A Study on The Implementation of e-GP(Electronic Government Procurement System) in Public Works Department: Impact on Present Procurement Practices and Future Scopes

Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of
Masters in Procurement and Supply Management

Submitted by

Humaira Binte Hasan

Batch-10, Fall 2015, ID No. : 15282006

Masters in Procurement and Supply Management
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BRAC Institute of Governance and Development (BIGD)
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CERTIFICATE

This is my pleasure to certify that the dissertation entitled "**A Study on the Implementation of e-GP (Electronic Government Procurement System) in Public Works Department: Impact on Present Procurement Practices and Future Scopes"** is the original work of Humaira Binte Hasan that is completed under my direct guidance and supervision. So far I know, the dissertation is an individual achievement of the candidate's own efforts, and it is not a conjoint work.

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

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DECLARATION

I hereby declare that the dissertation entitled "**A Study on the Implementation of e-GP (Electronic Government Procurement System) in Public Works Department: Impact on Present Procurement Practices and Future Scopes**" submitted to the BRAC Institute of Governance and Development, BRAC University for the degree of Masters in Procurement and Supply Management is exclusively my own and original work. No part of it in any form, has been submitted to any other University or Institute for any degree, diploma or for other similar purposes.

Dhaka: June 2016.

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ABBREVIATIONS

APP	Annual Procurement Plan
CPTU	Central Procurement Technical Unit
e-CMS	Electronic Contract Management System
e-GP	Electronic Government Procurement
ICT	Information and Communications Technology
KPI	Key Performance Indicators
NOA	Notification of Award
PAs	Procuring Agencies
PEs	Procuring Entities
PPA	Public Procurement Act
PPR	Public Procurement Rule
PWD	Public Works Department
RFP	Request for Proposal
RFQ	Request for Quotation
TEC	Tender Evaluation Committee
TOC	Tender Opening Committee

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CHAPTER 1

INTRODUCTION

1.1 Background of the study

In this era of electronics and technology, procurement process have now reached to another advanced level where purchasing process is done through an automation tool commonly known as E procurement system. Electronic procurement has been widely embraced by the governments seeking the administrative efficiencies and cost reduction experienced in the private sector. Following the trend of the developed countries, Bangladesh also has taken a step ahead in adopting electronic government procurement system that is known as e-GP.

In Bangladesh, Central Procurement Technical Unit (CPTU), IME Division of Ministry of Planning, is responsible for the development, ownership and operation of National e-Government Procurement (e-GP) portal of the Government of the People's Republic of Bangladesh. 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). Initially, E-Tendering has been introduced by the CPTU with 4 targeted agencies: LGED, RHD, BWDB and REB. The system rolled out to 291 PEs of those 4 sectoral agencies is now expanding to all the PEs of the government up to Districts and sub-Districts level.

Public Works Department (PWD), under the Ministry of Housing and Public Works, is the pioneer in construction arena of Bangladesh. Over about two centuries, PWD could successfully set the trend and standard in the country's infrastructure development. The contribution of PWD encompasses the entire spectrum of physical and social infrastructure for national development, national security and international relations. The range of responsibilities of PWD covers from design and construction of buildings to repair and maintenance, land valuation, preparation of specifications etc.

As the e-GP system has been expanded, PWD has undertaken the system in its procurement practice. In the start of 2014, PWD initiated training for the officers, contractors and all other personnel who has direct involvement with the procurement

practice in PWD. Eventually e-GP system was imposed in the present procurement practice partially. As a result, PWD has been successfully completed 116 tenders under e-GP system till date. But still there is a long way to go.

PWD has faced challenges during the implementation of e-GP system. This resistance has come because of a completely changed system which was hard to adapt by both the officials and the contractors. But as PWD has to undertake its major part of procurement practice under e-GP system, PWD must identify the challenges and the way to overcome it for further improvement of the procurement practice in the organization. There also remains a question that to what extent it is possible to implement e-GP in 100% of the procurement activity. This is due to the nature of work PWD deals with is not always compatible with the characteristics of e-GP system.

1.2 Research Questions

For the research purpose, the following research questions were required to ask:

- Does e-GP system is functioning well in PWD?
- Does e-GP is performing well after implementation in PWD?
- Is e-GP effective for all kind of procurement in PWD?
- What is the best solution to the procurement system in PWD?
- How the desired performance of e-GP implementation in PWD can be achieved?

1.3 Research Objective

The objective of this study is

- To identify the benefits and challenges of using e-GP in PWD.
- To identify the feasibility of using e-GP as a full-fledged system.
- To identify areas of improvement in implementing the e-GP system in PWD and ensure transparency in the procurement process.

1.4 Rationale of the Study

E-GP is crucial in improving public sector procurement efficiency, governance and accountability. As public procurement expenditure covers almost 70% of the ADP in Bangladesh, it is important to ensure a robust procurement process and project

management for the development program of the country. E-procurement reduces administrative costs and bureaucracy by helping the country avoids repeating tasks such as registration and certification of contractors, allowing for additional effective control mechanisms and reducing paperwork, improving transparency and reduces transaction cost and time for tendering.

E-procurement has already been introduced in PWD for last 2 years. Implementation of e-GP will surely bring the benefits those other government agencies are enjoying. But as it is completely a new adaption for PWD it will again face some challenges. These challenges may appear from two perspectives e.g. one from the resistance to change, capital investment, skill development etc. Other common challenges are: huge cost of IT infrastructure, scarcity of skilled manpower, learning curve period, difficulties in understanding the system for all, unwillingness of contractors to use the system, difficulties in coordination when working with other departments or ministry etc. Another perspective of the challenge is the compatibility of e-GP with the work nature of PWD. For example, PWD not only construct major construction works, but a major portion of its work is repairing and maintenance of existing structures. This repair and maintenance works are very small works with very low amount of estimated cost. So it is somehow becomes luxurious to implement e-GP system for such small projects. Again PWD is responsible for emergency works with national importance such as works for Honourable President's House, Honourable Prime Minister's office and residence, National parliament house etc. These emergency works can sometimes be impossible to anticipate earlier and has to be completed as soon as it is required, so e-GP system will not fit in these special circumstances.

The research work will try to develop some recommendations to overcome the barriers in implementing e-GP and making able PWD to ensure transparency and accountability in its future procurement practice.

1.5 Scope and Limitations of the Study

This study will assess the present practices of procurement in PWD and the impact of implementation of e-GP to ensure transparency and accountability in procurement activity.

From the study, it will identify the effectiveness of e-GP and the ways of improvement of e-GP for making the system more effective and efficient with respect to PWD in future.
The questionnaire survey will only be limited to PWD officials and procurement practitioners of PWD specially procuring entity (PE). It will not include tenderers or other participants of the e-GP process due to short duration of time.

1.6 Methodology

Proposed study will start with theoretical analysis of the e-GP procedure. The study is an exploratory one and will use both quantitative and qualitative data. The study will adopt an appropriate sampling technique to attain the research objective.

Analysis of last 2 (two) years data related to the e-GP activities will perform in this study. This analysis will depend on both primary and secondary sources for necessary data and information.
Questionnaire survey is one of the main sources of the study to collect primary data. A structured/unstructured questionnaire will be used for this purpose. It will be distributed to the respondent for their voluntary filling up and it will be tested before adoption.

Secondary data will include printed and unprinted materials, internet etc. Survey results (questionnaire, interview checklist) will be arranged for validation of secondary data and information also. The research will intends to conduct an expert survey among selected officials and staffs of PWD who are directly related to e-GP operations.

From the above analysis and with expert opinion the ways of future improvement of e-GP system with respect to PWD will identify in this study.

1.7 Organization of the Study

The organization of this study is summarized below:

i. Chapter 1 discusses about the background, rationale, and objectives of this study. It highlights the problem statement why the writer opts for this study. It also describes the limitations of this study as desk review.

ii. Chapter 2 describes the literature review of this study. The chapter in a nutshell tries to give a good picture of how the electronic government procurement is being practiced, what are the benefits and challenges of using electronic procurement, what are the scopes for improvement of the practice and so on.

iii. Chapter 3 describes the approach and methodology, sampling process and analysis of the sampling technique both in primary level and secondary level.

iv. Chapter 4 is a chapter outlining the sampling analysis, data analysis, forming observations on what categories, types of observations, segregation of observations from various angles to establish hypothesis. It also focuses the trend analysis of observations to form opinion.

v. Chapter 5 provides conclusion and recommendations of this study based on the information leading to conclusion.

vi. This study also contains bibliography and annexes to support reference of the study material.

CHAPTER 2

LITERATURE REVIEW

2.1 Procurement

Procurement is the act of acquiring, buying goods, services or works from an external source. It is favorable that the goods, services or works are appropriate and that they are procured at the best possible cost to meet the needs of the acquirer in terms of quality and quantity, time, and location. Corporations and public bodies often define processes intended to promote fair and open competition for their business while minimizing exposure to fraud and collusion.

2.2 E-Procurement

E-Procurement refers to the use of internet-based integrated information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Vaidya et al.2006) While there are various forms of e-Procurement that concentrate on one or many stages of the procurement process such as e-Tendering, e-Marketplace, e-Auction/Reverse Auction, and e-Catalogue/Purchasing, e-Procurement can be viewed more broadly as an end-to-end solution that integrates and streamlines many procurement processes throughout the organization.

2.3 E-procurement drivers

E-procurement has become one of the most successful applications of electronic commerce having been implemented by many companies seeking better business processes. Cost saving, improved efficiency, measurement and single data entry are considered as the three catalysts driving growth in the e-procurement area (Vanjokin.d). Other driving factors of e-procurement are namely, optimizing strategic sourcing policy, supporting spend savings targets, establishing common processes, setting a standard platform for managing procurement spend, sharing of knowledge between business units, movement of procurement managers from transactional to strategic activities, improving productivity of purchasing personnel, compliance of spend, improved supplier management and selection, better integration with suppliers, auditable spend management

data, achievement of buying leverage, centralize control, reduction in supplier numbers, Raising standards within procurement function

2.4 E-procurement problem factors

Along with the drivers there also remain some problem factors of implementing e-procurement system in an organization. The related problem factors could be, unclear original business case, poor legacy systems and data, visibility on spend not solved, need to use suppliers' systems to get best deals, change management, training requirements, different accounting / reporting rules globally, misunderstanding of what the technology could deliver, finding new people with right skills, integration to external platforms, wrong targets set initially, re-defining task and roles role of internal communications, not possible to add all suppliers, buying systems not user-friendly, software needs updating over time, reducing supplier numbers proved difficult etc.

Above mentioned problems are need to be identified at the very beginning of implementation of e-procurement system.

2.5 Electronic Government Procurement (e-GP)

Electronic Government Procurement (e-GP) is the application of an efficient high quality management framework to public sector procurement, facilitated through online information and processes. E-GP has the potential to strengthen the accountability, transparency, efficiency and effectiveness of this sensitive high value government function (The World Bank, 2006).

E-Procurement is here defined as the application of technology and infrastructure to the following aspects of the procurement environment:

a) Tendering: the acquisition of high value, low volume goods, works and services by seeking bids (proposals) via a public process followed by the evaluation of bids and award of contracts.
b) Purchasing: the acquisition of low value, high volume, goods, works and consulting services by direct quote in the open market or from pre-qualified suppliers, and payment for the purchase.

c) Management of the procurement function: the development and management of contracts, consolidation of procurement data to provide public information and aid future decision making, and the evaluation of the achievement of procurement outcomes for business and the community.

The e-GP systems are supported by a number of critical key components. For example, having a viable information and communication infrastructure would provide suppliers and buyers with good quality, inexpensive access to the Internet.

There is also strong support from the components of:

- Government leadership and policy that sets the direction for e-GP
- Legislation and regulatory process that are consistently applied and monitored
- Comprehensive procurement planning and management in both the procurement agencies and in agencies across government that supports the integrity, transparency, efficiency and effectiveness of the government procurement market
- Active integration of supplier
- Support increased access to procurement opportunities, a fair competitive market, and a more streamlined and consistent processes.

Many of these components should be in place in supporting the current approach to government procurement.

2.6 Public procurement in Bangladesh

A potent tool in the fight against corruption in public procurement is procurement reforms, aimed to streamline and regulate the process of procurement (Lennerfors 2007). But Bangladesh had no one standard structured process for all public procurement in its early years. A Compilation of General Financial Rules (CGFR) had regulated public procurement procedures and practices in Bangladesh which were developed during British period with slight revision in 1951. But these tendering procedures resulted in some unsatisfactory features such as poor advertisement, a short bidding period, poor specifications, nondisclosure of selection criteria, award of contract by lottery, one-sided contract documents, negotiation with all bidders, rebidding without adequate grounds, other miscellaneous irregularities, corruption and outside influence etc. After Bangladesh's

independence in 1971, few changes were made to these rules in 1994 and 1999 respectively (Policy Note, IGS, BRAC University, 2012). In an intention to establish good governance in the public procurement system, the Government of Bangladesh came up with new public procurement regulations in October 2003 which has been influenced by World Bank and ADB standard procurement documents. But certain limitations in PPR, 2003 led to the enactment of the full-fledged public procurement law (Public Procurement Act - PPA) in 2006. Later Public Procurement Rules (PPR) was issued in 2008. The introduction of the Act and Rules has given public procurement a standard legal and administrative framework that brought all procurement system of public sector under one common roof. This guideline clearly defines and elaborates the whole process of procurement from sourcing to contra award and contract management to all procuring entities and officials. This legal framework was successful to bring transparency and value for money to the public service. But despite of having such a good law, public procurement practice is yet suffering with some vulnerability such as violence, obstruction in submitting tender, snatching of tender box, syndicating tenders etc. furthermore; there are still some scopes for manipulation in tendering process. This brings to the introduction of such a fair system that is electronically operated with little or no scope for such manipulations that is electronic government procurement system also known as e-GP.

2.7 The e-GP System development in BD

Finally to face the challenging environment in public procurement practice that exists in Bangladesh, The Second Public Procurement Reform Project (PPRP II) has introduced electronic procurement and on-line performance monitoring followed by the success of PPRP I with the major contribution from World Bank. PPRP II has been rapidly expanded in four key government agencies, namely RHD, LGED, BREB and BWDB.

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. It is hosted in the e-GP Data Center at CPTU. The web portal is accessible by the PAs and PEs through internet for their use.

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

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

2.7.1 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.

2.7.2 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. 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 is used by all concerned, for procurement of goods, works and services using public fund.

2.8 Stakeholders of the e-GP System

The e-GP System supports its user with secured access to his/her related functions. The prime users or stakeholders of the e-GP system are:

- Tenderers/Contractors/Applicants/Consultants
- Procuring Agencies/Entities.

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

2.9 Working procedure of e-GP system in BD

The e-GP System Comprises of following key Modules/Functionalities:

2.9.1 Centralized Registration System

All users (stakeholders/actors) must be registered in the e-GP System under an appropriate user category of procurement process in order to have appropriate access points and to get working dashboards with authorized functions in e-GP System.

Registration should be done through the online registration page of the e-GP system followed by due diligent post verification if CPTU considers it finds it necessary. The intended user must provide all required information, digital documents, and accept the terms and conditions of e-GP system use. If any misinformation is identified or any document submitted found false, and the user does not correct that false, the user account shall be cancelled or suspended according to the specified law.

There is an option for registration in the online system for Tenderer/ Applicant/ Consultant, Procuring Entity (PE)/ Procuring Agency (PA), Scheduled Bank, Development Partners, Opening Committee/Evaluation Committee and Approval Authority, System Administrators and Auditors, Operation Maintenance and Management Entity, Media.

2.9.2 Annual Procurement Planning (APP) Preparation and Publication

Procuring agencies / entities should prepare their annual procurement plan in the format prepared 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 procuring agencies/entities through e-GP system. The e-GP system will guide the agencies/entities 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 Annual Procurement Plan through appropriate approval from the authority.

2.9.3 Electronic Tender Document Preparation

Dynamic Forms for preparing electronic tender documents and for other activities of the procurement process shall be prepared and updated only by the CPTU or the entity authorized by the CPTU. Procuring entities may change and update only the specific sections of the template and its contents. Procuring entities get access to all the available standard procurement document templates for preparing Invitation to Tender, Proposal and documents for procurement of goods, works and services.

The Tenderers/ Applicants / Consultants must prepare their Tenders/ Proposals online, and documents required to be uploaded within the time specified in the Invitation for Tenders / Proposals after signing of the same with the e-Signature or Digital Signature, whichever applicable, by their authorized representative.

2.9.4 e-Tendering

2.9.4.1 e-Advertisement

Procuring entities should prepare Invitation of Tenders/ Proposals using online template available from their secured dashboard. The detailed description of the Goods/ Works/ Services, time schedule. Condition etc. including the tender documents/ RFPs for e-Tendering shall be made available on the procurement opportunities section of the e-GP system and shall be available to all interested users to search and read the e-advertisement.

2.9.4.2 Online Entry/Uploading Tender Document

Tenderers /Applicants / Consultants must submit their Tenders/Proposals with documentation online, to be uploaded by the time specified in the Invitation for Tenders/Proposals after signing of the same with the e-Signature or Digital Signature, whichever is applicable, by their authorized representatives.

2.9.4.3 Pre-Tender/Application/Proposal Meeting

E-GP system carries out online Pre-Tender/Application/Proposal meeting on the date, time and venue, if required, as stipulated in the tender notice/documents. Responses/clarification of the queries relating to the Tender or RFP document should be posted by Tenderers/Applicants/Consultants online before or during Pre-Tender/Application/Proposal meeting.

2.9.4.4 Tender/Application/Proposal 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 /Applicants/Consultants who have received the Tender/Application document or RFP.

2.9.4.5 e-Lodgment

A tender/ application /proposal lodged electronically is deemed for all purposes to be the true and legal version, duly authorized and duly executed by the Tenderer/Applicant/Consultant and intended to have binding legal effect. E-Signature/Digital signatures are necessary due to the security system for identity and authentication purposes. Identity of the Tenderer/Applicant/Consultant may be verified with a follow-up due diligence process.

2.9.4.6 Tender/ Application/ Proposal Opening

The Procuring Entities receiving the tenders/proposals should form a Tender Opening

Committee (TOC). Access to the dashboard for the TOC/POC shall be available only after the specified Tender/ Application/ Proposal opening date/time. The Committee should fill out the Tender/ Application/ Proposal Opening Sheet generated by the system as PPR-2008 requirements.

2.9.5 e-Evaluation

2.9.5.1 Formation of Evaluation Committees

The Procuring Entities receiving the Tenders /Applications / Proposals should form a Tender Evaluation Committee (TEC)/ Proposal Evaluation Committee (PEC). Procuring Entities should ensure that the so formed Committees have sufficient knowledge and are conversant with the available tools offered by the e-GP system, i.e. the way to enter, view, update scoring criteria and weightings, automated analysis of Tenders/ Proposals, audit trails and reporting etc.

2.9.5.2 Use of e-GP system by evaluators

Access to the Dashboard for the Evaluation Committee shall be available only after the specified date/time and the e-GP system has been configured by the procuring Entities. At the outset, 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/PEC shall be available only at the specified date and time configured in the e-GP system by the Procuring entities.

2.9.6 Approval, Notification of Award (NOA) and Contract Signing

Approval of the evaluation report will be routed in e-GP system through the workflow to appropriate Approving Authority as stipulated in PPR-2008 along with subsequent amendments. Procuring entity will issue NOA to successful evaluated tenderer/ applicant/consultant online (i.e. via tenderer/ applicant/consultant dashboard, email, SMS as configured in preference settings). E-GP system provides the facility to sign the contract online between Procuring Entity and the tenderer/ applicant/consultant, but may also choose to sign offline in compliance with the PPR 2008 along with the subsequent

amendments. In case of offline contract signing, PE must enter the contract details, contract documents, and schedules of deliveries, contract execution plan in e-GP system.

2.9.7 e-Contract Management

2.9.7.1 Contract progress monitoring and control

The Procuring Entities should nominate individuals for managing contracts, shall have the required 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 of the Contract execution under e-Contract Management System. Procuring entities should keep updated contract with the project schedules, deliverables, Service Level Agreements if any, specifications, amendments and other information in the e-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.

2.9.7.2 Certification and Payment Processing

The e-GP system provides the standard forms for issuing different types of certifications such as acceptance 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.

2.9.7.3 Contract agreement administration

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

2.10 Benefits of e-procurement

The primary motivation for companies adopting e-procurement solutions has been cost reductions and process efficiencies. A research by Quesada et al. (2010) proposes that e-procurement technologies affect positively to company's procurement practices and procurement performance. Positive impact on procurement practices facilitates the development of operational tasks in the procurement function, which leads to continuous improving. As the operational tasks are performed more effectively the procurement performance is enhanced.

According to Davila et al. companies using e-procurement solutions report savings of 42 percent in purchasing transactions costs. Another research by Croom and Johnston (2003) found that e-procurement implementation can have up to 75 % cost reduction in procurement process costs and 16 – 18 % reduction in purchasing price for indirect purchases. According to Croom and Brandon-Jones (2005) complying with existing contracts is an important mechanism for realizing lower prices and discounts. The savings that come out from automating the process derive from eliminating paperwork and human intervention, reducing transaction costs and cycle time and also from streamlining and automating the audit trail and approval process (Neef, 2001 s.48).

Many author identified benefits of e-procurement from different perspective.

According to Attaran&Attaran (2000), benefits of e-procurement can be categorized by:

- Operational benefits such as improved financial control, elimination of paperwork, improved auditing and better security, Enhanced efficiency and Flexible access anytime.
- Strategic benefits such as Consolidation of purchasing practices, Accelerated information flow, Freeing stuff to do other work, Faster response to the markets, Boosted compliance and Improve chance to win new business
- Opportunity benefits such as Enhanced image Improved buyer / supplier relationships and Better accuracy

Croom& Johnston (2003) see the benefits from the point of:

- Cost efficiency such as Reduced transaction costs, Reduced purchasing price, Reduced internal processing costs, Reduced storage and handling costs

- Process compliance for example, Improved budgetary control, Robust process performance, Greater transparency and accessibility across the whole process, Improved system reliability, Improved managerial information
- Internal customer satisfaction like Increased employee satisfaction and More control over own spending

Finally, Piotrowicz&Irani (2010) state the benefits as following categories:

- Customer as Increased customer service (including internal customers)
- Business process benefits such as Elimination of non-value added activities, Improved order processing, Improved procurement process, Improved supplier searching, Improved control Elimination of exceptions, Reduced problems with suppliers Elimination of paperwork
- Learn and growth benefits like Improved access to information, Increased reporting capabilities, Increased corporate control, Competitive advantage, Improved cooperation and communication with other business units
- Financial benefits for example Reduced bank transfer costs, Reduced transaction costs, Reduced buying costs, Reduced service costs, Increased efficiency, Faster payments, Reduced warehousing costs, Fraud prevention etc.

No matter how different author categorized the benefits of e-procurement the general statement remains the same that is efficiency of the procurement process with increased transparency and reduced cost.

2.11 Challenges and risks of e-procurement

A research by Smart (2010) identifies that there are numerous in implementation projects to achieving in full the benefits which e-procurement offers.

Even though the benefits of adopting e-procurement solutions can be significant, there are some internal and external challenges and risks related to the adoption of e-procurement. In a research by Smart (2010) the researcher came to a conclusion that there has been a long term problem with identifying value from 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.

A study by Angeles and Nath (2007) identified three important challenges to e-procurement implementation:

- lack of system integration and standardization issues
- immaturity of e-procurement-based market services and end user resistance
- 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 hard to find reference models for benchmarking. 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 implementations projects. The immaturity of suppliers and the lack of preparation is also a challenge for many companies. The other challenge here relates to the resistance of end-users towards operating the e-procurement solution. To prevent this Angeles and Nath (2007) state 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 (Angleles&Nath 2007). According to Gilbert (2000) integrating e-procurement solutions

with other business applications (e.g. accounting) can be more complex than businesses think.

In a research by Davila et al. (2003) four risks associated with adopting e-procurement technologies were identified. The authors stress that these risks need to be carefully addressed before these technologies are adopted.

Internal business risks:

Businesses have 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 risk

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.

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 suppliers, fake bids etc.

These are the main risks identified in implementation of e-procurement. Nonetheless, this process must be planned and executed thoroughly in order to minimize the challenges and risks companies might face.

2.12 Public works department (PWD)

Public Works Department (PWD), under the Ministry of Housing and Public Works, is the pioneer in construction arena of Bangladesh. Over about two centuries, PWD could successfully set the trend and standard in the country's infrastructure development. It plays a pivotal role in the implementation of government construction projects. It also undertakes projects for autonomous bodies as deposit works. Public works Department has highly qualified and experienced professionals forming a multi-disciplinary team of civil, electrical and mechanical engineers who work alongside architects from the Department of Architecture. With its strong base of standards and professionalism developed over the years, PWD is the repository of expertise and hence the first choices among discerning clients for any type of construction project in Bangladesh. Besides being the construction agency of the Government, it performs regulatory function in setting the pace and managing projects for the country's construction industry under the close supervision of the Ministry of Housing and Public Works.

The contribution of PWD encompasses the entire spectrum of physical and social infrastructure for national development, national security and international relations. Its activities span the length and breadth of the country including remote areas and difficult terrain. The architectural plans and designs of almost all Government infrastructural projects are done by the Department of Architecture in close consultation with PWD. PWD is responsible for following range of works:

- Construction of Buildings for Other Agencies on a Deposit Work Basis
- Maintenance of Public Parks
- Preparation of Book of Schedule of Rates and Analysis of Rates for Construction & Maintenance of Public Buildings
- Design and Construction of Public Buildings except those of RHD, T&T, Postal Department
- Construction of National Monuments
- Repair and Maintenance of Public Buildings
- Preparation of Book of Specifications and Code of Practice
- Acquisition and Requisition of Land for construction Work
- Procurement of Materials & Equipment Required for Construction Work
- Valuation of Land and Property and Fixing of Standard Rent

With this huge volume of procurement activities, PWD must ensure effectiveness, transparency and accountability in its process.

2.13 Introduction of e-GP in (PWD)

Implementation of e-government procurement was introduced in Bangladesh with its implementation in four target agencies. Public Works Department was not one of them. But as the e-GP system is performing successfully, PWD was expected to implement the system in this organization. Following this, PWD started a target for starting e-GP in its procurement activity from the end of the year 2013 and initiated training on e-GP system to all procuring entity, contractors and other related officials of PWD responsible for operating the system. The Electronic and Mechanical wing of PWD is working their heart and soul to establish the system in PWD. Officials of other wings are supported with training and logistics support like internet access. As a result, total of 116 tenders has been published following e-tendering process. It is undoubtedly a great achievement as PWD has just started with the process.

But PWD also faced some initial problems while trying to implement the e- government procurement system in the organization. The unwillingness of a major portion of stakeholders especially contractors to accept the system was one of the main issues. It was due to the lack of knowledge and resistance to change as they have the fear to lose their work volume. However resistance to change from the traditional tendering method came from all the stakeholders including procuring entities because they felt the system was uncomfortable to use.

Apart from unwillingness, there also comes a question of feasibility of using e-GP in all procurement activities of PWD due to the nature of the work. This will be discussed in the analysis part of the paper.

So far, PWD is performing quite well and managing with e-GP system adequately. Now analysis will show the remaining problems with possible solution for future improvement the procurement system in PWD and also look for the fact whether the use e-GP system is really a practical solution for all type of procurement that PWD deals with.

Chapter 3

Methodology

3.1 General

This chapter is dedicated to the steps and methodology that has been followed for the evaluation of e-GP system in Public Works Department after implementation. It also includes the collection of primary and secondary data related to e-GP performance and total activities.

3.2 Sample procedure:

For the dissertation purpose, two types of data have been collected. These are as follows:

- Primary data
- Secondary data

Primary data were collected from the answers of questionnaires, where a set of 18 questions were prepared to get information regarding ongoing e-GP of PWD. First few questions are related to the respondent's personal information, but most of the questions were aimed to gather the information related to the e-GP practice in PWD and respondent's knowledge about e-procurement.

The questionnaire was sent through the online forum of the organization. This was done to ensure the easy access to all range of officials.

In case of secondary data, I used official website of PWD to collect the information of e-GP related works of last 2 financial years.

3.3 Collection of Primary data

Questionnaire survey is one of the main sources of the study to collect primary data. A structured questionnaire was used for this purpose. It was distributed to the respondent for their voluntary filling up and answers were tested before adoption. The questionnaire was developed to assess awareness, knowledge and available ICT infrastructure of PWD procuring entities.

The primary research methodology of this study also includes virtual interviews among officials of PWD who are directly related to e-GP operations.

Respondents are selected randomly, and they were requested for their response. It is always a better option to conduct face to face interview, but for time and resource constraint, it was not possible to communicate with all the procuring entities personally. So an official online forum of the organization was chosen as a platform so that the questionnaire is accessible to all procuring entities who are active in the forum.

Though the questionnaire was generated in a wide platform of officials of PWD, number of respondents was few compared to the number of officials. Only 12 active respondent data were collected. This might be due to the tremendous working pressure of procuring entities. Out of these 12 respondents, 7 of them were Assistant engineers. But their responses were effective because most of the time assistant engineers are involved in the e-procuring activities as the representative of procuring entity. 4 of the respondents were sub-divisional engineers working under different divisional offices across Bangladesh. One of the important respondents was an additional chief engineer of a prime zone office of PWD who is the approving authority of all procuring activity of that particular zone.

3.4 Collection of Secondary Data

Secondary data include printed materials, data which are collected from website of PWD and e-Procurement website of Bangladesh. e-GP works related data were collected from PWD website and from different PWD offices.

Chapter 4

Data Analysis & Discussion

4.1 General

This Chapter describes the details analysis of both the primary and secondary data. Discussion with this details analysis is also highlighted in this chapter.

4.2 Analysis and Discussion on the Data

4.2.1. Part A:

Designation of the Respondent

In the following table respondent designation is presented. Result reveals that among the respondents Assistant Engineer is highest 67%, this is may be due to the enthusiasm amongst the fresher's about electronic procurement that were eager to participate in the survey. Another reason could be most of the assistant engineers often represent their PE's as they are designated as staff officers to Procuring entities. Question might arise why there is no respondent who is directly related to procuring activity such as executive engineers. The reason is they are highly occupied with their work and could not formally participate in the survey. But they were cordial enough and answered through informal interviews.

Table 1: Designation of the Respondent

Designation of the Respondent	%
Assistant Engineer	67
Sub-Divisional Engineer	25
Additional Chief Engineer	8
Total	100

Years of experience in procurement activities of the Respondent

PWD is a public sector engineering organization and all the engineers are involved with procurement at different level. Designation of Executive engineers and above have more than 10 years of experience in procurement activities. In this survey, 83% respondents have 1-5 years of experience in procurement.

Table 2: Years of experience in procurement activities of the Respondent

Years of Experiences	%
Less than 1 Year	8
1-5 years	84
More than 10 years	8
Total	100

Annual Volume of the Procurement

While the cost savings can be significant, de Boer et al. (2002) argue that the total volume of purchases needs to be high, as well as the amount of internal customers, in order to reach savings. Following this argument the annual volume of procurement activity query has been included in the survey.

This data was collected as the total number of procuring activities in a year. The number of procurement work has been focused because the typical repair works almost has similar cost to each other and of low amount too. 50% of the responses show that annual volume of procurement is between 100-300 numbers.

Table 3: Annual volume of procurement

Years of Experiences	%
Less than 100	42
100-300	50
More than 300	8
Total	100

Average estimated cost for any single procurement:

Participants were asked to mention the average estimated cost for any single procurement because this gives an idea whether adopting e-procurement is being effective in the department with respect to time and cost saving for example procurement with less than 1 lakh BDT is less compatible with e procurement adoption. Participant were asked to exclude projects with high estimated cost as they are ought to be completed with e procurement without any hesitation. The focal point here is the APP included work with relatively small estimated cost.

Table 4: Average estimated cost for any single procurement

Average estimated cost	%
Less than 1 Lakh BDT	25
1-5 Lakh BDT	33
5-10 Lakh BDT	17
More than 10 Lakh BDT	25
Total	100

Documents used for procurement:

It is quite evident that all public organizations follow standard documents for procurement activities. With no exceptions, PWD also follow PPA and PPR as procurement guidelines**.**

Respondents have training on PPA and PPR 2008

Knowledge of PPA and PPR helps to perform procurement related activities in a better way. Regarding this PWD stands in a strong position. 3 of the respondent do not have any formal training on PPA and PPR but yet they are well acquainted with these guidelines. Others have formal training on PPA and PPR.

Table 5: Training on PPA and PPR

Training on PPA and PPR	%
Yes	75
No	25
Total	100

Sending tender notice to CPTU website:

There is a guideline which makes it mandatory to publish a tender notice in CPTU website even if it is not done under e-GP system. This is valid when the cost of a procurement activity exceeds a certain limit. The responses are listed in the following table that shows majority sends the tender notice to CPTU website and those who do not, actually the work volume do not exceed the limit mentioned.

Table 6: Sending tender notice to CPTU website

Sending tender notice to CPTU website	%
Yes	75
No	25
Total	100

Method of sending tender notice to e-GP:

This data gives a hint about the infrastructure to support e-procurement activities. Majority of the responses has been seen to send the tender notice via e-mail. So internet connectivity and the knowledge about using the internet is sound. Others send their tender notice by CD or hardcopy**.**

Table 7: Method of sending tender notice to CPTU website

Method of sending tender notice to CPTU website	**%**
Hardcopy	8
E-mail	59
CD	33
Total	100

4.2.2 Part B:

Part B has been structured to focus on the e-GP related activities and identify the problem areas and to look for solution with collected data, suggestions and opinions.

Respondents have training on e-GP

The following table shows that whether the responders have training on e-GP or not. Result reveals that, 75% respondent participate in e-GP training. All of the trainings were organized by PWD's own facility and initially resource person were from outside the department but eventually replaced by in-house trainers. Rest of the 25% has no training in this ground. But PWD training academy is conducting training on e-GP very frequently and the percentage on non-trainees on e-GP will drastically decrease in near future.

Table 8: Respondents have training on e-GP

Training on e-GP	**%**
Participate in the training on e-GP	75
Not Participate in the training on e-GP	25
Total	100

Respondent's knowledge level about the e-GP system

As a comparatively new concept to PWD, knowledge level about the e-GP system amongst officials is an important concern. To obtain this data different range was given. Result shows that everyone has more or less little idea about e-GP system, but some have lack of practice.

Table 9: Respondent's knowledge level about the e-GP system

Respondent's knowledge level about the e-GP system	%
Clear Understanding	17
Clear idea but lack of practice	50
No detail idea	33
Absolutely no idea	0
Total	100

Procurement activity using e-GP:

e-GP is a comparatively new concept in PWD. Unlike RHD or other departments it has not fully developed e-GP in all procurement activities. So this question aims to identify the extent of using e-GP. Table shows present situation of PWD.

Table 10: Procurement activity using e-GP

Procurement activity using e-GP	%
Yes	33
No	67
Total	100

Percentage of e-procurement activities in annual procurement

Next question was dedicated to those who performed any procurement activity using e-GP. Participants, who did not perform any e-GP, could avoid the question. Results showed that PWD Sylhet Zone has a remarkable achievement in using e-GP and 70% of its annual procurement has been done under e-GP. In previous question most of the participants said they did not perform any procurement using e-GP and they skipped this question. Here is to mention that there is an official order of PWD stating that at least 20% of APP works should be done under e-GP in this financial year. So the percentages shown in the table will be different by the end of this financial year.

Table 11: Percentage of e-GP compared to the annual volume of procurement

Percentage of e-GP compared to the annual volume of procurement	%
70%	8
20%	8
10%	8
5%	8
N/A	68
Total	100

Problems faced during operating e-GP:

This is an open ended question. Respondents have opportunity to give tick mark in one or more than one options. They were also provided to give their own thoughts on the problems they faced. All of the participants of the survey questionnaire discussed it different ways, some point were common and some were unique. Table shows the result of this data:

Table 12: Problems faced during operating e-GP

Identified problems	%
Inadequate internet connectivity	58
Network, computer infrastructure	25
Lack of computer competency of officials	42
Lack of knowledge of bidder	50
Financial transaction system is complicated	8
e-GP software problem especially when the server is busy	0
Difficulties in Post qualification, limitations in discussing with other TEC member which is sometimes necessary	17
Difficulty in keeping confidentiality.	0
Acceptability of new system	25
Powerful person may create obstacle	8
Lack of awareness	17
Electricity	0
Price is not always the prime variable when considering evaluation of tender for infrastructures	0
Not suitable for some emergency work as they cannot be anticipated earlier and could not be included in the APP	42
Difficulties working with contractor	0
Difficulties working with other agencies	8
Not suitable for projects with very small amount like repair and maintenance work	33
Existence of huge volume of LTM (limited tendering method) works is an obstacle for using e-GP	25
Personal Interest	17
Member from expecting agency is not included in TOC and TEC	17

So the major problems identified during operating e-GP are, inadequate internet activity and slow speed, lack of knowledge of bidders, lack of computer competency of officials, not suitable for some emergency works etc. Unique problems were like difficulties working with other expecting agencies, ensuring transparency when they are not TOC or TEC members of e-GP system, or personal discussion during post qualification which is sometimes necessary because a significant portion of work PWD does is for other expecting agencies and their opinion is equally valuable and important. Problems related to computer and e-GP supporting logistics are less than other problems.

Benefits of using e-GP

In this part, participants expressed their point of views about the benefits of e-GP and their main points are common. This was also an open ended question with option for participant's own opinion. It has been noticed that participant chose almost all the benefits of e-GP. Following table shows the result:

Table 13: Benefits of using e-GP

Benefits of using e-GP	%
Modern and sustainable way of procurement	67
Transparent process	67
Reduced Time for procurement	42
Eliminate undue pressure	50
Tender box snatch will stop	67
Online payment is secure and fast	50
Fair selection of bidder	58
Reduced cost of transportation, paper and other material	58
Unwanted bidder's participation will be reduced	25
Smooth procurement process	17

Procuring entity definitely enjoy every benefits of using electronic procurement system. But the focus was sustainable system, transparent process and fair selection of bidder etc. some participants added that it's a smooth process of procurement with no hassle from unwanted bidder and unpleasant activity can be easily avoided.

Suitability of e-GP in PWD:

This was one of the objective questions of the dissertation. The nature of work PWD deals with is different from other government agencies. PWD has a wide range of activity starting from small repair works to highly protocol-based emergency works. PWD also has a major portion of work where 26 ministries other than Ministry of housing and public works are the requiring bodies. Maintaining all these, a question remains if PWD can implement e-GP in a full-fledged way.

Participant was asked to answer the related question and their responses were as follows:

Table 14: Suitability of e-GP in PWD

Do you think the nature of procurement in PWD is suitable for using e-GP in a full-fledged way?	**%**
Yes	67
No	33
Total	100

67% of the respondents think that it is possible to use e-GP in PWD in a full-fledged way. This is because of the rapid adaption of this system and realizing the benefits of the system. The organizational capability of PWD is strong enough to support electronic procurement system in the organization effectively.

33% opposed the thought of using e-GP in a full functional form in PWD. The reason behind the opinion was diagnosed in the next question.

Reason behind incompatibility of e-GP in PWD:

Participant, who thinks e-GP is not fully suitable for the nature of work PWD does, stated their opinion about reason behind it.

One of the major reasons is advanced work done. This is an old practice in PWD to execute the work before calling the tender. This is due to high demand for work, emergency works in PM office, PM residence, Residence of honorable President which can never be ignored. Thus the work should be done before without any kind of tendering process. This type of work will always exist and cannot be done using e-GP.

Another reason is the demand type of requiring body. PWD executes work according to the demand of the requiring body with limited time frame. In some cases expecting agencies do not want to wait for the long process of electronic procurement rather they prefer quick service with Limited Tendering method (LTM) or other fast tendering methods. PWD can control its own APP works and bring them under e-GP but it is not always possible when working for other expecting agencies.

The last reason behind is the low volume of procurement works such as small repair works which are less feasible for e-GP system.

These are the prime reason of incompatibility of e-GP in PWD.

4.3 Best solution for ensuring effective procurement system in PWD in future:

Automating an existing procurement process will only make matters worse (Kalakota and Robinson 2001). Puschamann and Alt (2005) recognize that in the successful practices the redesigning of the procurement process is focused on: reduction or elimination of authorization stages; regulation of exceptions to a limited degree in the beginning; elimination of paper; integration of suppliers in the entire process chain; and consideration of the complete process from searching for goods through to invoicing.

With challenges, there are also rays of hope for successful and effective tendering practice in PWD. Participants actively suggested what could be the best solution for ensuring effective procurement system. By effective procurement system it means a smooth, transparent and efficient system which should not be necessarily electronic government procurement. It could be any effective solution. But, analyzing all the data and responses, e-GP can work best in PWD if some measures are ensured.

Firstly, e-GP should be started with baby steps such as with a minor percentage of work volume should be procured by electronic procurement. PWD has already taken this initiative and set a target of 20% of work volume should be done under e-GP system this financial year and next year, this percentage is intended to increase as high as 100%. To

achieve this, PWD should gradually decrease the amount of advanced work to balance the scores.

PWD needs to develop a suitable process for emergency work that cannot be anticipated earlier and cannot be included in APP. This can be done by maintaining a certain budget for such works and include them in APP with tentative amounts. PWD can also consult with CPTU to resolve this situation and find out ways to include this special works in e-GP system.

e-GP is an effective system unless there is unexpected delay for administrative approval. For example, if small repair work procurement has to pass through various steps of approval, the procurement will not be effective. Rather increasing delegation of financial and administrative power to lower authority such as field level can make the process faster. But in this case, accountability should be assured. Again to rapid the work progress, small works could be accumulated together to make a comparatively large volume procurement. Sincerity and courage of officials are highly required to ensure these measures.

Motivation is an essential tool to ensure best practice in procurement. Motivation of the contractors is a must for e-GP because they are so used to the old practice of LTM. They should be convinced that it resides better benefit for them.

Motivation and communication should be practiced outside the department and other requiring bodies and ministries and demonstrate them that e-GP is the best solution for all. Promising activity to ensure smooth execution of work will assure them about the effective use of transparent procurement. But desire and commitment of the senior officials is required.

The discussions about the results are concluded in the following chapter.

Chapter 5

Conclusion & Recommendation

5.1 Conclusion

The research was aimed to identify the present procurement activity in PWD and future scopes for improvement of this process as PWD is one of the core government procurement practicing departments. From all the data analysis and results, it is evident that e-GP has the potential to strengthen the transparency, efficiency, competitiveness and compliance of the sensitive high value government procurement functions. For most patterns of work PWD deals with, e-GP represents both an opportunity for procurement reform and changing the way of procurement. But this system also faces various types of challenges. Nonetheless, there are also measures to cope up with those challenges. If the e-GP system can be enforced properly, it would be proved as the best solution for healthy procurement practice.

5.2 Limitations of the study:

Due to time constraint and other unavoidable reasons, there were certain limitations of the study about procurement practices in PWD.

- The study has a small sample size compared to the workforce of PWD officials. This is due to extreme workload of engineers at site and they could not make it for the participation of this survey
- The study is based mainly on experience on procurement activity. Since the journey of PWD with e-GP system is not very long unlike, RHD or BWDB, it was not possible to introduce any numeric parameter or KPI (Key Performance Indicator) to measure the performance.
- From the questionnaire, it was hard to bring out any conclusion to the study. So, sharing of ideas, judgment, elaborated personal explanation from participants was helpful tool to conclude the study.

However, the research has future scopes for further work on procurement activity of PWD with more specific parameters.

5.3 Challenges

Major challenges identified during operating e-GP in PWD are, inadequate internet activity and slow speed, lack of knowledge of bidders, lack of computer competency of officials, not suitable for some emergency works etc. Unique challenges were like difficulties working with other expecting agencies, ensuring transparency when they are not TOC or TEC members of e-GP system, or personal discussion during post qualification which is sometimes necessary because a significant portion of work PWD does is for other expecting agencies and their opinion is equally valuable and important. One of the major obstacles in implementing e-GP in PWD is advanced work done. Due to high demand for work, emergency works in PM office, PM residence, Residence of honorable President which can never be ignored, PWD has to execute the work before calling the tender. Thus the work should be done before without any kind of tendering process. This type of work will always exist and this is a challenge for PWD that how to regulate this kinds of works under e-GP system. Another issue is the low volume of procurement works such as small repair works which are less feasible for e-GP system.

5.4 Recommendations

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

- The complexity of e-GP system should be reduced and the software should be made user friendly.
- Regular training should be arranged for the contractors.
- Regular meetings should be initiated between CPTU and government procuring bodies can be helpful for resolving related issues.
- Internet connectivity throughout the country should be improved and logistics support should be increased in the field divisions of PWD.
- PWD should gradually decrease the amount of advanced work to balance the scores.
- Maintaining a certain budget for emergency works and include them in APP with tentative amounts. PWD can also consult with CPTU to resolve this situation and find out ways to include this special works in e-GP system.
- Motivation is an essential tool to ensure best practice in procurement.

- Increasing delegation of financial and administrative power to lower authority such as field level can make the e-GP process faster but assuring the accountability of the regarding official.
- Integration of small amount works to a large amount of work volume will also faster the e-GP process.
- Promising activity to ensure smooth execution of work to convince requiring bodies and ministries other than PWD and demonstrate them that e-GP is the best solution for any procurement activity
- Trust and belief in young officials will encourage them to come forward and implement all of the above measures effectively. In this era of technology, working together that is team building is the best way to success.

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Appendix 1: Survey Questionnaire

BRAC Institute of Governance and Development (BIGD) BRAC University

Survey Questionnaire

Research Topic: A study on the implementation of e-GP (Electronic Government Procurement System) in Public Works Department: The impact of it on present procurement practices and the future scopes of the system in PWD

(This is a survey conducted to analyze the present procurement activity in PWD. The survey is a combination of descriptive and multiple choice question. Your opinion will be used only for Academic purpose. This survey might take a while and your patience and valuable opinion is highly appreciated.)

Name: *

Name of your Present Office *
(Name of the Division, Circle, Zone or others)

Your current designation *

Total experience on public procurement *
(Select from the range)

- Less than 1 year
- 1-5 years
- more than 5 years

Annual volume of procurement *
(approximate number of procurement activity per year)

- Less than 100
- 100-300
- more than 30

What is the average estimated cost for any single procurement activity? *
(please do not include special kind of project works)

- Less than 1 lakh BDT
- 1-5 lakh BDT
- 5-10 lakh BDT
- More than 10 lakh BDT

What kind of document do you use for procurement ? *

- ○ PPA and PPR
- ○ Others

Do you have training on PPA/PPR? *

- ◉ Yes
- ○ No

Do you send tender notice to CPTU even if it is not done under e-GP system? *

- ○ Yes
- ○ No

How do you send your tender notice to CPTU? *

- ○ Hardcopy
- ○ Via e-mail
- ○ Via CD

Do you have training on e-GP? *

- ◉ Yes
- ○ No

What is your knowledge level about the e-GP system? *

- ○ Clear understanding
- ○ Clear idea but lack of practice
- ○ No detail Idea
- ○ Absolutely no idea

Have you ever done any of your procurement activity using e-GP so far? *

- ○ Yes
- ○ No

If yes, what is the percentage compared to your annual volume of procurement activity? (please mention an approximate percentage)

What are the problems you have faced during operating e-GP?
you need to check the boxes similar to your experience(multiple answers can be given), you may also add your own thoughts

- ☐ Inadequate internet connectivity
- ☐ Network, computer infrastructure
- ☐ Lack of computer competency of officials
- ☐ Lack of knowledge of bidder
- ☐ Financial transaction system is complicated

- ☐ e-GP software problem especially when the server is busy
- ☐ Difficulties in Post qualification, limitations in discussing with other TEC member which is sometimes necessary
- ☐ difficulty in keeping confidentiality (hacking of passwords)
- ☐ Acceptability of new system
- ☐ Powerful person may create obstacle
- ☐ Lack of awareness
- ☐ Electricity
- ☐ Price is not always the prime variable when considering evaluation of tender for infrastructures
- ☐ Not suitable for some emergency work as they cannot be anticipated earlier and could not be included in the APP
- ☐ Difficulties working with contractor
- ☐ Difficulties working with other agencies
- ☐ Not suitable for projects with very small amount like repair and maintenance work
- ☐ Existence of huge volume of LTM (limited tendering method) works is an obstacle for using e-GP
- ☐ Other: [ ]

What are the benefits you can think of using e-GP? *

you need to check the boxes similar to your experience(multiple answers can be given), you may also add your own thoughts.

- ☐ Modern and sustainable way of procurement
- ☐ Transparent process
- ☐ Reduced Time for procurement
- ☐ Eliminate undue pressure
- ☐ Tender box snatch will stop
- ☐ Online payment is secure and fast
- ☐ Fair selection of bidder
- ☐ Reduced cost of transportation, paper and other material
- ☐ Unwanted bidder's participation will be reduced
- ☐ Other: [ ]

Do you think the nature of procurement in PWD is suitable for using e-GP in a full-fledged way? *

- Yes
- No

If no, then what do you think the reason behind it?

What is, to your opinion the best solution for ensuring effective procurement system in PWD in future? *