection), QBS (Quality Based Selection), FBS (Fixed Budget Selection), and LCS (Least Cost selection). HOPE or AO approves the annual procurement plan.

In present e-GP system of Bangladesh, procurement of intellectual and professional services are not incorporated yet and again provision for procurement of Goods & related Services or Works & Physical Services above 50 (fifty) Crore are still not incorporated in the e-GP system.

According to e-GP, guideline changes in Schedule-II of PPR 2008 is done in rule 16(11), that is: "*All tenders using e-GP system must have procurement plan prepared and published irrespective of procurement methods*". PEs prepare their APP in the prescribed format by the CPTU through the e-GP dashboard as required by the PPA 2006 and PPR 2008 along with the subsequent amendments in Act and Rules. The APP must be prepared and published in the e-GP System to carry out any procurement activities by PEs through e-GP System. The e-GP system will guide the PEs with online support tools and forms for providing draft, update of APP and publishing facilities. The e-GP System provides facility to procuring agencies and

entities to revise and update the APP through appropriate approval from the authority. (e-GP Guidelines, 2011)

2.6.2 Tender Preparation

2.6.2.1 Preparing Specification

Procuring Entity must describe following informations while developing specification, namely- name or description of the Goods, Works or Services to be procured; quality of Goods, Works or Services; required performance Standards and life span; safety Standards and limits; symbols, terminology to be used in packaging, marking and labelling of the Goods to be procured; processes and methods to be used in the production of the Goods to be procured, where applicable; and test procedure. It is better to use performance specification. Specifications should be non-restrictive and should promote maximum competition. Specific country or Brand name is not allowed to mention in specification description. (PPR 2008: Rule 29)

2.6.2.2 Tender Validity

Determine Tenders validity period should be determined in such a way that within the period of advertisement, opening, evaluation, approval, Notification of Award (NOA), etc., all formalities are accomplished with some flexibility of unexpected delays. (PPR 2008: Rule 19(1), 19(2), 20(2), 101(1); Schedule II)

2.6.2.3 Determine Tender Security (TS)

In order to discourage the submission of Tenders with ill motive, a PE include a condition in the Tender Documents that Tenders must be accompanied by a security in form of a bank draft, pay order, or bank guarantee using the standard format attached to the Tender documents. This should be issued by a scheduled bank of Bangladesh. A Tender security shall not be requested for Procurement of Goods and related Services, Works and Physical Services undertaken by Direct Procurement Method, and Request for Quotations Method. Any extension TS shall be notified to tenderers. (PPR 2008: Rule 22, 23)

2.6.2.4 Electronic Tender Document Preparation

CPTU develops and update dynamic forms related to e-GP. PEs may change and update only the specific sections of the template and its contents. For example, GCC clauses can be modified only through changing in PCC clauses, adding rows for additional items, or removing unrelated forms or other items as appropriate and with expert sign-off in compliance with PPA and PPR. PE has access to all e-STDs developed and shared by CPTU. PEs get online help to

select the appropriate online tender document or template, for preparing the tender document and for the intended procurement. PEs responsibility is to provide guidance and safeguards, assurance to the validity of the online forms so that the system can guide users to find the correct form and prevent them from filling incorrect forms. PE shall make sure the tender documents are complete and correct before publishing finally on the e-GP portal.

PE must use STSs prepared by CPTU (PPR 2008: Rule 4(1)). PE should follow PPR and PPA to develop Tender document. Information to be included in Tender Document should be in compliance with Rule 4(1) of PPR 2008; qualification of Tenderer should be in compliance with Rule 4(2-7, 9–12) of PPR 2008, related supporting papers should be in compliance with Rule 49 of PPR 2008 and Time timelines are all be in compliance Schedule-II: 64; 64; 66; 67; 68; 71; 83 & 91 of PPR 2008. The PE should prepare tenders or proposals online, and documents required to be uploaded within the time specified in the Invitation for Tenders after signing off the same with the e-Signature or Digital Signature, whichever applicable, by their authorized representative. Tenderers should allocate sufficient time to read the document thoroughly to understand what is being asked for and preparing and submitting the Tender online. Submission must be completed before the deadline of submission time. Tenderers should ensure that all questions and matters are raised in the tender document have been addressed. Tenderers should adequately address all selection criteria, making sure to demonstrate ability to meet the requirements stipulated in the Tender documents. Tenderers must submit their tender response before the closing time. Late tenders, even if a few seconds late, arc ineligible for consideration. The e-GP System shall automatically reject such late tenders. All sort of documents kept in the tenderer's briefcase (virtual web space allocated to tenderer in e-GP system) will remain unless the allocated size exceeds. (e-GP Guidelines, 2011) After preparation of Tender Document, Tender Notice is prepared.

2.6.3 Tender Issue, Receipt and Process

2.6.3.1 e-Advertisement

PE has authority to directly advertise. (PPR 2008: Rule 90(1)) PEs prepare Invitation for Tenders or Tender Notice using the online template available from their secured Dashboard, The detailed description of the Goods, Works and Services, time-schedule, conditions etc. are included the tender documents. This Tender Notice will be available to the procurement opportunities section of the e-GP System and shall be available to all interested users to search and read the e-advertisement. The Invitation is then published in the e-GP Portal by proper

authority from the PE and the published Notice shall be published in newspapers and commercial tender portal according to ICT Policy action No. 82: "*Publish public procurement notices in at least one tender portal operated by the Bangladeshi ITES providers*". (e-GP Guidelines, 2011; ICT Policy 2009) The date of tender notice published in the e-GP system shall be treated as the start date of Tender.

2.6.3.2 Online Entry/Uploading Tender Document

Tenderers submit their Tenders with documentation online and upload within the time specified in the Tender after signing of the same with the e-Signature or Digital Signature, whichever is applicable. Tenderer must submit tender within the stipulated time, as per the tender time schedule. Seconds after the stipulated time, e-GP will not accept that Tender document. So Tenderers are responsible to plan their time sufficient to complete the documents upload, third party transactions like Tender security preparation and submission through banks, verify completeness of tender, and final submission of tender's documents for the specific tenders. Before final submission, the tenderer must upload documents, fill-in required online forms, modify and verify the documents, and complete other activities part by part. e-GP system will not allow incomplete tender. e-GP system will confirm successful tender submission with an acknowledgement. (e-GP Guidelines, 2011)

2.6.3.3 Pre-Tender Meeting

Pre-lender meeting holds online on the date and time as specified in the tender documents. During the pre-Tender meetings, clarifications to the queries of the Tenderers are made online, and also responses are shared through email, and also Dashboard of the Tenderers, who purchased the documents. Name of Tenderers who participated in Pre-Tender meeting will not be shared with other Tenderers by the e-GP System and procuring entities Name of Tenderers who have posted queries are not be shared with Procuring Entity, Questions can be posted till last date and during the pre-Tender meeting. No question should be allowed to be posted, once pre-tender meeting is concluded. Queries must be posted via e-GP Online channel through dashboard Queries. Posted via Fax/Post/email is not be entertained. (e-GP Guidelines, 2011: Appendix 2)

2.6.3.4 Tender Amendment

To the extent permissible under the procurement rules the Procurement Agencies may amend the tender documents at any time prior to the deadline for receipt of tenders. Procuring entities shall issue an addendum and publish in the related section of the e-GP System and also send

via an automated electronic means (i.e., email, sms) and make available online in the e-GP System for the information of the public and the prospective Tenderers who have received the tender document. (e-GP Guidelines, 2011)

2.6.3.5 e-Lodgment

e-Lodgment allows you to electronically submit tenders. A tender lodged electronically is deemed for all purposes to be the true and legal version, duly authorized and duly executed by the Tenderer and intended to have binding legal effect. e-Signatures or Digital signatures are necessary due to the security system for identity and authentication purposes. Identity of the Tenderer maybe verified with a follow-up due diligence process. Tender submitted via the e-GP System must be received in full prior to the closing time. The Tenderers acknowledge the receipt of Tender amendment through the system if the electronic records entered online and files containing the Tender are corrupt, contain a virus, or arc unreadable for any reason, the tender will not be considered: It is strictly the responsibility of the tenderer to ensure the integrity, completeness and authenticity of the Tender. Prior to submitting a Tender electronically the Tenderer must ensure that all electronic records and files making up the Tender are completely viruses free using virus checking software, though e-GP system server - also will check the uploaded flies to ensure the files are completely virus free and will give alert, to the user if any virus found. Tenderers acknowledge and adapt, in respect of electronically transmitted tenders, that: Lodgment of large electronic files may lake time and as such sufficient time must be allowed to fully transmit all files prior to the closing lime. Files should be compressed into zip formal for making smaller. PEs or the CPTU shall not be liable or responsible for the loss, damage, destruction or corruption of any Tender, however caused. PEs, until after the Tender opening, may not discover corruption or unreadable files submitted via the e-GP System. A Faults in the Tenderer's computer system arc not the responsibility of the PEs or the CPTU and no extension to the closing time will be made because of the system faults of this kind. None of the users of e-GP system including PE users and e-GP Administrators get to know the name of the tenderers who purchased the documents and also lodged the tender until the tenders are opened on the designated date and time of opening. Authorized PE user may know only the count of Tender lodged. CPTU provides the online learning tools for tenderers, but the providing trainings the tenderers to use the system effectively are the responsibility of procuring entities. PEs should prepare the trainers on e-GP system through the TOT from CPTU. Operation, maintenance and management entity, when established, may conduct the training to tenderers /PE users and other users on agreed terms

and conditions, and Disclaimer and Privacy Policy. (e-GP Guidelines, 2011: Appendix 4, Appendix 5)

2.6.3.6 Tender Opening

The PE forms a Tender Opening Committee (TOC). In the committee formation, among two (2) members one (1) must be from the PE, and he/she also must be a member of Tender Evaluation Committee (TEC) to satisfy the authentication requirements of the e-GP System. (e-GP Guidelines, 2011: Appendix 2) Access to the Dashboard for the TOC shall be available only after the specified Tender opening date or time. The Committee members fill out the Tender Opening Sheet generated by the system as per PPR-2008 requirements. Access to the technical and/or financial proposals to TOC are available only at the specified date and time: configured in the e-GP System by the PEs according to opening date and time stipulated in the Tender documents (TD). Tenderers may physically be present at the Tender opening; otherwise Tenderer may choose to participate online during the Tender live opening session, where the TOC may post the tender opening records. Tender opening information shall be posted under the specific tender section of the Dashboard of Tenderers, and also sent through email alerts, if preferred by the Tenderers. Online tender opening schedule and specific web address for the Tenderers to participate in, the online Tender opening meeting/conference shall be specified in the Invitation to Tender issued by the procuring entities. (e-GP Guidelines, 2011; PPR 2008)

2.6.4 Tender Examination, Evaluation and Approval

2.6.4.1 e-Evaluation

2.6.4.1.1 Formation of Evaluation Committee

The Procuring Entities receiving the Tenders/ Applications/Proposals should form a Tender Evaluation Committee (TEC)/Proposal Evaluation Committee (PEC). Formation of TEC/PEC is described in Business Process Reengineering (BPR) document: "*Tender Evaluation Committee (TEC) shall be formed comprising of maximum up to three (3) members. Among them two (2) must be from PE to satisfy the PE authentication requirement in e-GP System*". (e-GP Guidelines, 2011: Appendix 2) PEs are to confirm that committee members are capable enough with knowledge and expertise to use available tool offered by e-GP system: way to enter, view, update scoring criteria and weightings, automated analysis of tenders, audit trials and reporting etc. PE is responsible to make e-GP system available to evaluation committee. Members of the evaluation committee members also may receive the auto notification (via email or SMS as configured in preference to auto-notification) from the c-GP System as soon as the user is selected. (e-GP Guidelines, 2011)

2.6.4.1.2 Use of e-GP system by Evaluators

Evaluation committee can have access to the Dashboard as configured by PE. The Committee members should fill out and sign the declaration individually before evaluation and joint certification after evaluation provided online by the system as per PPR 2008 requirements. Access to the technical and/or financial proposals to TEC shall be available only at the specified date and time configured in the e-GP System by the PEs. Evaluators should follow the predefined workflow set up by the PE to evaluate Tender documents. e-GP system will automatically generate draft results of the evaluation to assist the evaluators. Evaluators should review the auto-generated reports, update and complete the entire required evaluation matrix based on the stipulated criteria and sought facts in tender documents to complete the evaluation. e-GP System shall not allow the Evaluators to alter any data provided by the Tenderers and agreed final report by the committee that may determine the winner Tenders after submission of the final data to the e-GP system. (e-GP Guidelines, 2011)

2.6.4.1.3 Approval, Notification of Award and Contract Signing

Approval process is done in compliance with Section 8 of Public Procurement Act (PPA) 2006. Approving authority (AA) can be HOPE, PD, PM, AO, Ministry or CCGP. Approval level is selected based on Delegation and sub-delegation of financial authority as approved by Government time to time except Cabinet Committee on Government Purchase (CCGP). In Rule 11 of PPR 2008, Decision making procedure of Approving Authority is described. Here AA decides in compliance with the provisions of the Act and these   Rules on the recommendations of Evaluation Committee (EC). AA considering the overall recommendations of the TEC, may take any one of the following steps: approve the recommendations; seek any clarification from the TEC through PE on any specific issues in connection with such recommendations. After explaining the reasons AA may reject or recommends for reevaluate or approve the tender. In Rule 36(3)a Approval procedure for Ministry, Division, Department and Directorate is described. After approval of the Tender under Sub-Rule 3 (a) and (b) of Rule 36, the Procuring Entity shall issues NOA within 7 working days but before the validity period provided that no complaint or appeal is pending. PE ensures confidentiality in regard to approval by all officers and staff concerned with the process either directly or indirectly. (Fineurop-ESCB, 2011b; PPR 2008: Rule 36(4))

Approval of the Evaluation Report is routed in e-GP system through the workflow to appropriate Approving Authority as stipulated in PPR-2008 along with subsequent amendments. PE issues NOA to successful evaluated tenderer via dashboard, email, SMS as

configured in preference settings. Tenderer must acknowledge the receipt of NOA and carry out necessary formalities as indicated in the NOA and tender document. e-GP facilitates signing contract online between PE and Tenderer. But there is also offline provision to sign contract in compliance with PPR 2008. In case of offline contract signing, PE must enter the contract details, contract documents, schedules of deliveries, contract execution plan in e-GP system. After signing contract, system is updated by PE and contract award information is shown in e-GP portal. Signing of Contract is done in compliance of Rule 102 of PPR 2008. (Fineurop-ESCB, 2011b; e-GP Guidelines, 2011; PPR 2008)

2.6.5   e-Contract Management

Contract administration and management is covered in Section 22 of Public Procurement Act and Rule 38 to 42 of Public Procurement Act. In Section 22 PPA describes that the PE is responsible for effective administration and management of a contract and following guidelines issued by the government from time to time. In PPR Rule 38 tells about contract administration and management. This include all administrative, financial, managerial and technical tasks to be performed by the Procuring Entity from contract award until it is successfully concluded or terminated and, payment is made and disputes or claims under it resolved. PPR Rule 39 describes about Works Contract Administration and Management how project manager follows the work program and control cost, quality and time. Rule 40 of PPR is about administration of good contract and Rule 42 of PPR is about termination of contracts and settlement of disputes. In compliance with PPR and PPA following need to be addressed for e-GP.

2.6.5.1 Contract Progress Monitoring and Control

The Procuring Entities should nominate individuals for managing contracts, shall have the knowledge, skills, and abilities to effectively carry out their responsibilities by Using the Dashboard provided in the e-GP system. E-GP System provides the standard forms and entry spaces to record the different activities and events to the Contract execution under e-Contract Management System. Procuring entities should keep updated contract with the project schedules, deliverables. Service Level Agreement, if any, specifications, amendments arid other information in the c-GP system. Procuring Entity (PE) or a person nominated by PE must measure time and cost against the budget and contract specifications. The projected time required to complete the contract will also be assessed to detect deviations from the plan through the e-GP system dashboard, the performance of the work must be checked to ensure that the targets are being met and accordingly update the data in the e-GP system to reflect the

actual status of the contract. The designated official(s) should upload inspection reports, photographs, and other documents that may be appropriate in relevance to the contract.

2.6.5.2 Certification and Payment Processing

The e-GP System provides the standard forms for issuing different types of certifications such as acceptance certificates, quality certificates, etc. The designated officers) responsible for evaluating performance of the contract must carefully review the contractor's requests submitted online for payments to verify the accuracy of all charges and work performed, as e-GP system does not have automated tools to verify the physical performance in the field. The designated officer must verify receipt of goods and performance of services and works in accordance with the contract prior to authorizing payment of invoices online. Contract management will be fully based on the workflow process configured for the specific procuring entity.

2.6.5.3 Contract Agreement Administration

The c-GP System also provides a tracking mechanism for all contract agreements. The designated officials should check contract status, contracted parties, contract period, goods, works, and services covered and contract points to make any decision during contract agreement administration. If any contract needs to be amended the c-GP System brings up the auto alerts for required actions. The designated official must record appropriate reason before any such extensions.

2.7 Benefits of e-Procurement

Fiery growth of e-commerce compel the Government to modernize Public procurement system. The application of digital technology offers opportunities for improvements that the public sector cannot afford to ignore. To attain this improvement, Government has to pay close attention to e-GP system as a tool upgrade the procurement system. Government is the single largest purchaser of a country and efficiency in the purchasing system saves lots of money and thus a low middle income country like Bangladesh can do their development more transparent and efficient way. Benefits of e-GP system is described as follows.

e-GP is the vital element to reform public sector, reduce technological gap, encourage economy and increase Government performance. e-GP provide transparency and efficiency that create win-win situation for both public sector and suppliers. This promotes sustainability and value for money in public sector procurement. Moreover, the return from the public in general due

to transparency and efficiency in spending taxpayers' money can contribute to enhancing the image of government.

Transparency and fairness helps to reduce opportunities for fraud, improve quality of management of procurement by public sector including monitoring and decision-making, and to encourage the participation of private industries in the public market by increased fairness and competitiveness.

In e-GP system, process competency results reducing or redistributing fiscal expenditures. It promotes process efficiency that reduce or eliminate repetitive tasks in the procurement process by moving them online results in time and cost saving. e-GP system reduce potential timeline of procurement cycle and its transaction cost.

Cost savings is a strong driving force for e-GP that decrease in price and transaction costs. Cheaper prices can be achieved through increased competition, better access to markets, increased purchasing volumes under framework contracts, reduced sales costs for suppliers, and use of e-Reverse Auctioning. Transaction costs can be lowered due to the automation of the procurement process with an e-GP system being available at any time and any connected location, accelerating the procurement process, and replacing routine and time-consuming human labor. Lower transaction costs of suppliers, in turn, may have a direct impact on their price calculation and allow them to quote a better price.

The following table is a summary of some important benefits for governments, suppliers, and the public in general which can be achieved by using e-GP from the perspective of transparency and efficiency gains:

	Government	Supplier	Public
Transparency	• Anti-corruption • Increased number of suppliers • Better integration and interaction between governments • Professional procurement monitoring • Higher quality of procurement decisions and statistics • Political return from the public	• Increased fairness and competition • Improved access to the government market • Open the government market to new suppliers • Stimulation of SME participation • Improved access to public procurement information • Government accountability	• Access to public procurement information • Monitor public expenditure information • "Have a say" • Government accountability
1. **Efficiency** *Costs*	• Lower prices • Lower transaction costs • Staff reduction • Reduction in fiscal expenditure	• Lower transaction costs • Staff reduction • Improved cash flow	• Redistribution of fiscal expenditure
2. **Time**	• Simplification/ elimination of repetitive tasks • Communication anywhere/anytime • Shorter procurement cycle	• Simplification/ elimination of repetitive tasks • Communication anywhere/anytime • Shorter procurement cycle	• Communication anywhere/anytime

Table2: Benefits of using e-GP

2.8 Challenges of e-Procurement

Even though the benefits, adopting e-procurement solutions can be significant, there are some internal and external challenges and risks related to the adoption of e-procurement. There has been a long term problem with identifying value from Income Tax (IT) investments and in creating a case for IT introduction in general. This is why companies need a clear plan for implementing e-procurement technologies.

There are three important challenges to e-procurement implementation (Angeles and Nath, 2007):

1.   Lack of system integration and standardization issues.
2.   Immaturity of e-procurement-based market services and end user resistance.
3.   Maverick buying and difficulty in integrating e-procurement with other systems

Lack of system integration and standardization issues relates to the fact that e-procurement is still relatively new business application and it is not unusual to find a lack of remarkable reference models. Another challenge is software immaturity and the lack of certain key features like invoicing, payment reconciliation or managing of different geographical jurisdictions, tax structures, currencies etc. Also, companies need to be aware of the possible hidden costs related to implementation of e- procurement solutions, such as system integration, content aggregation and rationalization, catalog and search engine maintenance, supplier enablement, end user training and procurement process re-engineering. These costs can easily exceed software licensing and maintenance cost by five to ten times (Angeles and Nath, 2007).

The second challenge relates to the immaturity of providers of e-procurement services and the lack of supplier preparation, and the resistance of solutions end-users. In some cases the immature service providers may not be able to provide a complete suite of services, especially for more complex or advanced e-procurement implementation projects. The immaturity of tenderers and the lack of preparations are also a challenge for many organizations. After all, suppliers need to learn how to generate catalogs, process electronic purchase orders, how to use invoicing mechanisms among other tasks (Angeles and Nath, 2007). The success of e-procurement solutions relies on the network effect that will be more effective if enough players are adopting the same technology. The other challenge here relates to the resistance of end-users towards operating the e-procurement solution. To prevent these companies should encourage using new e-procurement technologies through intensive training and educational sessions with End-users.

The third challenge is linked to the difficulty of changing purchasing-related behavior among the company's employees. Some companies find it difficult to eliminate maverick buying even after the implementation of e-procurement. This can be prevented by intensive end-user training and educational programs. Companies also need to be aware of the problems in integrating the e- procurement solution with other systems. Integrating e-procurement solutions with other business applications (e.g. accounting) can be more complex than businesses think.

There are four risks associated with adopting e-procurement technologies. These four risks need to be carefully addressed before these technologies are adopted.

Internal business risks: Business has to be careful while integrating e-procurement technologies with other business applications such as accounting, human resources, accounts payable and cash management. Most companies already have invested heavily in these other applications and the integration of e-procurement should go as smoothly as possible, or it can jeopardize the reliability of organizational information.

External business risks: e-procurement solutions also need to be able to cooperate with suppliers IT- infrastructure. For e-procurement solution to be successful suppliers must be accessible through the Internet and provide catalogs to satisfy the needs of their customers. In some cases suppliers might lack the resources to meet the demands of customers in catalog developing and updating. Companies also need to develop mechanisms that provide the buyers with assurance that new suppliers meet the expectations and standards relating to supplier quality, service and delivery capabilities.

Technology risks: Many companies are unsure which e-procurement solution best suits the specific needs of their company. The lack of widely accepted standards blocks the integration of different e- procurement solutions across the supply chain. The researchers insist that without widely accepted standards for coding, technical, and process specifications, adoption of e-procurement technologies will continue to be slow and will fail to deliver the promised benefits.

e-Procurement process risks: This risk relates to the security and control of the e-procurement process itself. Such issues can be related to, for example data security and fraud prevention e.g. fake tenderers, fake bids etc.

As identified in the examination of earlier e-procurement literature, adopting e-procurement solutions can provide substantial cost savings and other benefits, but there are also challenges and risks companies need to take into account when considering e-procurement adoption. Making the procurement process more efficient and faster can be achieved with the use of e-procurement solutions. None the less, this requires that the implementation process must be planned and executed thoroughly in order to minimize the challenges and risks companies might face (Viljami, 2012).

3. METHODOLOGY

3.1 Introduction

Overall purpose of this thesis was to demonstrate how efficiently Department of Public Health Engineering (DPHE) perform their procurement activities using e-GP at the end level. On one hand this research was involved on what inefficiencies Executive Engineers or Procuring Entities face in procurement process in e-GP system and on the other hand, it was involved to identify the measures that can be taken by procuring entities to perform the procurement activities in e-GP in a better way.

Specific research questions were formulated in Chapter One. These were restated:

1. Is there any inefficiencies found by the Procuring Entities while working in e-GP system?
2. What are the causes behind these inefficiencies?
3. What measures can be taken to mitigate these inefficiencies?

This chapter represents the research design, data collection and data analysis procedures that were decided to be most suitable for addressing the formulated research questions.

3.2 Research Design

Qualitative Research was conducted because research questions of this study cannot be answered applying quantitative methods. This was due to two reasons: one was that they were largely exploratory in nature and second was to gain general insight into the topic. In fact, the character of the study require on hand experience on procurement process using e-GP system which could not be acquired through a standardized or structured questionnaire. The aim was not to measure or quantify something, but to improve understanding of inefficiencies in procurement process in e-GP system by obtaining information from on hand users on personal experience and critical incidents.

Interview was used as a method to gather qualitative information. Interviews were particularly good tools for gaining detailed information where the research question was open-ended in terms of the range of possible answers. One to one interview with unstructured questionnaire survey was used as a method to collect data. Interviews were not particularly well suited for gaining information from large numbers of people. So careful attention was given to selecting informants who would have the knowledge or experiences necessary to answer the research question. Face to face interview was conducted to gather richest data in terms of body language

and non-verbal communication as well as what was actually said. Procuring Entities were very busy person and very difficult to get access. Appointments were made to meet the interviewees despite their busy schedule. The overview of methodology was expressed as follows:

Step 1:   Selection of Study Area (DPHE)

Step 2:   Data Collection from Executive Engineers by using Open ended unstructured questionnaire survey (Qualitative Data)

Step 3:   Data Accumulation

Step 4:   Analysis of Collected data to identify the inefficiencies in procurement process in e-GP system and also identify the reasons behind inefficiencies.

Step 5:   Discussion on qualitative data and suggest mitigation measures to remove inefficiencies in the procurement process in e-GP system.

3.3 Data Collection

3.3.1   Selection of Study Areas

The study was be limited on the buyers of Department of Public Health Engineering (DPHE). The buyers were be the Procuring Entities or Executive Engineers of DPHE only.

3.3.2   Sample Size

Some 10 respondents were taken for buyer.

3.3.3   Sampling method

Non probabilistic sampling techniques was used for the survey.

3.3.4   Sources of Data and Data Collection Technique

Whole data collection was constrained by limited time frame, geographical restrictions and limited number of available interviewers. Only 1.5 month was available to conduct whole thesis. Open ended face to face interview was conducted with those who were available at Head Office of DPHE within this time. Executive Engineers came to Head Office for their official activity. Appointment was made with sufficient time frame at a suitable place to conduct the interview. Unstructured questionnaire was the primary source of data.

3.3.5   Agreement on data Collection

Executive Engineer is a vital and sensitive post in Department of Public Health Engineering (DPHE) and Procurement is a very sensitive activity they conduct. For this reason, the

researcher had to go with a non-disclosure agreement with the Executive Engineers. It was agreed their name and location would not be disclosed at any point of the research activity.

4 ANALYSIS AND RESULTS

4.1 Introduction

The purpose of the study was to find the inefficiencies that Procuring Entities face while working in e-GP system. Further causes behind those inefficiencies were identified and finally mitigation measures were developed depending upon the problems.

4.2 Overview of Responses

As Data collection method was face to face interview. Executive Engineers of Department of Public Health Engineering (DPHE) act as Procuring entities. All procurement related activities are conducted under his supervision. So their information are more practical and realistic than others.

There were around 70 (seventy) Procuring Entities in DPHE. Using face to face interview method, it was very difficult and time consuming to address them all in such a short duration of time. The researcher used 20 (twenty) days to communicate and complete the interview and 10(ten) responses were collected. All of them are Executive Engineers of DPHE. Afterwards more detail analysis were conducted to identify the inefficiencies and causes. And further more digging were done to find the mitigation measures to those inefficiencies in procurement process in e-GP system.

4.3 Extent of e-GP system

Whole procurement cycle was still not included in e-GP system. e-GP system was supported by following steps: Annual Procurement Plan (APP) approval, Tender Noticing, Tender submission, Tender Opening, Tender Evaluation and Notification of Award (NOA). So researchers' research was limited to mainly e-Tendering activity. Tender Award was done in manual process. Implementation, payment was beyond e-GP system.

4.4 Findings

All 10(ten) interview documents were analyzed and it was found that all the respondents mainly focused on 12(twelve) points among them 8(eight) was mainly focused on e-GP related inefficiencies. Analysis was to identify the inefficiencies in procurement process operation in e-GP system, consequences of inefficiencies. Mitigation measures were developed based on

the inefficiencies and their consequences. The identified inefficiencies in procurement process operation in e-GP system were as follows.

1. Server Incapability
2. Unplanned Training
3. Troublesome BOQ Upload process
4. Supplier Selection failure due to Corrupted File Upload
5. Lengthy Document Verification in Evaluation
6. Lack of Knowledge
7. Lack of logistics Support
8. Reinventing the wheel for tenders having same documents
9. Need Assessment Difficulties
10. Wrong Purchasing Method Selection
11. Typing Error
12. Specification Development Weakness

Among the above mentioned inefficiencies first 8(eight) were directly related to tendering operation in e-GP system. Others were problems very important but common to both paper and electronic tendering system. So first 8(eight) were further analyzed.

SL No	Inefficiencies	PE 1	PE 2	PE 3	PE 4	PE 5	PE 6	PE 7	PE 8	PE 9	PE 10	No. of Persons	Support In %
1	Server Incapability	√	√	√	√	√	√	√	√	√	√	10	100%
2	Unplanned Training	√	√	√	√	√	√	√	√	√	√	10	100%
3	Troublesome BOQ Upload process	√	√	√	√	√	√	√	√	√	√	10	100%
4	Supplier Selection failure due to Corrupted File Upload	√		√	√		√	√	√	√	√	8	80%
5	Lengthy Document Verification in Evaluation	√	√		√	√				√	√	6	60%
6	Lack of Knowledge		√		√	√	√		√	√		6	60%
7	Lack of logistics Support			√	√	√		√				4	40%

SL No	Inefficiencies	PE1	PE2	PE3	PE4	PE5	PE6	PE7	PE8	PE9	PE10	No. of Persons	Support In %
8	Reinventing the wheel for tenders having same documents	√	√	√						√	√	5	50%
9	Need Assessment Difficulties	√			√				√			3	30%
10	Wrong Purchasing Method Selection					√						1	10%
11	Typing Error					√	√					2	20%
12	Specification Development Weakness	√							√		√	3	30%

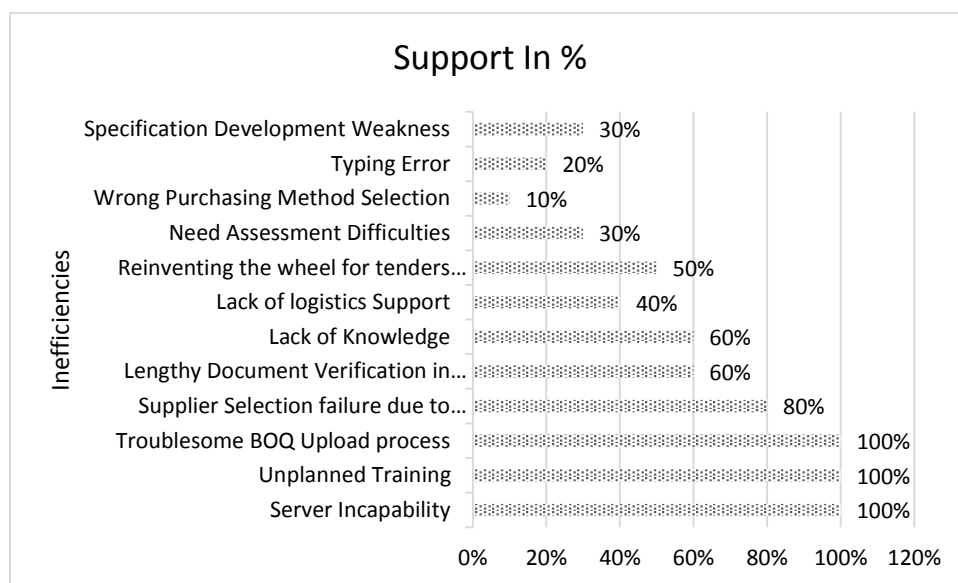Table3: Inefficiencies identified by Procuring Entities

Figure 1: Percentage of People Support vs Inefficiencies

All inefficiencies were tabulated in Table 1 showing which Procuring Entities identify what inefficiency in Procurement Process Operation in e-GP system. Figure 1 was the graphical representation of Table 1. It was clear that all the respondents had identified Server Incapability, Unplanned Training and BOQ upload Problem as inefficiencies to procurement process operation in e-GP.

4.5 Discussion on Findings

Procurement Process Operation inefficiencies were further analyzed and problems and consequences were identified and further mitigation measures were developed to avoid or reduce the impact of these inefficiencies in procurement process operation.

4.5.1   CPTU's Server Incapability

All respondents interviewed had talked about Server Incapability as an inefficiency in Procurement Process Operation.

Problem: All the interviewed Procuring Entities addressed Computer Server's lack of capacity as an inefficiency to procurement process operation. This lacking in capacity was denoted by incapability of server, operated by CPTU, to cope up with demand. No respondents were able to provide clear information on the volume of users presently using e-GP system. But they were able to give a vague idea about the big picture that this volume had been beyond its capacity. This excess number of user access sometimes caused server failure without any prior notice and hampered the Procurement Operation Process. Another problem identified by all interviewees was slowness of the server. Sometimes it took hours to complete the job that could have been completed in minutes. Most of the time, after putting a command, it took much more time to execute. Sometime system logged out without any notice and had to make several log-in attempt during a single session of work. So from the interview, the researcher was able to identify 3(three) problems regarding incapability of server issue. First problem was server downtime, second was slowness of the system and the third was login problem. Procuring entities understood lacking of server capacity has been a major cause behind procurement process operation inefficiency in e-GP system.

Consequences: Consequence of inefficiency of CPTU server resulted more work-time and work-load. After approval of Annual Procurement Plan (APP), Procuring Entities were bound to complete tender preparation, tender opening, tender evaluation and award within a stipulated time. Procuring Entities or Executive Engineers who were aware of these problems incorporate the time periods in APP in such a way that safe period of time was kept to accommodate the inefficiencies due to server incapability. As a result, it took more time to complete the tendering process which could be completed in less time and thus goods or works could be procured faster. This loss of valuable time could be used for another development purpose. Another consequence of this inefficiency was ineffectively use of extra energy in performing procurement related activities. At day time server was generally slow and Procuring Entities

and Evaluation Committee members had to spend more time than needed to complete the tender preparation and evaluation work. This extra time hampered other daily works. Lastly, sometimes Procuring Entities failed to open tender on time due to server problem. This added extra step in the procurement process. Procuring Entities had to go to the HOPE for approval of rescheduled tender opening time. This put extra pressure on work-load and work-time and lengthens the procurement process.

Mitigation Measures: Several mitigation measures can be taken to reduce the procurement process operation inefficiency. Firstly, number of tenders to be executed in e-GP system can be decided depending on server capacity. This can be a good solution to reduce server related inefficiencies. At early stage of every financial year, DPHE and CPTU can assess the capacity and determine how many tenders can be floated on e-GP system every year. CPTU can do same activity with all other departments. This load shearing strategy will help to get better performance from present situation. Secondly, upgrading CPTU server is the only solution to increase performance and serviceability of e-GP to its full extent. Upgrading server involves huge cost and long term planning. CPTU should make proper steps to upgrade the system. From the training coordinator of CPTU, it was confirmed that CPTU is taking step to upgrade their server capacity. This is a long term solution. But for immediate measure, no steps has yet been taken except routine maintenance. Department of Public Health Engineering (DPHE) has no involvement regarding server related activities except shearing information. Thirdly, according to para 3.1.3.4 of e-GP guideline, e-GP system is operated by CPTU but they take no responsibility regarding non functionality of any functions and failure of server. Thus all risk goes to the user and Procuring Entities. So mitigation steps can only be taken from DPHE side. So there is no other option but to go for time extension approval to HOPE. HOPE can specifically depute person for looking after time extension issue and can also delegate authority to make the approval process faster.

4.5.2 Unplanned Training

100% respondents that were being interviewed talked about Unplanned Training as an inefficiency in Procurement Process Operation.

Problem: Generally Trainings were arranged in DPHE for Executive Engineers, Assistant Engineers and Sub-Assistant Engineers on Public Procurement Act (PPA), Public Procurement Rules (PPR) and e-GP. These trainings were arranged by CPTU and other donor groups like UNICEF. UNICEF and other donor groups arrange training in time to time depending on

availability of fund. CPTU's trainings were well organized and other trainings were not organized as arrangements done by CPTU. Moreover no formal trainings were arranged for development of basic computer literacy of procuring entities and evaluation committee members. Every respondents informed that their subordinates, mainly Sub-Assistant Engineers, had lack of computer literacy and for this reason they face lacking of confidence. Now and then Sub-Assistant Engineers face teething problems while working in computer and had to ask his Executive Engineer or Procuring Entity to solve the problem. If the solution was unknown to Executive Engineer then SAE had to ask elsewhere. Whole process took vast amount of time loss and put extra workload on Executive Engineer. Moreover, Sub-Assistant Engineers, having job experience over 20 (twenty) years, were very reluctant to learn and enhance their computer related knowledge as they found this troublesome. Furthermore DPHE did not perform any training need analysis (TNA) and gap analysis. So needs for training of officers were not evaluated properly. Except CPTU's procurement training, other trainings were provided based on availability of fund and people. Thus unplanned training caused inefficiency in procurement process operation in e-GP and problems identified behind this issue were no training need analysis, no monitoring after training and lack of computer literacy of officers specially Sub-Assistant Engineers.

Consequences: Lack of ICT knowledge of Sub- Assistant Engineers reduced their confidence in performing procurement activity. Due to absence of confidence, SAEs, every now and then, tried to transfer their duties even his tender evaluation part to the Procuring Entity. All the respondents interviewed had confirmed that most of the tender preparation had been done by Executive Engineers. SAEs was always being skeptical due to lack of confidence in working in e-GP platform. Moreover all Executive Engineers did not totally rely in e-GP tender preparation by Sub-Assistant Engineers. Executive Engineers have other duties like site visit, attending meeting and other important office duties as they were the focal person at District administration from DPHE. Sometimes Procurement related activities were become burden to Executive Engineers and thus slowed down the tender preparation process. This clearly states that procurement could have been completed at less time. Sometimes typing errors occurred during tendering preparation and to overcome that mistake, Procuring Entities had to give corrigendum. If corrigendum was given almost at the end of tender submission, then time extension might be needed from the HOPE. Thus extra step and time were added in e-GP operation process that was clearly a procurement process operation inefficiency. Finally, Trainings were not arranged according to need. No database was maintained on lack of skill of

the users of e-GP system. Moreover good relation became vital than lacking of skill in selection process for training especially for those trainings organized in DPHE. Ultimate consequence of this was same people had been getting more and more training and others were lacking of much needed training.

Mitigation Measures: Training need analysis has to be performed to identify present skill level and knowledge gaps. In DPHE, trainings should be designed with the view to reduce gap. Moreover a database should be maintained that will store the list of all People need to be trained with their skill level, laggings, type of trainings needed and number of trainings provided. Also time to time evaluation data can also be incorporated in the database. Effective training management can only develop the quality of human resource and reduce effect of inefficiencies developed by procurement process operation in e-GP system.

4.5.3 Troublesome BOQ Upload process

All interviewed had talked about troublesome BOQ uploading process as an inefficiency in Procurement Process Operation.

Problem: BOQ (Bill of Quantity) upload process was responsible for causing procurement process inefficiency. Most of the Sub-Assistant Engineers of DPHE were habituated to work in Microsoft Word (MSWord) and they did all calculation manually by hand calculator. There had been a tendency that work was done in Word file and then copied to an Excel file. Most of the time through this process all rows and columns were not pasted in order and the spreadsheet got broken. Then large amount of time had been needed to edit the table to make that useable. This was troublesome and time consuming. Moreover all Executive Engineers had agreed that they could not convert Excel file to Comma Separated Value (csv) file and failed to enjoy the facility to directly upload the BOQ into e-GP system. They manually upload BOQ item by item. It is a very slow and time consuming process in the tender preparation phase. This situation became severe when BOQ consists of around 500(five hundred) items.

Consequences: Consequence of BOQ upload problems were wasting of time, typing error risk, extra workload and extra printing cost. It was clear that uploading BOQ item by item was time consuming and involved extra work-load. This uploading was normally done by SAEs. PEs were not totally confident in SAEs upload process. So PEs print the uploaded document and did through checking. This included extra step and expense for printing. Typing risk was a big risk. Mitigating that risk needed high precision of attention. Otherwise typing error might end

up the issue of failure of completion of procurement process and even litigation issue. Thus this BOQ uploading problem caused inefficiencies in the procurement process operation.

Mitigation Measures: There are no other option but to arrange training modules to Assistant Engineers and Sub-Assistant Engineers regarding use of Excel and Comma Separated Values (CSV) in work places. SAEs will be the main focus of this training module because estimate and BOQ (Bill of Quantity) related works are mainly done by Sub-Assistant Engineers. Further, computer operators of DPHE may be added to training module to develop their skills on use of Microsoft Excel (MSExcel) and Comma Separated Values (CSV). Besides this training issue, all Executive Engineers, Assistant Engineers and Sub-Assistant Engineers should be encouraged to use conversion tool to convert Comma Separated Values (CSV) file from Microsoft Excel (MSExcel). DPHE training division could manage a conversion tool and distribute to Executive Engineers. This would reduce time, workload and increase efficiency of tender preparation phase. Further Executive Engineers should motivate and use his reward power to promote Excel software at workplace for estimation and BOQ preparation and all other possible related works. This will reduce time of copy-pasting and editing step and it will increase SAEs working efficiency in Excel.

4.5.4   Supplier Selection failure due to Corrupted File Upload

80% of the interviewees had identified Supplier Selection failure due to Corrupted File Upload as an inefficiency to Procurement Process operation.

Problem: Sometimes tenderers had uploaded corrupted file that they had not even noticed. Though tenderers had genuine documents but they became non responsive as they failed to submit documents to evaluation committee. In this way, a tenderer who had potential capacity and capability and had submitted less price than other failed to be responsive in evaluation.

Consequences: Consequence of file download error in tender evaluation phase might have caused reduced competition. e-GP was first introduced in 2011 and still tenderers were not habituated in e-GP yet specially for DPHE. Due to corrupted file document, potential tenderers failed to become responsive. It was like tenderers had failed to submit their papers in traditional tendering process. If procurement process was done in paper based traditional tendering process, situation might have changed. The rejected tenderer in e-GP would have become lowest in paper based tendering process. But due to document error the tenderer failed to sustain the evaluation phase. This ultimately reduce confidence of tenderers. Moreover competition is reduced as potential tenderers were getting out of tendering process. This way evaluation

committee failed to select the lowest one that actually had submitted the lowest price. Thus value for money was not achieved in the selection process.

Mitigation Measures: In tender evaluation process, evaluation committee ask for clarification for ambiguities. Failure to submit proper and valid document was treated as material deviation and tenderers were tagged as nonresponsive. If provision in e-GP can be included that faulty files could be re-uploaded in clarification process, then lots of nonresponsive tenderers could have become potential tenderer and competition will increase. This step need to be taken form CPTU. DPHE can only inform the situation. In this way value for money can be achieved with much more competition in the tendering process. Another way is to help the bidders to participate in the tendering process without making any error. Every district office can be a technical support center for the tenderers. This way tendering process become more competitive and value for money can be achieved.

4.5.5 Lengthy Document Verification in Evaluation

60% of respondents had identified Lengthy Document Verification in Evaluation process as an inefficiency to Procurement Process Operation.

Problem: e-GP system was electronic version of traditional tendering system. This system was more transparent, efficient and effective than traditional one. But yet it had not been able to come out of traditional tender document verification system at tender evaluation phase. The evaluation Committee had to perform extra step of tender document downloading and printing. Then these documents were sent for verification from the source. This extra step slowed down evaluation process. Thus traditional document verification was an inefficacy to procurement process operation in e-GP system.

Consequences: Traditional verification system added extra cost of printing and copying of documents. Sometimes documents were not verified within stipulated period of evaluation period. This resulted commencement of time extension process and thus lengthen procurement process operation. Lengthening tendering process means less time available for implementation of those works that were mandatory to be completed within that financial year. Analyzing this situation with the Iron Triangle of cost, quality and time, it was evident that impact on time would effect quality and cost of work.

Mitigation Measures: CPTU can develop cloud verification system where with a certain fee tenderers will upload their experience certificate and get those verified by CPTU. This will

stop the process of reinventing the wheel. In the process tenderers will only have to submit the link of the verified document from the cloud during tender submission. This will reduce evaluation time and increase accuracy of evaluation and ultimately value for money would have been secured.

4.5.6   Lack of Knowledge

Among the Executive Engineers interviewed, 60% had identified lack of knowledge as an inefficiency to Procurement Process Operation.

Problem: Procurement was a major activity for an implementation agency like DPHE. Whole procurement process was regulated by Public Procurement Act (PPA) and Public Procurement Rule (PPR). Moreover there was also e-GP guideline for procuring in e-GP system. Furthermore, e-GP users have to use Computer and Internet to do tendering activity in e-GP system. There were well defined documents like PPA and PPR book, e-GP guideline etc. available to all. Sometimes Executive Engineers and Sub-Assistant Engineers faced teething problem while working in e-GP system. If it was related to procurement rule and regulations, then he or she had to look in PPR and PPA and if he failed to understand, then he had to look for someone who know the solution of the problem. Besides rules and regulations another problem Executive Engineers and other e-GP users' face was trouble in using computers. All computer users were weak in computer trouble shooting. For very simple problems they had to outsource experts. This was time consuming and involves cost. If there was Central technical support unit, users could have got solutions to their manageable problems and would have got direction to major problems. So lack of knowledge was a procurement process operation inefficiency.

Consequences: Absence of a central advisory unit forced Procuring Entities and other e-GP users to search experts for simple problems. This involved time and would make the e-tendering operation lengthy. Sometime procuring entities might get wrong suggestion form weak source and that might result incorporation of Unacceptable terms and Conditions, reduced competition and biased tendering. Ultimately the tender would fail to achieve value for money by the procurement.

Mitigation Measures: DPHE can establish a Central Technical Support service that will prove technical support on Procurement and Computer Trouble Shooting. This center can database frequently asked questions that would help a lot to the potential users. Moreover, this center can help the training division to design ICT training for the Executive Engineers, Assistant

Engineers and Sub-Assistant Engineers. This way searching time will be reduced. Tender preparation time will be more efficient. Procuring Entities and other potential users will be confident of the information they get from the Technical Unit. This way inefficiency due to teething problems will be reduced and e-tendering can be completed with less or no errors.

4.5.7 Lack of logistics Support

Among the Executive Engineers interviewed, 40% had identified lack of logistics Support as an inefficiency to Procurement Process Operation.

Problem: All Executive Engineers were equipped with computer and internet facilities. But most of the Assistant Engineers and Sub-Assistant Engineers did not have computer facility of their own. Executive Engineers had to shear their Computer and Internet with Assistant and Sub-Assistant Engineers for a specific period of time. This type of shearing of computer equipment hampered user's normal pace of work. Sometime it took lots of time to do tender evaluation work but due to lack of availability of computer equipment, they could not do the evaluation work effectively with full concentration. Moreover due to this issue, Sub-Assistant Engineer had even tried to share his passwords to his Executive Engineer and requested them to do his evaluation work along with his evaluation work. Thus absence of Computer and Internet Facility clearly caused procurement process operation inefficiency in e-GP system.

Consequences: This lack of availability of computer had made Assistant Engineers and Sub-Assistant Engineers too much dependent on Executive Engineer. This would increase workload of Executive Engineer. Due to high pressure of daily activity, Executive Engineers were forced to make the procurement process slow. Moreover under this situation, Sub-Assistant Engineers made illegal request to Executive Engineers to perform their evaluation work that was to be done by SAE himself. This had been clear violation of code of ethics. This ethical violation could not be traced. But this process involved high risk of erroneous and biased evaluation. If objections or any litigation raised on evaluation process, whole evaluation committee would be responsible and had to face the objection or litigation equally.

Mitigation Measures: e-GP does not need high configuration computer equipment. But they need moderate speed internet speed. It is big challenge for department like DPHE to ensure computer for all. But it can distribute the computer equipment according to need. 2(two) person are enough for evaluation committee in e-GP. As a general practice, Executive Engineer chairs the evaluation committee and other member is Assistant Engineer. At district level most of the Assistant Engineer post is vacant. So Sub-Assistant Engineer perform duty as a member of

2(two) member evaluation committee. Simply developing a database of outstanding computers or old computers at various districts and redistributing them where needed can be a solution to the problem. For internet facility, Executive Engineer may make wifi of his internet connection and share with the Assistant and Sub-Assistant Engineers. This will help them to do procurement related works with full attention and flexibility.

4.5.8   Reinventing the wheel for two tenders having same documents

50% respondents that were being interviewed talked about reinventing the wheel for two tenders having same documentation as an inefficiency in Procurement Process Operation.

Problem: DPHE had to procure Tubewells. Design of these tubewells at Upazila or even at district was same most of the time. For that reason Executive Engineers had to use same drawings and other specification documents again and again. These were quite large files and it took time to upload these files. Executive Engineers or Procuring Entities had to upload same document for every tender. This was like reinventing the wheel again and again. This took extra time in tender document preparation and uploading fragmented files were also very troublesome. This clearly create inefficiency in the tender preparation process.

Consequences: Normally design and specification documents were quite large documents and took time to upload. Uploading same document again and again for every tender was very troublesome. This resulted excess use of time in tender preparation phase that could be avoided. Moreover extra use of internet incurred extra cost for internet use. This would clearly increase procurement process cost.

Mitigation Measures: In this situation DPHE has little thing to do. The farthest step DPHE can take is to request CPTU to open the option to use uploaded documents in various tenders. This will help to optimize CPTU storage capacity. Less bandwidth will be used and CPTU can achieve better server performance. On the other way, DPHE will enjoy the facility to float tenders faster for those having same design and specifications.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

To ensure e-Governance in public procurement, Government of Bangladesh (GoB) is implementing e-GP in public procurement sector since 2011. e-GP is creating a digital culture and opening new opportunity of computer literate workforce. e-GP is a paperless tendering process that can be submitted via the web from anywhere of the world anytime. Department of Public Health Engineering (DPHE) is responsible for procuring drinking water supply and waste management facilities. Failure in Procurement process operation may increase overall procurement cost, delay in procurement and slow down the development work Bangladesh. So procuring at right price, at right time, with right quality from right source are very important to ensure value for money in Public Procurement.

In DPHE, Executive Engineers, Assistant Engineers and Sub-assistant Engineers are involved in conducting Electronic Government Procurement (e-GP). Executive Engineers act as Procurement Entities and Assistant Engineers & Sub-assistant Engineers participate in evaluation and tender opening process as members. All are given training on procurement but most of the Sub-Assistant Engineers lack expertise in ICT. This may put tender opening and evaluation at risk. Moreover all the offices of DPHE are not fully equipped with computer and internet connectivity. In addition to that no study has been conducted before to evaluate procurement process operation inefficiencies. Evaluating the inefficiencies will help to identify the knowledge gaps and will help to mitigate the issues identified. This would help to increase the success rate of procurement and reduce the cost, quality, time, and compliance and litigation risk, thus ensure value for money.

Qualitative Research was conducted because research questions of this study cannot be answered applying quantitative methods. This was due to two reasons: one was that they were largely exploratory in nature and second was to gain general insight into the topic. The aim was not to measure or quantify something, but to improve understanding of inefficiencies in procurement process in e-GP system by obtaining information from on hand users on personal experience and critical incidents. Interview was used as a method to gather qualitative information. Face to face interview was conducted to gather richest data in terms of body language and non-verbal communication as well as what was actually said. The study was be limited on the Executive Engineers of Department of Public Health Engineering (DPHE). Some

10 respondents were taken for interview. Non probabilistic sampling technique was used for the survey. Unstructured questionnaire was the primary source of data. Due to sensitivity of the position, researcher had to go with a non-disclosure agreement with the Executive Engineers. e-Gp system was comprised of Annual Procurement Plan (APP) approval, Tender Noticing, Tender submission, Tender Opening, Tender Evaluation and Notification of Award (NOA). So researchers' research was limited to mainly e-Tendering activity. Tender Award was done in manual process. Implementation, payment was beyond the scope of present e-GP system.

First research question was "Is there any inefficiencies found by the Procuring Entities while working in e-GP system? second one was "What are the causes behind these inefficiencies?" and the third was "What measures can be taken to mitigate these inefficiencies?"

All 10(ten) interview documents were analyzed and it was found that all the respondents mainly focused on 12(twelve) points among them 8(eight) was mainly focused on e-GP related inefficiencies. Analysis was to identify the inefficiencies in procurement process operation in e-GP system, consequences of inefficiencies. Mitigation measures were developed based on the inefficiencies and their consequences. The identified inefficiencies in procurement process operation in e-GP system were Server Incapability, Unplanned Training, Troublesome BOQ Upload process, Supplier Selection failure due to Corrupted File Upload , Lengthy Document Verification in Evaluation, Lack of Knowledge, Lack of logistics Support, Reinventing the wheel for tenders having same documents, Need Assessment Difficulties, Wrong Purchasing Method Selection, Typing Error, Specification Development Weakness. Among the above mentioned inefficiencies first 8(eight) were directly related to tendering operation in e-GP system. Others were problems very important but common to both paper and electronic tendering system. All respondents interviewed had talked about Server Incapability, Unplanned Training, and troublesome BOQ uploading process as an inefficiency in Procurement Process Operation. Next 80% of the interviewees had identified Supplier Selection failure due to Corrupted File Upload as an inefficiency to Procurement Process operation. Lengthy Document Verification in Evaluation process and lack of knowledge were identified as inefficiency by 60% of the respondents. 40% had identified lack of logistics Support as an inefficiency and finally 50% of interviewed talked about reinventing the wheel for two tenders having same documenting as an inefficiency in Procurement Process Operation.

First inefficiency was Server incapacity and causes behind these inefficiencies were uncertain server downtime, slowness of the system and login problem. Consequences to this inefficiency was lengthy procurement cycle, extra workload on Procuring Entities and tender opening failure leading to extra added step like time extension approval in procurement cycle. Mitigation measures will be controlling number of tenders in e-GP, Upgrading Server and reducing delay time in approval process by HOPE. Second inefficiency was Unplanned Training. Problems identified behind this issue were no training need analysis, no monitoring after training and lack of computer literacy of officers specially Sub-Assistant Engineers. Consequences of this inefficiency were lack of confidence, Lack of reliability of work, slowness of procurement activity, and added extra steps like time extension. Mitigation measures will be to perform Training Need Analysis and lack of management of training. In third position, BOQ (Bill of Quantity) upload process was responsible for causing procurement process inefficiency. Cause of inefficiency was inability to convert Excel file to CSV file format. Consequences of this inefficiency were typing error, extra step of corrigendum for correcting the process, time extension process and lack of competition and litigation issue. These consequences can be mitigated by training and developing a conversion file from Excel file to csv file format. Forth inefficiency was tenderers unknowingly uploaded corrupted file leading to become non-responsive in tender evaluation. Tenderer may had potential capacity and capability and may have submitted less price than other failed to be responsive in evaluation process. The main cause behind this failure was lack of computer literacy. Consequence of the inefficiency was failure to select the lowest one that actually had submitted the lowest price. Thus value for money was not achieved in the selection process. Mitigation measures can be to provide technical support by the Procuring Entities. Fifth inefficiency was lengthy and troublesome tender verification system. Causes behind this inefficiency was extra step of document download and printing and slow verification process of these documents. The consequence were added extra cost and time in tender preparation process operation. Mitigation measure is to develop a cloud document verification and storage system to reduce evaluation time and increase accuracy. Sixth inefficiency was lack of knowledge of Assistant and Sub-Assistant Engineers especially in ICT. Causes behind this inefficiency were lack of training and motivation and also logistics problem. Consequences of this inefficiency was prolonged tender preparation time. Mitigation measure can be to implement Central Technical Support Service to provide technical support both in procurement and ICT. Seventh inefficiency in Procurement process operation was lack of logistics support. The main cause behind this inefficiency was absence of computer equipment and Internet facility to most of the Assistant

and Sub-Assistant Engineers. The consequence of this lack of logistics were violation of code of ethics, high risk of erroneous and biased evaluation and litigation problem. The Mitigation measures are centrally redistributing Computer equipment and creating wifi zone in each Executive Engineer's office. Final identified inefficiency was reinventing the wheel for two tenders having same documentation. The causes behind this inefficiency was Specification and design were same for many tenders and tender documents had to be uploaded again and again like reinventing the wheel and lengthens tender preparation time. Mitigation measures is to develop a system that will save the uploaded documents in cloud and Tenderers can use it again and again.

5.2 Recommendations

Recommendations are developed based on research findings. Following steps can be taken to improve procurement process operation efficiency.

1. Controlling number of tenders to be floated in e-GP system each year. This will give better performance of server under present circumstances.
2. Upgrading server will also help to improve server performance.
3. Planned Training will develop users' confidence and reliability of work.
4. Procuring and distributing csv conversion tool to all Executive Engineers. This will improve BOQ upload performance.
5. Training the Tenderers in ICT increase their capacity in tender submission.
6. Developing a cloud document verification and storage system to reduce evaluation time and increase accuracy will increasing tendering process efficiency.
7. Implementing Central Technical Support Service at DPHE to provide technical support both on procurement and ICT. This will boost the procurement and ICT efficiencies of the users.
8. Ensuring computer and internet for procurement related Assistant and Sub-Assistant Engineers.

5.3 Convenience

For the Academicians inefficiencies in Public Procurement process operation in e-GP are Server Incapability, Unplanned Training, Troublesome BOQ Upload process, Supplier Selection failure due to Corrupted File Upload , Lengthy Document Verification in Evaluation, Lack of Knowledge, Lack of logistics Support, Reinventing the wheel for tenders having same

documents, Need Assessment Difficulties, Wrong Purchasing Method Selection, Typing Error, Specification Development Weakness.

For the practitioners improving public procurement process operation in e-GP involves tender loading management in e-GP system, upgrading server operated by CPTU, planned procurement and ICT training, motivating users, training the tenderers, implementing Central Technical Support Center, ensuring computer equipment and Internet facility to all Assistant and Sub-Assistant Engineers.

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