

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,

KUMASI

COLLEGE OF ARCHITECTURE AND PLANNING

DEPARTMENT OF BUILDING TECHNOLOGY

EVALUATION OF THE CAPACITIES OF MUNICIPAL ASSEMBLIES TO
ADOPT ELECTRONIC PROCUREMENT WITH RESPECT TO THE INFLUENCE
OF TECHNOLOGICAL, ORGANISATIONAL AND ENVIRONMENTAL
FACTORS, A MULTIPLE-CASE STUDY OF NINE MUNICIPAL ASSEMBLIES
IN THE GREATER ACCRA

By

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MASTER OF SCIENCE IN PROCUREMENT MANAGEMENT

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DECLARATION

I hereby declare that this submission is my own work towards the Masters of Procurement Management and that, to the best of my knowledge, it contains no materials previously published by another person nor materials which have been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

This study was conducted to evaluate the capacities of Municipal Assemblies to adopt electronic procurement with respect to the influence of technological, organisational and environmental factors, in a multiple case study of nine Municipal Assemblies in the Greater Accra Region. The Municipal Assemblies include: Ga Central, Ashaiman, Adenta, La Dade-Kotopong, Ledzokuku-Krowor, Ga South, Ga West, La Nkwantanang-Madina and Ga East. The objective of the study was ultimately to explore how technology, organisation and environment as proposed by Tornatzky and Fleisher (1990) affect the capacities of Municipal Assemblies to adopt electronic procurement. Major areas considered included the state of electronic procurement in the public sector and the capacities of adoption in terms of the contextual factors (technology, organisation and environment) technology competence, top management support, government regulation in terms of clearly defined legal framework etc. amongst others. A semi-structured interview was administered to staff and management of the Assemblies who have insight into procurement or make relevant procurement decisions in the Municipalities. The study revealed that only five of the Assemblies (Ga Central, Ashaiman, Adenta, La Dade-Kotopong and Ledzokuku-Krowor) exhibited some level of technology competence which could facilitate their migration to e-procurement. The remaining four (Ga South, Ga East, Ga West & La-Nkwantanang Madina) are at a stage where traditional procurement is supported with electronic systems such as computers. It was also discovered that Ghana as a nation does not even have Internet Laws, which could have facilitated national ICT policy formulation. The conclusion drawn from the study indicated that none of the Assemblies presently has the capacity to fully integrate internet tools and platforms to replace the traditional procurement processes. A number of recommendations were

made to the Assemblies and Government and these recommendations suggested a review of the Municipal Assemblies' traditional procurement practices over the years, in areas of technology, their organisation and their operating environment, in order to identify current trends being used all over the world which have proven to be much more efficient with reduced corruption and high outcomes for value for money. Again the Assemblies must also be equipped in terms of physical infrastructure (computers, servers, fax machines, routers etc.) and needed human resources which would support technology adoption. Top management must also show the right commitment to such innovations so that it would make the adoption much easier. Finally the Government is advised to create the enabling environment by facilitating the formulation of National Internet laws which could serve as guidelines for the formulation of comprehensive national ICT policy.



DEDICATION

Glory and most honour be to God Almighty for the strength, wisdom and directions given to me throughout the period spent in school and for this Project. I dedicate this Thesis to my lovely and hardworking mum, Madam Victoria Prebi and my beautiful fiancée, Miss Margaret Marfo for their unflinching support throughout the period spent in school and on this project.



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TABLE OF CONTENT

DECLARATION	i
ABSTRACT.....	ii
DEDICATION.....	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENT	vi
LIST OF TABLES.....	ix
FIGURES.....	x
LIST OF ACRONYMS/ABBREVIATIONS	xi
CHAPTER ONE	1
GENERAL INTRODUCTION.....	1
1.1 BACKGROUND	1
1.2 PROBLEM STATEMENT.....	4
1.3 RESEARCH QUESTION.....	5
1.4 AIM AND OBJECTIVES OF RESEARCH.....	5
1.4.1 Aim of Research	5
1.4.2 Specific Objectives	6
1.5 RELEVANCE OF STUDY	6
1.6 LIMITATIONS OF THE STUDY.....	7
1.7 SCOPE OF STUDY.....	7
1.8 ORGANISATION OF THE STUDY	8
CHAPTER TWO	9
LITERATURE REVIEWED.....	9
2.0 INTRODUCTION	9
2.1 BACKGROUND OF PUBLIC SECTOR PROCUREMENT REQUIREMENTS	9
2.2 ELECTRONIC PROCUREMENT.....	11
2.2.1 DEFINITION OF ELECTRONIC PROCUREMENT	11
2.2.2 ADVANTAGES /BENEFITS OF E-PROCUREMENT	14
2.2.3 EVOLUTION OF E-PROCUREMENT	19
2.2.4 THE RESURGENCE OF E-PROCUREMENT	21
2.2.5 TYPES OF E-PROCUREMENT.....	22
2.3 ELECTRONIC PROCUREMENT SYSTEMS (EPS).....	23
2.4. E-PROCUREMENT INFRASTRUCTURE.....	25

2.5. THE GHANAIAAN LEGAL FRAMEWORK OF PROCUREMENT	26
2.5.1 The Public Procurement Act, 2003 (Act 663).....	26
2.6 THE STATE OF E-PROCUREMENT IN THE PUBLIC SECTOR	29
2.7 THE PROCESS OF E-PROCUREMENT IN THE PUBLIC SECTOR	32
2.8 THE MUNICIPAL ASSEMBLY	34
2.8.1 Functions.....	35
2.8.2 Organizational Structure	35
2.9 A TYPICAL PROCUREMENT PROCESS IN THE PUBLIC SECTOR (MUNICIPAL ASSEMBLY).....	36
2.91 Planning Procurement:.....	36
2.9.2 Tendering Process	37
2.93 Contracts Management	38
2.9.4 Monitoring and Evaluation	38
2.9.5 Appeals and Complains	39
2.10 THE INFLUENCING FACTORS: TECHNOLOGY, ORGANISATION AND ENVIRONMENT.	40
2.10.1 TECHNOLOGY	41
2.10.2 ORGANISATION	44
2.10.3 ENVIRONMENT	47
2.11. SUMMARY OF KEY POINTS FROM LITERATURE.....	49
2.11.1 The State of E-Procurement in the Public Sector &Capacity of E-	49
CHAPTER THREE	52
RESEARCH METHODOLOGY.....	52
3.1 INTRODUCTION	52
3.2 RESEARCH DESIGN	53
3.3 RESEARCH POPULATION.....	53
3.4 SAMPLE AND SAMPLING TECHNIQUES.....	53
3.5 SOURCES OF DATA	54
3.6 RESEARCH INSTRUMENTS.....	54
3.7 DATA COLLECTION METHODS	55
3.8 DATA ANALYSIS METHOD.....	56
CHAPTER FOUR.....	58
DATA PRESENTATION AND ANALYSIS	58
4.1 INTRODUCTION	58
4.2 BACKGROUND OF RESPONSES	58

4.3 DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS.....	59
4.4 STATE OF ELECTRONIC PROCUREMENT IN GHANA	60
4.5 CAPACITY OF E-PROCUREMENT ADOPTION IN TERMS OF THE CONTEXTUAL FACTORS.....	63
CHAPTER FIVE	78
FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	78
5.1 INTRODUCTION	78
5.2 FINDINGS.....	78
5.3 CONCLUSION.....	79
5.4 RECOMMENDATIONS.....	80
REFERENCES	82
APPENDIX.....	95



LIST OF TABLES

Table 2.1 Benefits of e-Government.....	16
Table 2.2 Legal Framework of Public Procurement Practices in the Public Sector of Ghana	29
Table 4.1: Level of education of respondents	60
Table 4.2 Responses on State of E-Procurement in Ghana	63
Table 4.3 Respondents on Technology	65
Table 4.4 Percentage of employees who are capable of utilizing the Internet and related Applications	66
Fig 4.5 Technology Competence	67
Table 4.6 Responses on Organisational issues	69
Table 4.7 Responses on Data Storage and Information Sharing	71
Table 4.8 Responses on Environmental Factors	72




FIGURES

Figure 2.1. Evolution of E-Procurement [Source: PayStream Advisors (2013)]	20
Figure 2.2: The E-Public Procurement Process	33
Fig.2.3 The TOE Framework [Source: Veit et al, (2010)].....	41
Fig 3.1.The TOE Frame Work adapted from Tornatzky and Fleisher Framework.	52
Fig. 4.1 State of Electronic Procurement in the Public Sector.....	75



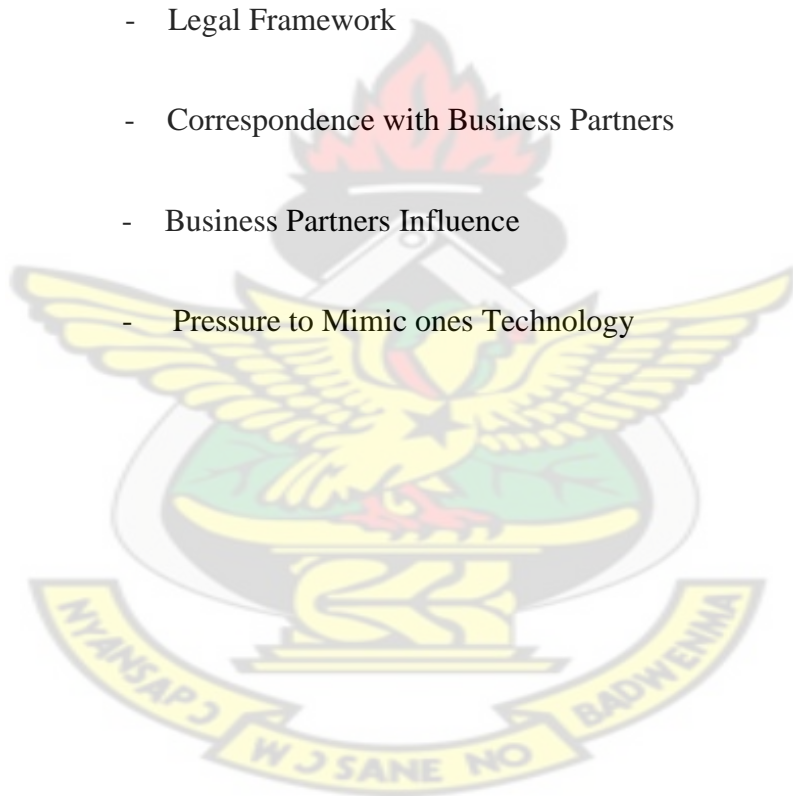
LIST OF ACRONYMS/ABBREVIATIONS



PPA	- Public Procurement Authority
EP/e-P	- Electronic Procurement
GaEMA	- Ga East Municipal Assembly
GaSMA	- Ga South Municipal Assembly
GaCMA	- Ga Central Municipal Assembly
GaWMA	- Ga West Municipal Assembly
LEKMA	- Ledzokuku-Krowor Municipal Assembly
LaNMA	- La Nkwantanang-Madina Municipal Assembly
LaDMA	- La Dade-Kotopong Municipal Assembly
AshMA	- Ashaiman Municipal Assembly
AdMA	- Adentan Municipal Assembly
ICT	- Information and Communication Technologies)
EC	- European Commission
CPBs	- Central Purchasing Bodies
TOE	- Technology-Organization-Environment
AoEP	- Awareness of Electronic Procurement
IC	- Internet Connectivity

PEPA	- Participation in Electronic Procurement Activity
PPPB	- Procurement Process Paper Based
PBP+EBP	- Paper Based Procurement and Electronic Based Procurement
PPNRTO	- Publication of Procurement Notices/Requisitions/Tenders On-line
RTO	- Receipt of Tender On-line
TaF	- Technology as a Factor
SCAR	- Simplicity, Compatibility and Relative Advantage
SC	- Superior Characteristics
TC	- Technology Competence
CS	- Computers and Servers
IIS	- Internet and Intranet Services
ITD	- Information Technology Department
PEEIEA	- Percentage of Employees can send Email to Internal and External Addresses
PEBI	- Percentage of Employees can Browse the Internet
EoIA	- Ease of Internet Access
MSP	- Microsoft Suite Products
OaF	- Organisation as a Factor

SS	- Scope and Size
TMS	- Top Management Support
DS	- Data Storage
Rdns	- Readiness
ISC	- Information Sharing Culture
EaF	- Environment as a Factor
LF	- Legal Framework
CBP	- Correspondence with Business Partners
BPI	- Business Partners Influence
P M T	- Pressure to Mimic ones Technology



CHAPTER ONE

GENERAL INTRODUCTION

1.1 BACKGROUND

Procurement processes and procedures in Ghana have gone through a number of changes, with the main objective of reducing or at best eliminating corruption in public procurement, realizing value for money, efficiency in the procurement process among others. (PPA E-Bulletin, 2010)

Mlinga (2009) asserts that procurement budgets in developing countries account for about 20 per cent of government expenditure. The public sector spends between 10 and 20 percent of its earnings in procurement activities (Thai and Grimm 2000; Jones 2002; Anderson et al. 2003; Goerdeler 2003), which is a whopping amount when converted to dollar terms. In Ghana, public procurement represents about 24% of total imports and apart from personal emoluments, public procurement represents 50 -70% of the national budget and 14% of Gross Domestic Product (GDP) (Adjei, 2005; Ameyaw et al., 2012). Studies indicate that the annual value of public procurement for goods, works, and consultancy services was about US\$600 million (World Bank, 2003) which represented about 14 per cent of Ghana's gross domestic product (GDP).

The bulk of the expenditure were programmes run by Ministries, Departments, Agencies (MDAs) and District Assemblies (DAs) as well as Public Hospitals, Universities, Schools and Colleges which involve procurement of works, goods technical and consultancy services. Improving the public procurement system will impact substantially on the economy of Ghana which will result in budgetary savings

and efficiency in government expenditures, thereby creating wealth and reducing poverty (Ayitey, 2012)

Globally, many governments have embarked on reforms in their procurement systems to streamline and harmonize legal and institutional framework. A major change was the passing of the Procurement Act, Act 663, in 2003. As much as the usage of Act 663 has streamlined procurement processes in the country, as well as established a high level of sanity in the procurement environment, its entirely manual base has led to some procurement practitioners calling for the establishment of electronic procurement (e-procurement) in the country (PPA E-Bulletin, 2010).

E-Procurement, thus refers to the use of electronic communications and transaction processing by government institutions and other public sector organisations when buying supplies and services or tendering public works (European Commission, 2010)

It is the public sector's use of Information and Communication Technology (ICT) and aims at improving the efficiency, effectiveness, transparency and responsibility of governments (Titah & Barki, 2006). E-Government has been attracting increasing research interest over the last years and is a domain with growing reputation.

Wikipedia defines E-procurement (electronic procurement, sometimes also known as supplier exchange) as the business-to-business (B2B) or business-to-consumer (B2C) or business-to-government (B2G) 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.

The PPA E-Bulletin (2010) defines E-Procurement as a comprehensive process in which governments use IT systems (including the Internet) to establish agreements for the acquisition of products or services.

The Internet's rapid growth has driven many governments to add an electronic commerce component to their operations to gain competitive advantage. Business-to-business online procurement has recently emerged as one of the hottest topics in the world of commerce and technology.

Unfortunately our current legal and regulatory framework of public procurement, the Procurement Act (Act 663) does not at present cater for the use of electronic transactions in the procurement process in the public sector. Apparently following years of its usage and the seemingly obvious loop holes in the Act and also the global emergence of Information Communication Technology (ICT), the Public Procurement Authority in their wisdom has taken pragmatic steps to review the current legal and regulatory framework to address the loop holes and essentially include Electronic Procurement. This will pave way for entities to advertise their tenders online, suppliers can also submit their bids online, and finally contract award process will also be conducted online (PPA E-Bulletin, 2010).

Essentially E-Procurement saves process costs through time and resource savings as well as product costs through intensified competition on public contracts (Christmann et al, 2004). Moreover, the tools commonly used to carry out E-Procurement help to improve the quality and transparency of procurement procedures and to relieve

procurement units dealing with complex and highly regulated processes (Veit et al, 2010).

It is against the background of highly decentralized public procurement process in Ghana where various procurement entities typically award a lion's share of public contracts that this Thesis seeks to evaluate the capacity of Municipal Assemblies in adopting E-Procurement with respect to the influence of Technology, Organisation and Environment. All nine (9) Municipal Assemblies in the Greater Accra Region were used in this research: the assemblies include Adenta, Ashaiman, Ga East, Ga West, Ga Central, Ga South, La Dade-Kotopon, LA-Nkwantanang-Madina and Ledzokuku-Krowor Municipalities. (Source-Ministry of Local Government)

1.2 PROBLEM STATEMENT

Recent advancement in the introduction of innovations has made adopting new technologies, such as those used for electronic procurement, a routine practice. But successful technology adoption depends on a multitude of factors, including those related to the adopter, to the technology, to the provider and the network within which they operate. (Azadegan &Teich, 2010).

Moreover, it has been argued that public organizations tend to be late adopters of new technologies and are perpetually behind the technology-diffusion curve (Moon, 2005). MacManus's (2002) recent study also confirms that the diffusion of e-procurement at the state and local levels has been slow and incremental, and argues that many traditional procurement principles should be reconsidered.

The Municipal Assembly being a public institution with the mandate of leading development in the Municipality acquires goods, works and services by means of the traditional paper-based procurement, which over the years has been saddled with issues of corruption, inefficiency and the likes, for which ICT tool of e-procurement has been touted as its deliverance in the public sector (Moon, 2005).

It is in the light of this that this study seeks to evaluate the capacity of Municipal Assemblies in the Greater Accra Region to adopt electronic procurement with respect to the influence of technology, organization and environment.

1.3 RESEARCH QUESTION

To ensure transparency, efficiency and effectiveness in service quality by adopting e-procurement at the Municipal Assemblies would require right answers to these questions and genuine actions taken to address the problem areas.

- i. What are the characteristics of technology that impact the capacity of Municipal Assemblies to adopt e-procurement?
- ii. What organisational issues affect the Assemblies' capacity to adopt e-procurement?
- iii. What factors in the operating environment of the Municipal Assemblies impact on their capacity to adopt e-procurement?

1.4 AIM AND OBJECTIVES OF RESEARCH

1.4.1 Aim of Research

The main aim of this study is to evaluate the capacity of Municipal Assemblies in the Greater Accra Region to adopt e-procurement with respect to the influence of

organizational, technological and environmental factors as proposed by Tornatzky and Fleisher (1990).

1.4.2 Specific Objectives

To achieve the above aim, the following specific objectives have been considered:

1. To investigate the characteristics of technology that affect the (technological) capacity of Municipal Assemblies to adopt e-procurement
2. To identify organisational factors that impact on the organisational capacity of Municipal Assemblies to adopt e-procurement
3. To examine the factors that affect environmental capacity of Municipal Assemblies to adopt e-procurement
4. To make recommendations for reforms in the traditional procurement practices

1.5 RELEVANCE OF STUDY

E-procurement is constantly receiving attention from industries, businesses and government agencies. Analysts believe that utilization of e-procurement can lead to enormous cost saving and efficiency in procurement processes (Parida et al, 2011).

Moreover, PPA E-Bulletin (2010), outlines some of the benefits associated with E-Procurement, among which include: Transparency, Non-discrimination, Equality of access, Open competition, Accountability and Security of process in the procurement process.

Municipal Assemblies using e-procurement would:

1. be much more efficient and effective,
2. cut back on lots of paper work,

3. minimize face-to-face contacts with officials of the Assembly and
4. thus reduce the perception of corrupt practices as a means of speeding up the procurement process within the Assemblies.

It would also facilitate the adoption of a common classification system for goods, works and services for use and across Municipalities in the country.

1.6 LIMITATIONS OF THE STUDY

As with any study, this study had limitations and these were:

1. the unwillingness of some management and procurement officials of some of the Assemblies to release information which would enrich the study and also establish a strong validity and reliability of the research data.
2. e-procurement though well acknowledged worldwide, not so much is known and practiced in Ghana, particularly in the public sector, and so there is lack of available data and materials related to it in Ghana. This made it difficult for the researcher to obtain rich data in Ghana for the study.
3. the researcher had to combine academic work with regular professional work and family life; these had tendered to delay the research.
4. costs of travelling across all nine Municipal Assemblies, printing, photocopying, binding and very limited academic time schedule were other constraints encountered during the research.

1.7 SCOPE OF STUDY

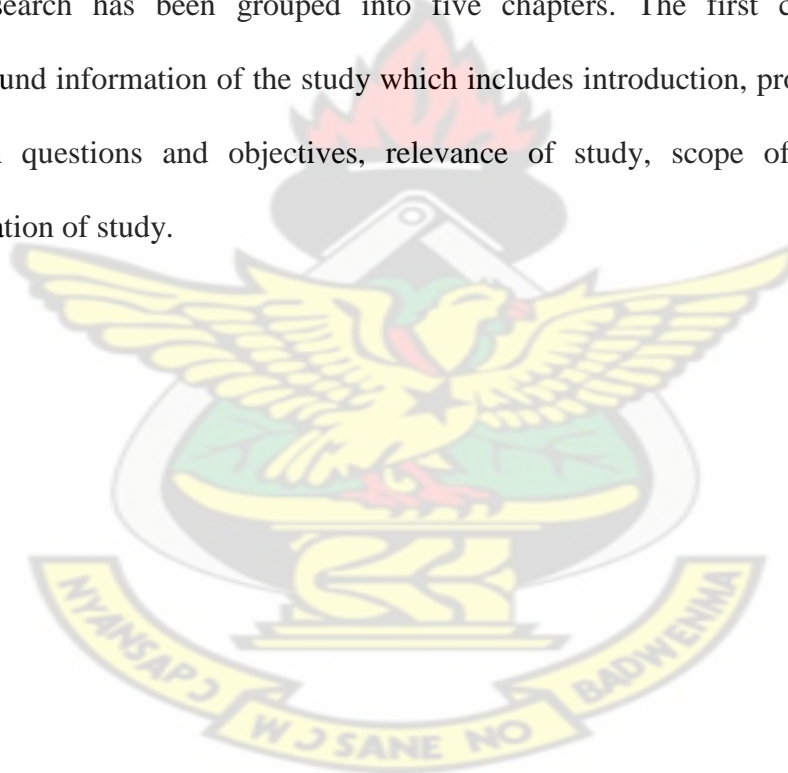
Geographically, this research was conducted in the Greater Accra Region. Greater Accra Region had been chosen because it is quite advanced in infrastructure and has

nine (9) Municipal Assemblies, the highest in the country and so it presented the best case study scenario for the research.

These Municipal Assemblies include: Adenta, Ashaiman, Ga East, Ga West, Ga Central, Ga South, La Dade-Kotopon, LA-Nkwantanang and Ledzekuku-krowor Municipalities. (Ministry of Local Government, 2013)

1.8 ORGANISATION OF THE STUDY

The research has been grouped into five chapters. The first chapter provides background information of the study which includes introduction, problem statement, research questions and objectives, relevance of study, scope of the study and organisation of study.



CHAPTER TWO

LITERATURE REVIEWED

2.0 INTRODUCTION

2.1 BACKGROUND OF PUBLIC SECTOR PROCUREMENT REQUIREMENTS

Gershon (1999) defines procurement as ‘the whole process of acquisition from third parties and covers goods, services and construction projects. This process spans the whole life cycle from the initial concept and definition of project needs through to the end of the useful life of an asset or end of services contract’ (Gershon, 1999). The key and broadly accepted principle underlying a modern public procurement system is open competition, unrestricted, universal access to the procurement market. In addition, the procurement process, the selection of bidders, tendering procedures, and the award of contracts, should be open to public examination and review, thus making it a transparent process (Carayannis et al, 2005).

Cited in Vaidya et al (2006) article in the Journal of Public Procurement, public procurement is an important function of government (Thai, 2001). It has to satisfy requirements for goods, works, systems, and services in a timely manner. Furthermore, it has to meet the basic principles of good governance: transparency, accountability, and integrity (Wittig, 2003; Callender & Schapper, 2003). Another main principle of governments is to achieve value for money in procurement (DOF, 2001). However, public procurement has been a neglected area of academic education and research, although governmental entities, policy-makers, and public procurement professionals have paid a great deal of attention to procurement improvements and reforms (Thai, 2001).

Moreover, in the public sector, the buyer attempts to include as many sellers as possible in order to broaden competition and maximize opportunities for value for money whereas, in the private sector, buyers may seek to use a small number of suppliers based on trusted relationships in order to minimize operating risks (OCIO, 2000). Governments are also obliged to disclose purchasing and contracting information to the public, including details about the outcome of government contracting decisions as enshrined in the Public Procurement Law of Ghana –Act 663 2003 . While government procurement policies and legislation have been established to limit discrimination in government procurement, it is unclear how successful they have been (Rasheed, 2004).

It should be noted, however, that the traditional public procurement is facing many deficiencies, especially in developing countries that are characterized by bureaucratic procedures, corruption (Yap et al., 1994) including:

- Complicated procedures and extended relationships
- Excessive state intervention
- Bureaucratic dysfunctionalities
- Absence of clear national IT policy
- Large volume of paper
- Lack of flexible centralized control
- Lack of information quality
- Resistance to change.

As cited by Fang (2002), in the *Journal of the Computer*, governments worldwide are faced with the challenge of transformation and the need to reinvent government

systems in order to deliver efficient and cost effective services, information and knowledge through information and communication technologies (ICT). Development of Information and communication technologies catalyzed and led up to E-government.

According to Vaidya et al (2006) a number of public sector agencies worldwide have identified Electronic Procurement (e-Procurement) as a priority e-Government agenda and have implemented or are in the process of implementation. However, implementation of e-Procurement initiatives in the public sector is still in the early stages and moreover there was little history of extensive use of e-Procurement in the public sector and, therefore, the academic literature covering early public sector adoption of e- Procurement is limited (Tonkin, 2003).

2.2 ELECTRONIC PROCUREMENT

2.2.1 DEFINITION OF ELECTRONIC PROCUREMENT

What is e-Procurement? Confusion exists in defining the term e-Procurement (Vaidya et al, 2003). While the terms “e-Procurement” and “e-Purchasing” have been used synonymously in many jurisdictions in an attempt to prove their involvement in the e-Commerce revolution (MacManus, 2002), the term “purchasing” has a narrower scope. Moreover in other literature, e-Procurement is used synonymously with e-Government. Apparently Veit et al (2006) suggest that e-procurement is an important subset of e-Government.

In fact there is plethora of definitions put forward by many writers, institutions, organisation, journals etc. on E-Procurement. The PPA Bulletin (2010) defines E-Procurement as a comprehensive process in which governments use IT systems (including the Internet) to establish agreements for the acquisition of products or services.

Croom & Brandon-Jones, (2004) defines E-Procurement as 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.

E-procurement has been defined as the use of information technologies to facilitate B2B purchase transactions for materials and services (Wu et al., 2007)

The World Bank defines e-government procurement as the use of Information & Communications Technology (especially the Internet) by governments in conducting their procurement relationships with suppliers for the acquisition of goods, works, and consultancy services required by the public sector.

Moreover, E-government is defined as a way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes. E-government presents a tremendous impetus to move forward in the 21st century

with higher quality, cost-effective, government services and a better relationship between citizens and government (Fang, 2002)

Wikipedia also defines E-procurement (electronic procurement, sometimes also known as supplier exchange) as 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.

In their publication in the International Journal of Operations and Product Management, Walke & Harland, (2008) define E-procurement as the use of information technologies to facilitate business-to-business (B2B) purchase transactions for materials and services.

Mitchell (2000) and Presutti (2003) argue E-procurement to be the process of purchasing goods and services electronically and can be defined according to Croom and Brandon-Jones (2007) as “the use of integrated (commonly web-based) communication systems for the conduct of part or all of the purchasing process; a process that may incorporate stages from the initial need identification by users, through search, sourcing, negotiation, ordering, receipt and post-purchase review”

While there are various forms and definitions 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 (Vaidya et al., 2006).

2.2.2 ADVANTAGES /BENEFITS OF E-PROCUREMENT

The use of the Internet for procurement has generated great excitement among organizations because of its potential to reduce procurement costs and improve strategic sourcing. (Buxmann & Gebauer, 1999; Luckling-Reiley & Spulber, 2001)

Apparently there is debate about how recently e-Procurement has emerged, (Dai & Kauffman, 2001; Koorn et al, 2001), there is no doubt that the use of the Internet in e-Procurement provides several advantages over earlier inter-organizational tools.

Neef (2001) suggested that the potential benefits of e-procurement are the following:

- lowered transaction costs;
- faster ordering;
- wider vendor choices;
- standardized, more efficient procurement processes;
- greater control over procurement spending (less maverick buying) and better employee compliance;
- more accessible Internet alternatives for buyers;
- less paperwork and fewer repetitious administrative procedures, and
- reengineered procurement workflows

In Vaidya et al., (2006) citing AGV, (2003) and Croom & Brandon-Jones (2004), identifies major advantages with e-procurement, such as;

- reduction of supply costs,
- reduction of cost per tender,
- lead time savings,

- simpler ordering,
- reduced paperwork,
- decreased redundancy,
- less bureaucracy,
- standardization of processes and documentation,
- online reporting,
- clearer and more transparent processes,
- ensured compliance with procurement laws and regulations,
- minimization of errors, and
- easier access to information.
- Increased quality and more adequate purchasing

In addition, e-procurement has been found to facilitate decentralization of procurement and, thereby, enables purchasing professionals to focus more efforts on strategically important issues (AGV, 2003). In summary, through implementation of e-procurement, governments can handle much of the administrative work automatically, thus making the procurement process more efficient than any present paper-based system, with a corresponding benefit from large cost savings (AOT Consulting, 2003; Callender & Schapper, 2003; AGV, 2003).

The following Table 2.1 by the World Bank e-government procurement Draft Strategy (2003) 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:

Table 2.1 Benefits of e-Government

	Government	supplier	Public
Transparency	Anti-corruption Increased number of suppliers	Increased fairness and competition Improved access to the government market	Access to public procurement information Monitor public expenditure information
	Better integration and interaction between governments	Open the government market to new suppliers	“Have a say”
	Professional procurement monitoring Higher quality of procurement decisions and statistics Political return from the public	Stimulation of SME participation Improved access to public procurement information Government accountability	Government accountability
Efficiency <i>Costs</i>	Lower prices Lower transaction costs Staff reduction Reduction in fiscal expenditure	Lower transaction costs Staff reduction Improved cash flow	Redistribution of fiscal expenditure
<i>Time</i>	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

Source: World Bank (2003)

Furthermore, the following main benefits have been identified by different authors:

Leonard and Cochran, (2004)

- Ability to implement “just in time” strategy
- Streamlining of supply chain by removal of inefficient intermediaries
- Better access to information and transparency in markets
- Removal of market barriers like time difference and geography

De Boer et al, (2002)

- Cost saving directly related with production or service delivery
- Cost reduction of non-production goods and services
- Reduced cost of operational purchasing activities e.g. ordering, expediting and requisitioning
- Reduced cost of tactical procurement activities e.g. formulating specification, selecting suppliers, negotiating with suppliers, contracting, disposals etc.
- Reduced cost of strategic procurement activities – e.g., spend analysis, transaction analysis, market analysis, planning, developing purchasing policies etc.
- Internal benefits arising from investments in particular inter-organizational relationships
- The contribution of investments in particular inter-organizational relationships to revenues

ITRG, (2002)

- Process efficiencies amounting to annual savings.
- Ability to link into existing systems, such as ERP.

- Reductions seen in lead times within the procure-to-pay cycle, in some cases by 50%.
- Self-invoicing on behalf of clients can add to the bottom line.
- Month-end reconciliation can end the problem of the wrong items being ordered or the wrong prices being offered as business process have been streamlined and all was working off the same catalog.
- The buyer is engaged in more strategic product management, leading to better contracts being negotiated.
- Maverick spending is reduced.
- Reduction in stock levels can lead to savings of millions of dollars

Davila et al, (2002) & Presutti, (2002)

- Cost savings
- Process efficiency
- Better information flow between buyers and supplier
- Reduced Maverick spending
- Streamlined process
- Better inventory level

GATEWIT, (2012)

Savings:

- 20%, on procurement contracts (Portugal)
- Administrative burden-10% and another 10% legal services (France)
- time savings of 45 man- years (Italy)

2.2.3 EVOLUTION OF E-PROCUREMENT

E-procurement has been a common theme of many organizations for the promotion of transparency and good governance in procurement for many developed and developing nations. Some of the early adopters began implementing e-procurement / e-tendering systems 20 years ago before the Internet and Web services became a primary medium for the exchange and dissemination of information. (Expert Group Meeting Report, 2011)

It started with the introduction of Electronic Data Interchange in the 1960s which has been providing automated purchasing transactions between buyers and their suppliers. Enterprise Resource Planning (ERP) followed in the 1970s, and then came the commercial use of the Internet in 1980s. It was only in the 1990s that the World Wide Web-the multimedia capability of the Internet - became widely enabled and provided the essential resource for the automation of procurement (OGC, 2002).

In particular, by introducing various IT elements into procurement practices, governments have fundamentally changed paper-based procedures and other forms of conventional management (Moon, 2005). For example, the Federal Acquisition Streamlining Act of 1994 required the federal government to develop a more expedient procurement management process based on electronic data interchange (EDI) (Schriener & Angelo, 1995). Since the mid-1990s, governments have begun to actively adopt various e-procurement tools, such as Web-based proposal requests and Internet bidding, digital signatures for procurement documents, reverse auctions, electronic ordering, automated procurement systems, purchasing cards, etc. (Moon, 2005). See Fig 2.1 for the stages that e-procurement has gone through

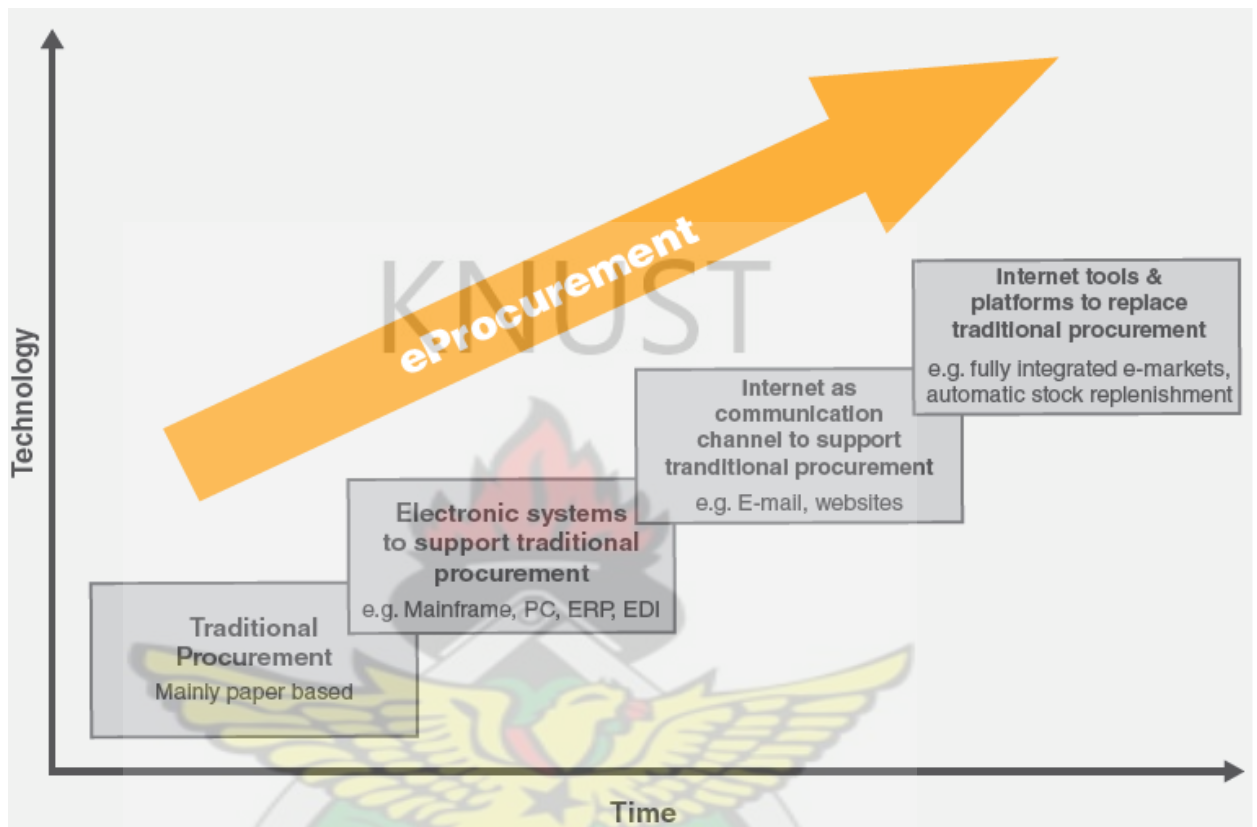


Figure 2.1. Evolution of E-Procurement [Source: PayStream Advisors (2013)]

2.2.4 THE RESURGENCE OF E-PROCUREMENT

According to AberdeenGroup (2005), several major forces have combined to place e-procurement back on the front-burner of enterprises' supply management strategies:

- Continued and growing cost pressures. Outsourcing, consumerization of markets, globalization-these forces have combined to exert continuous price pressures on product manufacturers. E-procurement is a proven way to reduce costs, often dramatically.
- Compliance issues. E-procurement drives compliance with negotiated contracts, reducing or preventing the “leakage” of negotiated pricing. And better spend visibility is allowing enterprises to more easily comply with new legislation, such as the Sarbanes-Oxley Act in 2002, which requires organizations to improve their ability to report on revenues and expenses in order to provide greater transparency into the financial activities of public companies (Bushell, 2004).
- Advances in supplier enablement. Supplier enablement has been a major stumbling block for e-procurement success. End users have made great progress in their approaches to supplier enablement, essentially pushing enablement and content management to third parties.
- Increased functionality from e-procurement solution providers. E-procurement functionality and usability have advanced; most solutions now include core requisitioning, approval routing and workflow, and basic integration and reporting capabilities. Solutions providers also have extended their process

footprint and category-specific functions. Implementation and maintenance also have improved.

- Supplier networks and catalog hubs have expanded, reducing the burdens of supplier enablement.
- New pricing models. Specifically, the emergence of the “on-demand” model has made e- procurement much more affordable for mid-market and small enterprises.

All of these advances have helped move e-procurement along the maturity curve, making it easier and less expensive for enterprises to implement e-procurement technologies and gain the many potential benefits.

2.2.5 TYPES OF E-PROCUREMENT

According to Walker and Harland, (2008) different forms of technologies are appropriate for different procurement activities; six forms of e-procurement have been classified (de Boer et al., 2002), including the following:

1. e-ordering/e-Maintenance Repair Operate (MRO): Similar to Web-based ERP, but goods and services ordered are non-product-related MRO supplies,
2. web-based enterprise resource planning (ERP): Creating and approving purchasing requisitions and placing purchase orders and receiving goods and services by using a software system based on Internet technology

3. e-sourcing: Identifying new suppliers for a specific category of purchasing requirements using Internet technology
4. e-tendering: Sending requests for information and prices to suppliers and receiving the responses of suppliers using Internet technology.
5. e-reverse auctioning/e-auctioning: Using Internet technology to buy goods and services from a number of known or unknown suppliers.
6. e-informing: Gathering and distributing purchasing information from and to internal and external parties using Internet technology

Other writers have classified e-procurement into three broad types:

- transaction management to manage the requisition to payment process;
- brokerage such as using electronic exchanges and e-auctions, and
- electronic integration which may involve shared information systems in the supply chain, such as EDI or sharing computer aided design systems (Chopra et al, 2001a; Kalakota, 2000).

2.3 ELECTRONIC PROCUREMENT SYSTEMS (EPS)

Successful e-procurement requires a number of underlying systems that provide: digital signatures and identity authentication, certificates and attestations, catalogs of products and services and record archival among other things (GovWin, 2010). Davila et al. (2003) defines EPS “as any technology designed to facilitate the acquisition of goods by a commercial or a government organization over the Internet, whereas Raghavan and Prabhu (2004) in expansion of this definition “the electronic acquisition of goods and services including all processes from the identification of a need to purchase of products, or the payment for these purchases, including post-

contract/payment activities such as contract management, supplier management and development’

In simple terms, E-Procurement Systems is defined by EPIQ Technologies (2013) as applications designed to allow businesses to use the Internet in order to acquire the necessary goods and services. An e-procurement system manages tenders through a web site. This can be accessed anywhere globally and has greatly improved the accessibility of tenders. Examples of EPS include Ariba, Commerce One, Oracle and SAP e-procurement systems. (Sundarraaj and Kumari, 2013)

According to Koorn et al (2001), there are three types of e-Procurement Systems: Buyer e-Procurement Systems, Seller e-Procurement Systems and Online Intermediaries. Thus the system could be for Buyers, Sellers and Intermediaries. Parida et al (2006) expatiates them as follows:

Buyer e-Procurement Systems: This is the “buy-side procurement” which refers to one organization using electronic systems to purchase goods, such as office stationary, from contracted suppliers. These suppliers are also using e-procurement systems for management of all processes relating to purchase. This is simply coalescing of the corporate procurement portals and business to employees (B2E) applications.

Seller e- Procurement Systems: The second application is “sell-side procurement “. This term is used to describe how one supplier sells to a number of buying organizations using electronic systems such as, using e-procurement systems and e-commerce technology. This model is also referred to as “e-sales”. Seller side procurement models are often used extensively in B2C (business to consumers). Well-designed seller side solution is usually offering a higher level of customizations for

each buyer than their B2C retail counterparts. This type of model attracts big suppliers firms that have a stronger position in relationship with their buyers.

Online Intermediaries: The third application is “e-marketplace and trading hubs” which is a combination of industry consortium and the trading exchanges. The marketplace model brings together many different buying and selling organizations in one trading community. The most popular e-marketplace function is auction used for variety of product category. This type of model often helps to increase collaboration between companies in a single industry sector or providing the opportunity of e-procurement to companies, who would normally be too small to benefit.

2.4. E-PROCUREMENT INFRASTRUCTURE

Existing types of e-Procurement infrastructures can be summarised according to the EC (2010) as follow:

- a) e-Procurement platform: A solution designed specifically for an individual organisation
- b) to support its procurement processes. Due to the high development costs, such a system is commonly used by large organisations with a high number of procurement processes.
- c) Multi-organisation platform: A solution that a service provider develops and runs for subscribing procurement organisations.
- d) Central Purchasing Bodies'(CPBs) framework platform: A system supporting the provision of goods and services to public offices under framework agreements signed by a CPB. Products and services covered by each framework contract are usually placed in a catalogue. By navigating such a database, individual public offices issue specific orders (by basically selecting

how much they want to buy in the case of products and what type of tasks they want to be performed in the case of services). One example is the Austrian Federal Procurement Agency (FPA).

- e) Marketplace: A general catalogue of (common) products and services offered by a CPB to public buyers in a country or region. Interested suppliers subscribing to these services publish their products in the catalogue offered by the CPB specifying price, delivery time, areas served, guarantee period, etc. Procurers can navigate the catalogue, identifying for each item the suppliers offering that item and the related conditions and terms. They then choose the product by placing it into a "shopping cart".
- f) Procurement portal: A web based solution offering a single entry point to a number of procurement platforms such as those indicated above. The portal may provide some information on top of the services that it gives access to. Again, the portal may be run by national authorities or by businesses on a competitive basis.

2.5. THE GHANAIAN LEGAL FRAMEWORK OF PROCUREMENT

2.5.1 The Public Procurement Act, 2003 (Act 663)

The Ghanaian government enacted the Public Procurement Act in 2003, laying the foundation for a standardized procurement system that takes into account the country's decentralization and local industry development policies. It created the Public Procurement Board as the central entity charged with harmonizing policy and ensuring efficient and transparent procurement, carried out by the Public Procurement Authority (PPA). Procurement entities with tender committees carry out procurement for government bodies, and tender review boards provide concurrent approvals for

recommendations for contract award made by the committees. (World Bank Group, 2013)

The legal framework which governs public procurement activities in Ghana primarily comprises the following:

- The Public Procurement Act 663 of 2003,
- Public Procurement regulations,
- Public Procurement manual;
- Standard tender documents and
- Guidelines to assist public procurement practitioners

It must be emphasized that each of the above is of grave importance in the exercise of public procurement; however the Public Procurement Act 663 supersedes the remaining four parts. Thus in state of confusion in the application of the other parts of the framework, the Act is referred to.

The Public Procurement Act 663 establishes the Public Procurement Board (PPB) now PPA, Entity Tender Committees (ETCs) and Tender Review Boards (TRBs). It specifies in clear terms the laws for procurement methods and thresholds, procedures, appeals and complaints resolution procedures and disposal of stores. It authorizes the issuance of enforceable regulations, Guidelines, Standard Tender Documents (STDs) and Manual under the Act

The objectives of Public Procurement Act 663 are to harmonize public procurement processes in the public sector to ensure judicious, economic and efficient use of public resources and to ensure that public procurement functions undertaken within the public sector are fair, transparent and non-discriminatory (PPA, 2003). The Act applies to procurement financed wholly or partly from public funds for the

procurement of goods, works, services and procurement financed by loans contracted by the government of Ghana, including foreign aid and donor fund (PPA, 2003).

The following table encapsulates the legal and regulatory framework of procurement in the public sector.



Table 2.2 Legal Framework of Public Procurement Practices in the Public Sector of Ghana

LEGAL FRAMEWORK	SUMMARY
Public Procurement Act, 2003 (Act 663)	Provide a comprehensive legal regime to harmonize and safeguard public procurement
Public Procurement Regulations	Contains detailed rules and procedures for all aspects of the procurement system, the operations of PPA and procurement entities and the conduct of procurement activities.
Guidelines	Issued by the Public Procurement Board (PPB) which provides supplementary guidance on disposal, single source procurement, margins of preference, framework contract agreements, sustainable public procurement (SPP) etc.
Standard Tender Documents (STDs)	They comprise standard invitation and contract documents for procurement of all values. There are separate standard tender documents for goods, works and services STDs have been listed in Schedule 4 of the Act 663
Public Procurement Manual	Provides practical guidance and step-by-step procedures for undertaking procurement in accordance with the Act.

[Source: PPA Regulations (2003)]

2.6 THE STATE OF E-PROCUREMENT IN THE PUBLIC SECTOR

The public sector globally spends between 10 and 20 percent of its earnings in procurement activities (Thai and Grimm, 2000; Jones 2002; Anderson et al, 2003;

Goerdeler, 2003). This is a whopping amount when converted to dollar terms. European Union for instance procures more than 720 billion Euros annually (EU&PP, 2003). E-procurement promises significant savings through increased efficiency and effectiveness. Several government organizations that represent regions and countries have embarked on e-procurement for realizing the promised savings. (Ramanathan, 2004)

E-procurement in the public sector is internationally emerging. Countries such as Denmark, Norway, Finland, Ireland, the United Kingdom, Spain, Germany, Portugal, Italy, Singapore, Brazil and the regions in the USA and Australia have embarked on e-procurement (Ramanathan, 2004). According to him most or even all of the countries are still in the implementation stages. Not all countries diffuse e-procurement similarly; instead there are several diffusion patterns. For instance, the Danish central government has chosen a private e- market as the infrastructure for e-procurement (efkous, 2003). The Spanish ministry of public administration has taken the role of defining functional, technical and organizational specifications (Juan, 2002). The German government has invested 4.5 million Euro in developing a “flag ship” project e-vergabe, which it touts as the “model for public procurement in Europe” (Goerdeler, 2003).

As emphasized by Thai and Grimm (2000), one of the most important challenges in government procurement is how to best utilize information technology in an age of communications revolution.

Ghana’s procurement system ever since passed into law in December 2003, did not outline clear cut procedures on the use of internet in our procurement processes even though as at the time the law was being passed the World Wide Web technology of

Information Communication (ICT) had made tremendous strides around the world. And so the legal framework that governs procurement in the public sector today does not spell out specific guidelines for electronic procurement in the public sector, perhaps for now. A very welcoming fact is that the current Legal framework of public procurement is being reviewed, which is expected to incorporate specific guidelines on electronic procurement into the final document.

It must be emphasized that Information technology (IT) has helped solve many administrative problems in the public sector, and electronic procurement has been introduced as a way to achieve better, more cost-effective procurement systems (Bartle & Korosec, 2003). A study by the World Bank (2003a) reported that about 50-70% of Ghana's national budget (after personal emoluments) is procurement related (Ameyaw et al, 2012) and the lack of a robust system creates avenues for a chunk of the funds meant for development projects to slip into individual pockets (PPA Bulletin, 2012). Therefore an efficient public procurement system could ensure value for money in government expenditure, which is essential to a country facing enormous developmental challenges (Ameyaw et al, 2012) and electronic procurement, could not have been better introduced at these times than not to mitigate some of these challenges.

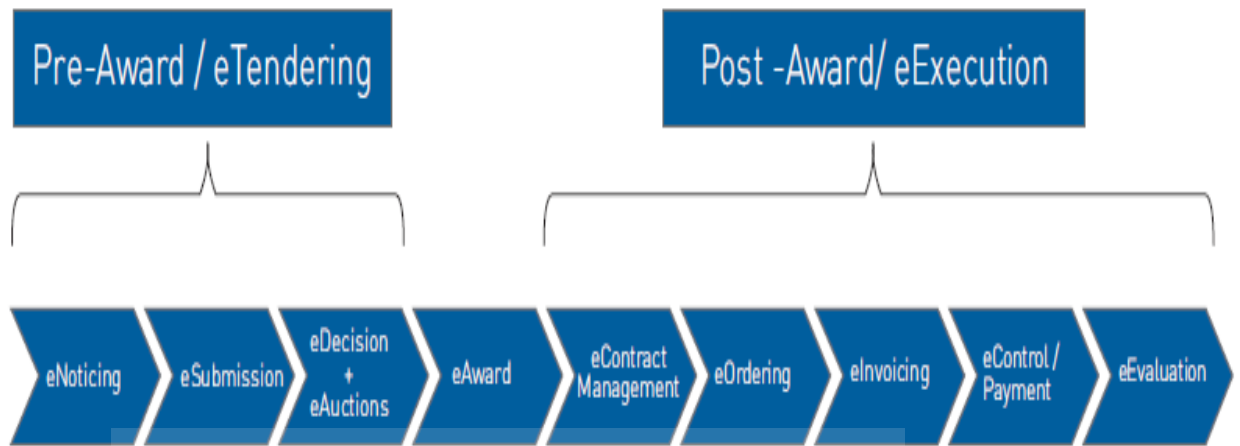
Apparently Ghana, like many countries across the globe, has realized the numerous benefits in moving from the manually paper-based procurement into the electronic highways. Following that, Ghana's regulatory body, the Public Procurement Authority, has taken several initiatives to modernize our public procurement system by taking steps to commence electronic procurement in the public sector. To buttress this, the Ghana Public Procurement Authority (PPA) was to undergo E-procurement

to cut back on lots of paper work, minimize face-to-face contacts with government officials and thus reduce the perception of corrupt practices as a means of speeding up purchasing and supply within the public sector(PPA E-Bulletin, 2011). According to the PPA, the E-Procurement Project forms part of the wider E-Ghana Project sponsored by the World Bank and intended to automate the process of public procurement using Information Communication Technology (ICT) applications.

This electronic migration according to the PPA is expected to be rolled out come January 2014 next year. According to the Authority the implementation of e-procurement will begin as a pilot in the highest spending government departments including the Ghana Cocoa Board, the Volta River Authority, Ghana Grid Company, Ministry of Communications and the Ministry of Finance and Economic Planning.

2.7 THE PROCESS OF E-PROCUREMENT IN THE PUBLIC SECTOR

The concept of e-procurement in the public sector includes multiple stages that should be clearly defined according to Tavares (2011) (See Fig.2 for the summary of the process)



Source: Adapted from "The 2009 EU eGovernment Procurement Benchmark Report"

Figure 2.2: The E-Public Procurement Process

According to the WB discussion paper on procurement, four stages could be distinguished (World Bank, 2001) for an electronic procurement system:

1. Public procurement announcement system;
2. Document distribution (bidding documents);
3. Electronic bid submission, with parallel paper process-requires public key encryption, and legal e-commerce infrastructure, including electronic signatures and a trust certificate authority
4. Full electronic processing, including on-line purchasing and post-bid contract management.

During the first two stages, information technology plays an important role in storing electronically the procurement cases, and in establishing control mechanisms to public authorities' crosschecking capabilities. The last stages involve the adoption of

electronic commerce based on the procedures and control mechanisms already established in the previous phases (Romm and Sudweeks, 1998)

2.8 THE MUNICIPAL ASSEMBLY

The Municipal Assembly is the political body governing the municipalities in the various regions of Ghana. The Municipal Assembly was set up by the Local Government to champion decentralization in the Municipality through the effective local Governance Administration for the empowerment of its citizen's public and private sectors and vibrant Civil Society organizations capable of delivering efficient and sustainable services to the populace in the Municipality. Currently, there are Forty Nine (49) Municipal Assemblies in Ghana mandated to spear-head development in the various Municipalities and Districts. (GhanaDistricts.com/ Ministry of Local Government-Ghana)

The Municipal Assembly is the highest political and administrative body of the Municipal and therefore exercises deliberate legislative and executive functions. It was established by Legislative Instrument (L.I. 1906, 2007). It has a mission and responsibility to improve the quality of the people through sustainable development. To achieve this mission, the Assembly has sets up itself certain objectives:

- To facilitate the effective functioning of local government administration in the Municipality.
- To ensure efficiency and effectiveness in the use of resources of the Assembly and Decentralized Department in the Municipality.
- To monitor, co-ordinate and harmonize the implementation of development plans and activities in the Municipality.

- To facilitate the provision of basic social and economic infrastructure and services in the Municipality.

2.8.1 Functions

The functions of the Municipal Assembly, like all other Assemblies are basically derived from the legislative Instruments as mandated by the Local Government Act 462 of 1993.

These functions which are broadly aimed at attaining its objectives and fulfilling its mission of improving the quality of life of its people are to:

1. Be responsible for the overall development of the Municipal and ensures the preparation and submission of development plans and budget to the relevant Central Government Agency/Ministry through the Regional Co-ordinating Council (RCC).
2. Formulate and executive plans, programmes and strategies for the effective mobilization of the resources necessary of the overall development of the Municipality.
3. Initiate programmes for the development of basic infrastructure and provide Municipal works and services in the Municipality.

2.8.2 Organizational Structure

Generally, the Municipality is made up of the Municipal Chief Executive (MCE), 38 Assembly members of which 27 are elected by universal adult suffrage and 11 are appointed by the President in consultation with chiefs and interest groups in the Municipality. The one Member of Parliament (M.P.) in the Municipality is an ex-officio member. The Assembly sitting is chaired by a Presiding Member (PM)

elected from among the members of the Assembly.

In terms of procurement, the MCE is the head of procurement entity in the Assembly with Co-coordinating Director as the Secretary with the other supporting staff who make relevant input in procurement decisions. (Full detail available @ Ghanadistricts.com)

2.9 A TYPICAL PROCUREMENT PROCESS IN THE PUBLIC SECTOR (MUNICIPAL ASSEMBLY)

The following is a summary of the processes involved in procurement (of goods, works & services) in the public sector of Ghana according to the PPA.

2.9.1 Planning Procurement:

Generally, planning enables organizations to, among other things, determine performance standards, establish overall direction, anticipate and avoid future problems and reduce the risks of uncertainty, identify and commit resources towards the achievement of goals, determine and develop performance standards, and effectively coordinate various activities in the organization (PPB Manual, 2005). The Public Procurement Act, Act 663 provides for the activity of planning under Part 3 section 21. What the foregoing means is that it is imperative that procurement entities would need to plan their procurement for the coming year by the 30th of November of the preceding year. The plan would be reviewed and approved by their Entity Tender Committees (ETCs), after which the plans are updated every quarter.

2.9.2 Tendering Process

The requirement to advertise the intention to buy goods and works is spelt out by Section 47 of Act 663 for procurement using International and National Competitive Tendering. Advertising is required for invitations to tender if there is no pre-qualification. The object of advertising is to provide wide and timely notification of tendering opportunities so as to obtain maximum competition by informing all potential tenderers and to afford equal opportunities to all qualified and eligible tenderers without discrimination. For reasons of transparency, fairness and impartiality, tender documents should be provided for all eligible tenderers by the procuring entity. Procurement entities are to provide tender documents to suppliers and contractors in accordance with procedures and requirements that were stated in the advertisement. The price at which the tender document is sold should be enough to recover the cost of printing and the document being made available to suppliers and contractors. Sufficient quantities of tender documents should be made available as many as there are tenderers. It is an offence to deny any supplier or contractor the opportunity to participate in any tender simply because stocks of documents are exhausted. Tenders should be opened immediately after the close of tenders.

The Procurement Unit will need to ensure smooth operation of the proceedings, prepare minutes of the opening and advise the chairman of the opening session on procedural issues if requested. A Tender Opening Committee is usually constituted and is made up of at least three persons including the Chairperson. The Chairman of the Tender Opening Committee controls and directs the /Tender Opening and does not allow tenderers representatives to interfere with the work of the Committee. Any objections by a Tenderer to the procedures or decisions of the tender opening should be made in writing to the Head of the Procurement Entity. Section 55 of the Act

states that the provision of tender security is required for all International and National competitive tenders for procurement of goods, and works. In the case of Procurement of consultants services tender security is not required. The use of security is important, in particular, in international trade where the Purchaser may not know the Tenderer or Supplier's professional ability, financial position and credibility. Therefore it is normal for the Purchaser to demand that the Tenderer's or Supplier's ability to perform in accordance with the instructions or contractual obligations be secured with a financial guarantee.

2.9.3 Contracts Management

A formal contract document will be drawn up, using the agreed terms and conditions, and signed by both parties. Simpler requirements may use a purchase order or where existing framework contracts exist, contracting may consist of placing a call-off order under the existing contract. The awarded contract must then be managed, to ensure that both the buyer and supplier perform their contractual obligations. Activities may include expediting delivery, arranging inspection or freight forwarding, checking bank guarantees, establishing letters of credit, making arrangements for receipt and installation of goods, verifying documentation and making payments. Works contracts will often require technical supervision by an engineer/project management team to ensure quality, time schedule and cost. Contracts for consultancy services often require the direct participation of the buyer or client organisation, as the recipient of training or technical advice or in responding to studies or reports.

2.9.4 Monitoring and Evaluation

Controlling the performance of the procurement function and ensuring its efficiency and effectiveness is essential to the management of the procurement process. It is

vital to evaluate how well the procurement process has gone, identify any weaknesses or problems and agree actions to prevent similar problems in the future. Evaluation may include a formal procurement audit. Procurement monitoring is an essential part of procurement management and control linked to compliance with Act 663 and procurement. This will involve the management of entity, staff of PPA, private sector, oversight bodies (internal and external audit), civil society (including NGOs), project beneficiaries, and media (PPA Annual Report, 2008).

2.9.5 Appeals and Complaints

Part VII – Review -Section 78 of Act 663 deals with the procedures to be used in handling complaints received from aggrieved parties involved in the procurement process. Any supplier, contractor or consultant that claims to have suffered, or that may suffer loss or injury due to a breach of a duty imposed on the procurement entity, may seek review in accordance with this Part. Procurement decision-making process needs to be properly followed and documented so that complaints can be investigated within the strict time frame. Those involved in audit and in the prosecution of procurement related offences may be able to provide examples of where sanctions could not be applied as a result of poor or inadequate procurement records.

In Ghana, the Authority established seven (7) member Appeals and Complaints Panel comprising legal procurement experts, and representatives from the private and public sectors which was inaugurated in 2007. In the same year the Panel successfully concluded fourteen (14) cases out of twenty (20) cases received (PPA Annual report, 2007). The appeal and complains procedures allowed bidding firms with the chance to

show their disapproval before the procurement process is completed, as well as thereafter (Alam, 1995).

2.10 THE INFLUENCING FACTORS: TECHNOLOGY, ORGANISATION AND ENVIRONMENT.

There exists a plethora of models, theories or factors that have been used to explain technology adoption by organisations. However according to Veit et al (2010), most of these models and theories are based on psychology (e.g. Theory of Reasoned Action) or sociology (e.g. Innovation Diffusion Theory) and tailored towards information systems context and the most prominent being Technology Acceptance Model (TAM) and the Innovation Diffusion Theory (IDT) both of which utilise attributes of innovation to predict IT acceptance and have been successfully applied in studies on technology adoption.

Technology-Organization-Environment (TOE) Framework as proposed by Tornatzky and Fleischer (1990) (See Fig 2.3) may provide a useful starting point to explore E-Procurement adoption (Chau & Tam, 1997). According to the framework, a technological innovation decision is mainly driven by the organizational, technological and environmental context of the organization. The framework is already successfully used in and adapted to other information systems contexts. (Veit et al, 2010)

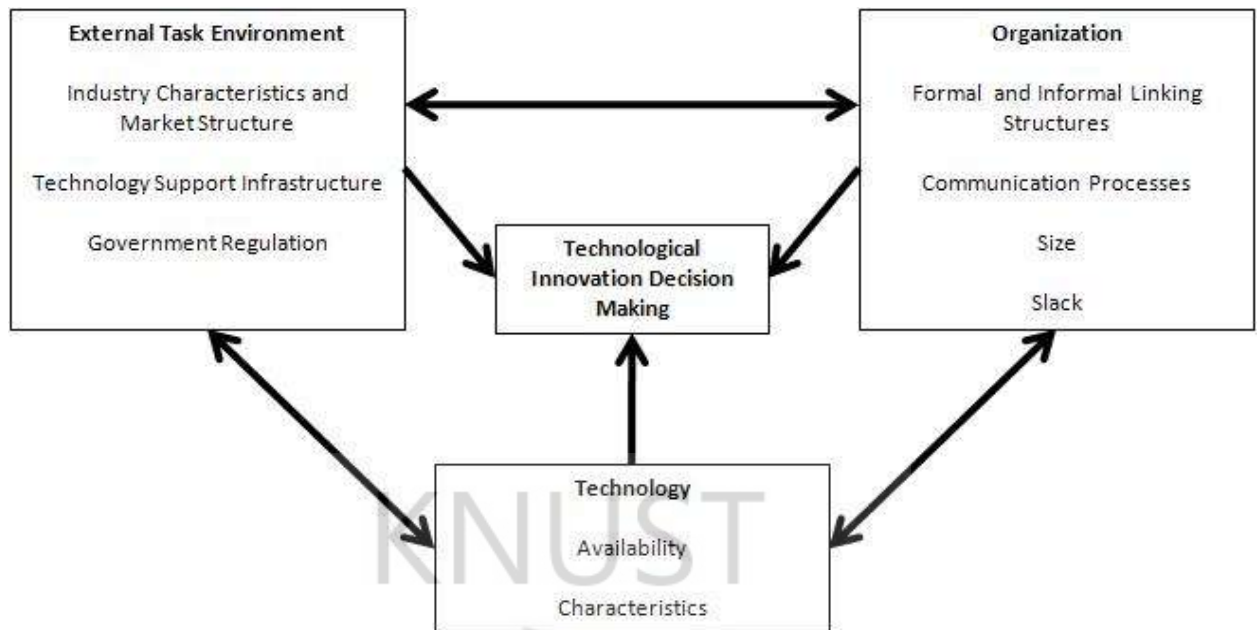


Fig.2.3 The TOE Framework [Source: Veit et al, (2010)]

2.10.1 TECHNOLOGY

The Concise Encyclopedia defines Technology as the Application of knowledge to the practical aims of human life or to changing and manipulating the human environment. Technology includes the use of materials, tools, techniques, and sources of power to make life easier or more pleasant and work more productive.

The technological context in the framework describes both the internal and external technologies relevant to the firm. This includes technologies existing inside the firm, as well as the pool of available technologies that are in the market (Soares-Aguiar & Palma-dos-Reis, 2008). Technologies are different. The nature, purpose, scope and benefits of each technology can make it suitable for different applications (Markus and Keil, 1994; Kaplan and Sahwney, 2000; Swanson, 1994). As asserted by Rogers (1995) the more beneficial a technology is perceived to be, the more appropriate for

its adoption. He posits that relative advantage, compatibility and simplicity in an innovation provide positive standing towards its adoption. (Azadegan &Teich, 2010)

Again, by MacInnis and Jaworski, (1989) model of Motivation, Opportunity and Ability (MOA) the attributes of a technology help motivate the adopter by offering certain perceived benefits to the adopter.

Furthermore the TOE framework by Tornatzky and Fleischer (1990) also posits that technologies with characteristics superior to other alternatives are more prone to adoption and as such, the major determinant of technology adoption is technology related factors (relative advantage, its compatibility in use with existing technologies and its simplicity in installation and application) that can enhance its attractiveness for the user. (Azadegan &Teich, 2010)

Crook & Kumar, (1998), Kuan & Chau (2001) and Goncalves et al (1999) among others allude to the fact of technological resources consistently being identified as an important factor for successful information systems adoption. Following that, Soares-Aguiar & Palma-dos-Reis (2008) posit technology competence as an adoption driver, which encapsulates three sub constructs: (1) IT infrastructure (2) IT expertise and (3) Business to Business (B2B) know-how.

IT Infrastructure:

IT infrastructure refers to the composite hardware, software, network resources and services required for the existence, operation and management of an enterprise IT environment. It allows an organization to deliver IT solutions and services to its

employees, partners and/or customers and is usually internal to an organization and deployed within owned facilities (Techopedia, 2013)

Typically, a standard IT infrastructure is distributed according to the following components:

Hardware: Servers, computers, data centers, switches, hubs and routers, etc.

Software: Enterprise Resource Planning (ERP), customer relationship management (CRM), productivity applications and more.

Network: Network enablement, Internet connectivity, firewall and security.

Meatware: Although conflicting, human users, such as network administrators (NA), developers, designers and generic end users with access to any IT appliance or service are also part of an IT Infrastructure, specifically with the advent of user-centric IT service development. (Source-Techopedia)

Apparently there is no incentive for any organisation such as the Municipal Assembly to adopt technologies like e-procurement in the absence of the needed resources or logistics to facilitate it. Computers, databases, technical platforms, and communication networks form the core of a firm's overall IT infrastructure resources according to Soares-Aguiar & Palma-dos-Reis (2008)

In fact staff must have easy access to telecommunication services, Internet services (which must be reasonably fast), and there must be enough computers to all the staff.

IT skills /Expertise:

As e-Procurement includes new technologies and changes in traditional procurement approaches, the need to train staff in procurement practices and the use of e-

Procurement tools are critical to the success of an e-Procurement initiative (WB, 2003). Having the requisite skills and knowledge to use the technology is an important factor that cannot be ignored if an organisation would be successful in adoption of a given technology such as e-procurement.

End-users can realize the immediate benefits of the e-Procurement system once they understand the operational functionalities (CGEC, 2002). This means that training should be given a high priority, alongside the need for public sector agencies to identify the skills required by all those engaged in procurement (ECOM, 2002). According to Still (2001) good IT skills are not only useful tools for researching and presenting ones work, they also reduce stress, save time and save money.

As technology alone does not ensure successful adoption, the success of a public sector e-Procurement initiative depends on users and buyers making use of the new process and system. (Vaidya et al, 2006). Enough IT qualified staff, readily available IT support for e-procurement, IT helpdesk readily available and well trained staff to use e-procurement system amongst other are all relevant to IT skills for e-procurement adoption. (Kaliannan et al, 2009)

Business to Business (B2B) know-how:

This is executive's knowledge of managing online procurement and ability to transact business with other businesses (suppliers, consultant, contractors etc.) via online.

2.10.2 ORGANISATION

A social unit of people that is structured and managed to meet a [need](#) or to pursue collective goals. All organizations have a management [structure](#) that determines

relationships between the different activities and the members, and subdivides and assigns [roles](#), responsibilities, and [authority](#) to carry out different tasks. Organizations are [open](#) systems-they affect and are affected by their environment. (Source: Business Dictionary.com)

Morye (2012) defines organization as the determining, grouping and arranging of the various activities deemed necessary for the attainment of the objectives, the assigning of people to those activities, the providing of suitable physical factors of environment and the indicating of the relative authority delegated to each individual charged with the execution of each respective activity.

Soares-Aguiar & Palma-dos-Reis (2008) defines the organizational context in terms of several descriptive measures: firm size; the centralization, formalization, and complexity of its managerial structure; the quality of its human resources; and the amount of slack resources available internally.

Tornatzky and Fleischer, (1990) proposed that scope and size are important factors for technology adoption. Thus, the larger the firm's scope, defined here as the geographical dispersion of a firm's operation (Zhu et al, (2003), the greater the demand for IT investment (Dewan et al, 1998; Hitt, 1999), which suggests that scope can be considered as a predictor for e-procurement adoption.

Firm size has also been consistently recognized as a technology adoption facilitator (Damanpour, 1992). With regard to technology adoption, larger firms have several advantages over small firms. Larger firms: 1) tend to have slacker resources to facilitate adoption; 2) are more likely to achieve economies of scale, an important concern due to the substantial investment required for e-business projects; 3)

are more capable of bearing the high risk associated with early stage investments in e-business; and 4) possess more power to urge trading partners to adopt the technology. (Soares-Aguiar & Palma-dos-Reis, 2008)

Teo et al. / Omega (2009) also buttresses the fact that larger firms tend to adopt new technologies more rapidly than their smaller counterparts and one possible explanation is that larger firms have more resources and may encounter a greater need to stay at the technological forefront than those with smaller operational scale. Moreover Top management support and commitment has often been considered crucial in any development and implementation process of a given technology such as IT adoption (Thong and Yap, 1995)

As firms enter the highly competitive global marketplace in today's highly digitized business arena, organizations need to consider another organizational factor that can potentially affect the adoption of an IT which is a firm's information sharing culture (Gunasekaran et al, 2008). E-procurement via the Internet requires firms to share information with its business partners. Since e-procurement has evolved to facilitate streamlining and automating the entire procurement process as well as making order and requisition information available along the entire supply chain, information sharing between and within organizations is indispensable (Teo et al. / Omega (2009). Further, information sharing helps to reduce information asymmetry, thereby also preventing opportunistic behaviors (Kim & Umanath, 2005). Moreover, Lin et al (2002) found that information sharing leads to lower total cost, higher fulfillment rate, and shorter order cycle time. It can also help to reduce information distortion (or bullwhip effect) along the supply chain (Balan et al, 2009)

Organizations can have different perspectives on how useful a technology may be. For some, adopting e-procurement technology may be risky ventures because of their lack of compatibility with their existing technology. Such perceptions are heavily influenced by the adopting organization's level of understanding of the technology. (Azadegan &Teich, 2010)

Another important factor that affects the organisation's ability to adopt new technology is the firm's readiness to adopt according to Roger's and TOE models. Readiness is in essence an organization's internal capability in accepting a new technology (Iacovou et al., 1995; Mehrtens et al, 2001). Availability of resources including accessible finances or personnel (Chwelos et al, 2001) can also impact organizational readiness. Capital funding for new equipment purchases, budgetary line items for training, and operational funding for added human resource needs may all be considerations for the adoption of new technologies (Azadegan &Teich, 2010). In summary, readiness includes the effects of three key determinants: (i) appropriate structure and culture which permit the introduction of innovations, (ii) the technological capabilities, know-how and personnel skills to implement and use the innovation and (iii) the financial means to purchase and to allocate adequate resources toward its implementation. (Azadegan &Teich, 2010)

2.10.3 ENVIRONMENT

The context of environment is the arena in which a firm conducts its business: its industry, its competitors, its access to resources supplied by others and its dealings with the government (Soares-Aguiar & Palma-dos-Reis, 2008). Sociological research on threshold models suggests that decisions to engage in a particular behaviour

depend on the perceived number of similar others in the environment that have already done so (Krassa,1998). Hence, if enough similar organizations act in a certain way, getting a particular course of action to become common throughout the sector, other firms will follow to avoid the embarrassment of being perceived as less innovative or less responsive (Goodstein, 1994)

Since E-procurement systems are generally B2B applications, business partners' influence is crucial in determining the adoption of e-procurement. Chwelos et al, (2001) and Hart & Saunders (1997) in their research found that business partner influence plays an important role in technological adoption. They suggest that organizations who have adopted Electronic Data Interchange (EDI) would attempt to influence their trading partners to adopt EDI as well, so as to increase their own benefits of adoption. This is because for an electronic trade to take place, it is necessary that all trading partners adopt compatible electronic trading systems and provide Internet-enabled services for each other (Soares-Aguiar & Palma-dos-Reis, 2008). Furthermore, E-procurement systems (EPS) may be more appropriate when there is a tight integration with suppliers' systems, which goes beyond the walls of an individual organization (Zhu & Kraemer 2002).

Although Soares-Aguiar & Palma-dos-Reis, (2008) could not find any studies examining mimicry/imitation of IT practices, there is implied evidence that followers, due to competitive pressures, imitate pioneers that have successfully exploited IT, especially in the banking and airline industries. Therefore, they posit that in the context of EPS adoption, potential adopters will be more likely to adopt it if they perceive that EPS has conferred success to competitors that adopted such technology.

Furthermore, as discussed in early part of this section, the way public procurement is carried out at the municipal level is influenced by the legal framework set by state and national authorities (PPA) as well as international regulators (World Bank). A legal framework that clearly fosters the use of electronic means throughout the whole public procurement process positively influences the adoption of E-Procurement. (Veit et al, 2010)

2.11. SUMMARY OF KEY POINTS FROM LITERATURE

2.11.1 The State of E-Procurement in the Public Sector &Capacity of E-Procurement Adoption in the Contextual Factors

Literature reviewed revealed that significant amount of public procurement expenditure takes up a huge chunk of GDP in the public sector worldwide and so the need to migrate from the traditional paper procurement to the use of internet related applications and platforms of electronic procurement, which according to Ramanathan (2004) promises significant savings through increased efficiency and effectiveness.

Following that, most countries worldwide (e.g. Spain, Germany, Portugal, Italy, Singapore, Denmark etc.) have all embarked on e-procurement and are at various stages of implementation. Ghana, like most of the countries across the globe, has realized the numerous benefits in moving from the manually paper-based procurement into the electronic highways. Therefore it becomes very necessary to identify Ghana's progress-the stage at which its current procurement practices have gotten to, relative to e-procurement.

Another significant finding in the literature is the capacity of electronic procurement adoption and the contextual factors as proposed by Tornatzky and Fleischer (1990),

mainly technology, organisation and environment. Essentially adoption of a given technology is influenced by these three major factors:

Technology:

- ❖ relative advantage, compatibility and simplicity (Azadegan &Teich, 2010)
- ❖ characteristics of the technology (Tornatzky and Fleischer, 1990)
- ❖ perceived benefits to the adopter (MacInnis and Jaworski, 1989)
- ❖ technology competence (IT infrastructure, IT expertise and Business to Business know-how) (Soares-Aguiar & Palma-dos-Reis, 2008)

Organisation:

- ❖ top management support and commitment (Thong and Yap, 1995)
- ❖ usefulness and level of understanding (Azadegan &Teich, 2010)
- ❖ the firm's readiness (Iacovou et al., 1995; Mehrtens et al, 2001).
- ❖ availability of resources including accessible finances or personnel (Chwelos et al, 2001)
- ❖ a firm's information sharing culture (Gunasekaran et al, 2008).

Environment:

- ❖ decisions to engage in a particular behaviour depend on the perceived number of similar others in the environments that have already done so (Krassa, 1998).
- ❖ hence, if enough similar organizations act in a certain way, getting a particular course of action to become common throughout the sector, other firms will follow to avoid the embarrassment of being perceived as less innovative or less responsive (Goodstein, 1994)

- ❖ mimicry/imitation of IT practices (Soares-Aguiar & Palma-dos-Reis, 2008)
- ❖ business partner influence (Chwelos et al, 2001; Hart & Saunders, 1997)
- ❖ a legal framework that clearly fosters the use of electronic (Veit et al, 2010)

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This study seeks to evaluate the capacity of Municipal Assemblies in Greater Accra Region to adopt e-procurement with respect to the influence of organizational, technological and environmental factors in a Multiple Case Study of the Municipal Assemblies. Thus this chapter presents the methodology employed to collect data to achieve the prime objective which has been to evaluate the Assemblies' capacities based on these factors (technology, organisation and environment) as proposed by Tornatzky and Fleisher (1990) as shown Fig 3.1

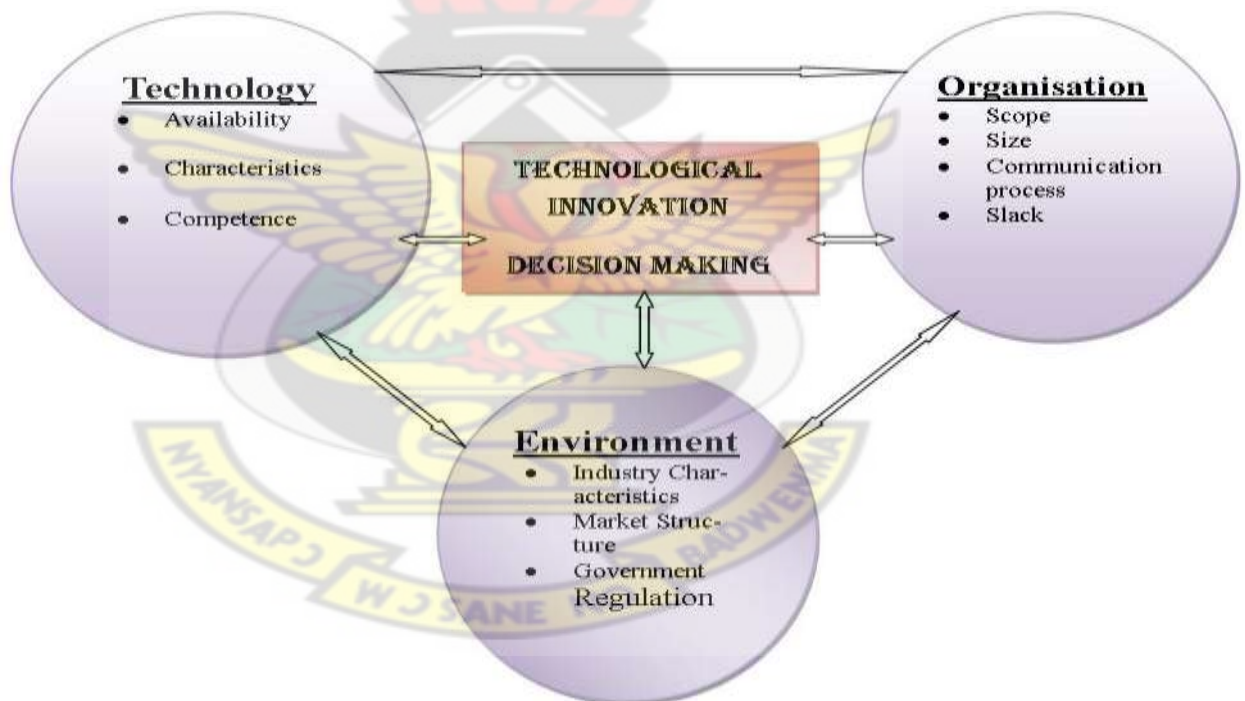


Fig 3.1. The TOE Frame Work adapted from Tornatzky and Fleisher Framework.

The major components of the methodology are the research design, research population, sampling method, research instruments and methods for collection and analysis of data.

3.2 RESEARCH DESIGN

The study took an exploratory qualitative Multiple-Case Study approach of the Assemblies. This enabled researcher to generalize results using analytical rather than statistical generalization (Yin, 2008). Greater Accra comprises Nine Municipal Assemblies and because the researcher wanted to reduce biases, increase representation and analyze E-Procurement adoption from different perspectives, all nine municipalities with varying characteristics were selected.

Following that semi-structured interviews were administered personally to respondents on a face- to- face bases. Moreover, discussions were held with some of the officials with different backgrounds and competences in procurement as well as personal observations of some of the responses given. Tables, figures, and charts have been employed to present and analyze the research data gathered from primary sources.

3.3 RESEARCH POPULATION

The target population of the study comprised officials (staff and top management) required to be either responsible for a significant area of public procurement within the municipalities or to have insights in all procurement relevant decisions in the municipalities. They included Procurement officers, Quantity Surveyors, Engineers, Stores Officers and Directors.

3.4 SAMPLE AND SAMPLING TECHNIQUES

There are nine (9) Municipal Assemblies in the Greater Accra Region and each of them was used in the research. Because of this the census method was used since it was suitable for the small population. Furthermore the purposive sampling technique

was employed which enabled the researcher to select and make the sample representative, depending on his opinion or purpose, thus making the representation subjective (Barreiro & Albandoz, 2001). In other words, the researcher chose those who he thought had technical knowledge in the subject matter and would also provide him with the relevant responses.

Thus for each Assembly, one Procurement officer (Head of Procurement or Senior Procurement officer), 1 Quantity Surveyor and/or Engineer/Stores Officer and 1 top management (Co-coordinating Director /Assistant Director/Municipal Chief Executive) were expected for the interview. Consequently, twenty seven (27) officials with various competences in procurement in the nine Municipalities were anticipated for the interview.

3.5 SOURCES OF DATA

Various instruments were used to gather data from primary sources. The primary sources provided data gathered through interviews and discussions and observations (e.g. computers, servers, routers etc.). The advantage of using primary data is that they are more reliable since they come from the original sources and were collected especially for the purpose of the study (Saunders et al 2007).

3.6 RESEARCH INSTRUMENTS

The research instruments used were basically semi-structured interviews, discussions, observations and telephone conversation. It must be emphasized that face to face administration of the interview and discussions proved very useful. Again Personal

Observation by researcher in the area of availability of computers, servers, routers etc. validated responses in that respect.

3.7 DATA COLLECTION METHODS

Prior to the administration of the interviews, the relevant officials (such as Secretaries, Administrators of the Assemblies and the Municipal Coordinating Director (MCD)) were contacted for permission. The researcher also visited some of the Assemblies to familiarize himself with some of the respondents. It was after this that the interviews were conducted. However, in the case of some of the top management members, appointments were scheduled for the interview and discussions.

A case study protocol was also used to purposefully guide the researcher during data collection, entailing field procedures and case study questions (Budgen, 2009; Yin, 2003). According to Benbasat et al (1987), confidentiality and benefits to the organization are two important issues that need to be addressed in order to gain cooperation. Thus the benefit to the municipality was certainly assured by offering them access to the final research results.

Again an interview guide was used to govern the goals, tactics and techniques that were required to focus questions while leaving space for new ideas and opinions beyond the theoretical boundaries of the researcher (Gorden, 1987). It was envisaged that nine (9) working days would be spent in administering the interviews but instead thirteen (13) working days were used. This was because some of the respondents were not be available at the time of the researcher's visit, so the date was then be re-

scheduled. Semi-structured interview format of twenty seven (27) questions were administered.

The case study questions entailed queries about the respondent's responsibility within the municipality, the size of organization spend, state of e-Procurement in the public sector, the capacity of E-Procurement adoption and contextual factors. It must be emphasized that, the open questions used allowed respondents to argue about additional factors influencing E-Procurement adoption. The interview questions required respondents to provide yes or no answers but with the chance to argue out other factors that was very necessary for exploratory study.

The languages that were used were English and Ga/Twi to enable respondents express themselves freely. The mode of interview and discussions were on face to face bases.

3.8 DATA ANALYSIS METHOD

Four stages of qualitative data analysis were utilised by the researcher. These included:

1. data assembling from variety of sources,
2. data reduction which involved organization and structuring of qualitative data,
3. data display which involved summarizing and presenting the structure that was seen in qualitative data and
4. finally data verification involving seeking alternative explanations and interpretations of qualitative data through other data sources.

Editing of the data to detect and correct, possible errors and omissions that were likely to occur so as to ensure consistency of responses of respondents.

Coding of the data to enable respondents to be grouped into limited number of categories;

The Microsoft Excel software was used for this analysis. This facilitated the generation of tables from the response data from which narrative analysis and inferences have been made.



CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

This chapter presents and analyses data collected through administration of semi-structured interviews, observations, discussions and telephone conversations conducted with respondents. In using the research instruments, attempts were made to determine correlations that existed among variables.

4.2 BACKGROUND OF RESPONSES

Generally responses given were very relevant to the achievement of the objectives. It was observed in almost all the Assemblies that responses from the various officials interviewed were generally similar even though the interview was administered individually. For instance at Adentan Municipal Assembly, both the Procurement and Stores Officers showed their awareness of the use of electronic procurement in the country as well as indicated the Assembly's use of the internet services in the premises.

The only time their responses varied was when asked whether the Assembly was ready to migrate to e-procurement. The Stores officer felt they were not fully ready because to him there was the need for more and more training in that area. In contrast, the Procurement Officer argued that already the Assembly has computers, servers with internet connectivity which could facilitate the commencement of the programme. But this was the preserve of the researcher nonetheless. In fact similar results were obtained across the Assemblies. This was probably due to the fact that

conditions pertaining to each of the Assemblies, such as whether the Assembly has computers, servers, internet services, nature of top management, employees sophistication in ICT their business partners etc. were generally very obvious to the respondents.

4.3 DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Respondents were classified into the following demographic characteristic:

- Educational attainment
- Profession or occupation
- Status or position

The demographic characteristics of the respondents had significant impact on responses given by the respondents on electronic procurement adoption at the Municipal Assemblies.

In terms of education, respondents of the study area were very literate (Table 4.1); the qualification ranges from Higher National Diploma, Bachelor's Degrees to Masters Degrees. 29.41% had HNDs, 35.29% had BSC/BA and 35.29% Masters Degrees, some with relevant Professional Bodies Association. This level of literacy enhanced the research, especially during the data collection because most of the respondents would understand the issues related to procurement in the Assembly and beyond.

Moreover respondents held various positions in the Assembly where they have significant insight into procurement and/or make relevant procurement decisions in the Assembly.

Table 4.1: Level of education of respondents

Category	Number	Percentage
Higher National Diploma	5	29.41
Bachelor's Degrees	6	35.29
Masters Degrees	6	35.29
TOTAL	17	100.00

Source: Researcher's Fieldwork data, October 2013

4.4 STATE OF ELECTRONIC PROCUREMENT IN GHANA

In achieving the main objective of evaluating the capacity of Municipal Assemblies to adopt electronic procurement with respect to the influence of technological, organisational and environmental factors, the Municipal Assemblies have been evaluated based on the influencing factors to identify their current state of doing electronic procurement in Ghana.

When interviewed on the state of e-procurement in Ghana, all respondents (nine Assemblies) acknowledged the use or the application of some form of ICT in doing procurement in the country but in the private sector (Table 4.2). With respect to internet connectivity which is a major infrastructural requirement for electronic

procurement, GaCMA, AshMA, AdMA, LaDMA and LeKMA all (representing 58.82% of the respondents in the Five (5) Municipal Assemblies) have it in place running, whilst GaSMA, GaWMA, LaNMA & GaEMA constituting 41.18% did not have internet connectivity installed (Table 4.2).

On their involvement in any e-procurement activities, respondents from four Assemblies admitted that they had taken part in similar activities before whilst the remaining five answered in the negative. Thus those that said they had taken part in e-procurement activity were further asked which e-procurement activity it was. They referred to a training programme on e-procurement they attended. In fact those respondents (particularly Head of Procurement) who affirmed their participation were actually referring to this workshop on electronic procurement organized by PPA and Dr. Kessie of Engineering Services Ltd.

But for real electronic procurement activities such as e-noticing or correspondence etc., the researcher noted that none of the Assemblies had ever done e-procurement before.

Again respondents across Assemblies confirmed their traditional paper based procurement they have been practicing, except that they essentially prepare the bidding/ requisition document electronically (i.e. using the computer) and also do evaluation electronically (on the computer). However those (GaCMA, AshMA, AdMA, LaDMA, LeKMA) that have internet connectivity also send their procurement plan to the PPA via the internet. In spite of the fact that these Assemblies have active internet connectivity, it is not being used for the purpose of procurement.

All respondents said their respective Assemblies neither publish procurement notices/ requisitions/ tenders on-line nor ever receive tenders on line; they all do it via the print media (**Table. 4.2**).

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Table 4.2 Responses on State of E-Procurement in Ghana

Municipal Assembly	AoEP		IC		PEPA		PPPB		PBP+EBP		PPNRTO		RTO	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
AdMA	√		√		√		√		√			×		×
AshMA	√		√		√		√		√			×		×
GaCMA	√		√		√		√			×		×		×
GaEMA	√			×		×	√			×		×		×
GaSMA	√			×		×	√			×		×		×
GaWMA	√			×		×	√			×		×		×
LaNMA	√			×		×	√			×		×		×
LaDMA	√		√			×	√			×		×		×
LeKMA	√		√		√			×		×		×		×
TOTAL	9	0	5	4	4	5	8	1	2	7	0	9	0	9

Legend:

- AoEP - Awareness of Electronic Procurement
- IC - Internet Connectivity
- PEPA - Participation in Electronic Procurement Activity
- PPPB - Procurement Process Paper Based
- PBP+EBP - Paper Based Procurement and Electronic Based Procurement
- PPNRTO - Publication of Procurement Notices/Requisitions/Tenders On-line
- RTO - Receipt of Tender On-line

Source: Researcher's Fieldwork data, October 2013.

4.5 CAPACITY OF E-PROCUREMENT ADOPTION IN TERMS OF THE CONTEXTUAL FACTORS

In order to enable the researcher assess the capacity of the Municipal Assembly to adopt e-procurement, respondents were quizzed on the contextual factors relating to the research-technology, organisation and environment as proposed by Tornatzky and Fleisher (1990) (**Fig 3.1**).

All respondents agreed that technology is a major factor which can influence ones capacity to adopt a given innovation like e-procurement, giving myriad of reasons: enhancement in work flow and productivity, efficiency, flexibility etc. (**Table 4.3**).

Again they confirmed that the relative advantage, compatibility and simplicity of e-procurement would greatly impact on their decision to adopt it. For reasons of provision of highly superior characteristics over the traditionally paper based, they would opt for the adoption electronic procurement (**Table 4.3**).

Apparently respondents assertion to these characteristics of technology, corroborate Tornatzky and Fleisher (1990) TOE framework, as espoused in the objectives, that technology adoption is influenced by three major factors, the organisation, the environment and the technology itself.

Table 4.3 Respondents on Technology

Municipal Assembly	TaF		SCAR		SC	
	Yes	No	Yes	No	Yes	No
AdMA	√		√		√	
AshMA	√		√		√	
GaCMA	√		√		√	
GaEMA	√		√		√	
GaSMA	√		√		√	
GaWMA	√		√		√	
LaNMA	√		√		√	
LaDMA	√		√		√	
LeKMA	√		√		√	
TOTAL	9	0	9	0	9	0

Legend:

- TaF - Technology as a Factor
- SCAR - Simplicity, Compatibility and Relative Advantage
- SC - Superior Characteristics

Source: Researcher's Fieldwork data, October 2013.

Technology competence (**Table. 4.5**) as proposed by Soares-Aguiar & Palma-dos-Reis (2008) is one of the major infrastructural requirements for any organisation in order to adopt ICT applications including availability of computers and servers, internet connectivity, presence of IT department, percentage of employees that could utilise internet and computer related applications etc.

The researcher observed that five (5) out of the nine Assemblies-GaCMA, AshMA, AdMA, LaDMA and LeKMA exhibited some substantial level of technology

competence which the researcher believes could facilitate innovation adoption like e-procurement. They have fully functional computers and servers as well as IT department and averages of 87.50%, 75%, 94%, 94% and 75% of employees respectively could easily access the internet and send email via internal and external addresses.

Approximately an average of 85.10% estimated in five of the Municipalities has the capacity to use the internet and related applications (**Table 4.4**).

Table 4.4 Percentage of employees who are capable of utilizing the Internet and related Applications

Municipal Assembly	PEEIEA	PEBI
	%	%
AdMA	94.00	94.00
AshMA	75.00	75.00
GaCMA	87.50	87.50
GaEMA	—	—
GaSMA	—	—
GaWMA	—	—
LaNMA	—	—
LaDMA	94.00	94.00
LeKMA	75.00	75.00

Legend:

PEEIEA - Percentage of Employees can send Email to Internal and External Addresses

PEBI - Percentage of Employees can Browse the Internet

Source: Researcher's Fieldwork data, October 2013.

What it means is that these five Assemblies would have the necessary human resource base to support e-procurement implementation. Even though respondents from

GaEMA, GaSMA, GaWMA and LaNMA told researcher their ability to utilise the internet, it became very difficult for the respondents and researcher to estimate because they did not even have the internet services for one to use it to determine how many of the employees could utilise it.

Apparently all respondents could utilise some of the basic applications on the Microsoft Suite such as Word, PowerPoint and Excel (Table 4.5).

Fig 4.5 Technology Competence

Municipal Assembly	CS		IIS		ITD		EoIA		MSP	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
AdMA	√		√		√		√		√	
AshMA	√		√		√		√		√	
GaCMA	√		√		√		√		√	
GaEMA	*√			×	√		*√		√	
GaSMA	*√			×	√		*√		√	
GaWMA	√			×	√		*√		√	
LaNMA	*√			×	√		*√		√	
LaDMA	√		√		√		√		√	
LeKMA	√		√		√		√		√	
TOTAL	9	0	5	4	9	0	9	0	9	0

Legend:

- CS - Computers and Servers
- IIS - Internet and Intranet Services
- ITD - Information Technology Department
- EoIA - Ease of Internet Access
- MSP - Microsoft Suite Products

Source: Researcher's Fieldwork data, October 2013.

Again GaEMA, GaSMA and LaNMA all have IT departments, computers as asterisked but did not have servers to support internet connectivity. However

GaWMA even though has IT department, computers and servers, internet connectivity had not yet been installed throughout the Assembly.

On the context of organisation, all 9 Assemblies as shown below (**Table. 4.6**) found it to be a factor of impact on their decision to adopt e-procurement, saying that the Municipal Assembly with its complex structure can become more efficient using ICT to facilitate, streamline and link the work of the various department and units of the Assembly.

All respondents conceded that the Assembly operates in very wide range of scope of works from works to goods and services which would have to be efficiently coordinated in order to get value for money from their operations, and electronic procurement could best facilitate that.

As part of trying to achieve the ultimate aim of evaluating the capacity of Municipal Assemblies to adopt electronic procurement on the basis of technology, environment and organisation, the nature and scope of work was considered to be one of the many determinants of technology adoption, i.e. the larger the scope the more the propensity for technology adoption. Thus with the Assemblies operating in very wide range of scope, adopting e-procurement in their day to day procurement activities could enhance efficiency.

Table 4.6 Responses on Organisational issues

Municipal Assembly	OaF		S&S		TMS		Rdns	
	Yes	No	Yes	No	Yes	No	Yes	No
AdMA	√		√		√		√	
AshMA	√		√		√		√	
GaCMA	√		√		√		√	
GaEMA	√		√		√		√	
GaSMA	√		√		√		×	
GaWMA	√		√		√		√	
LaNMA	√		√		√		√	
LaDMA	√		√		√		√	
LeKMA	√		√		√		√	
TOTAL	9	0	9	0	9	0	9	0

Legend:

- OaF - Organisation as a Factor
- S&S - Scope and Size
- TMS - Top Management Support
- Rdns - Readiness

Source: Researcher's Fieldwork data, October 2013.

Again all respondents across the 9 Assemblies told the researcher that if they had prepared any proposal for e-procurement adoption with all its benefits, their top management would not hesitate to embrace it. In fact some of the respondents (AdMA, AshMA, GaCMA, GaEMA and GaWMA) who are also part of top

management in clear terms said they were ready to support any laudable proposals for any innovation adoption as far as it would benefit their Assemblies.

The researcher also observed that Six (6) of the nine Municipal Assemblies (GaCMA, AshMA, AdMA, GaEMA, LaDMA & LeKMA) maintained both electronic and paper data base of their contractors, suppliers and consultants whilst GaSMA, LaNMA and GaWMA kept theirs manually, though they indicated their desire to transfer them to electronic form (**Table 4.7**).

Information sharing culture is one of the many organisational factors that can influence a firm to become more innovative. But the researcher observed that all the respondents (all nine Municipal Assemblies) said their official mode of information sharing are all paper based (memos, notices, letters etc.) (**Table 4.7**).

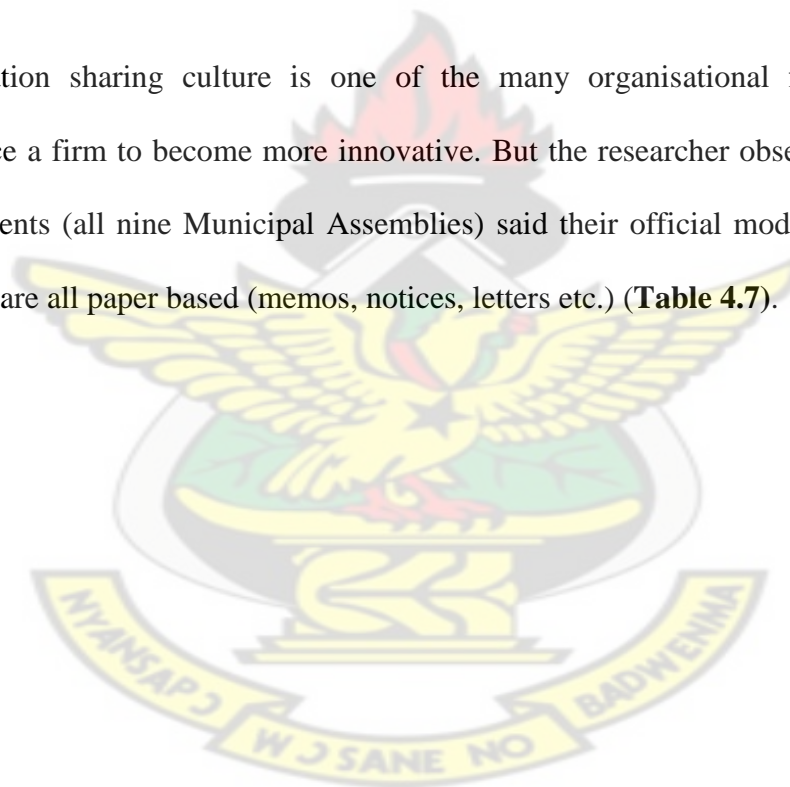


Table 4.7 Responses on Data Storage and Information Sharing

Municipal Assembly	DS		ISC	
	Manual	Electronic	Manual	Electronic
AdMA	√	√	√	
AshMA	√	√	√	
GaCMA	√	√	√	
GaEMA	√	√	√	
GaSMA	√		√	
GaWMA	√		√	
LaNMA	√		√	
LaDMA	√	√	√	
LeKMA	√	√	√	
TOTAL	9	6	9	0

Legend:

DS - Data Storage

ISC - Information Sharing Culture

Source: Researcher's Fieldwork data, October 2013.

Soares-Aguiar & Palma-dos-Reis (2008) talked about the environment as the arena in which a firm conducts its business: its industry, its competitors, its access to resources supplied by others and its dealings with the government and this was corroborated by all the respondents but GaEMA (Table 4.8).

Table 4.8 Responses on Environmental Factors

Municipal Assembly	EaF		LF		CBPVI		BPI		P M T	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
AdMA	√		√			×		×		×
AshMA	√		√		*√		*√			×
GaCMA	√		√			×		×		×
GaEMA	×		√			×		×		×
GaSMA	√		√			×		×		×
GaWMA	√		√			×		×		×
LaNMA	√		√			×		×		×
LaDMA	√		√			×		×		×
LeKMA	√		√			×		×		×
TOTAL	9	0	9	0	1	8	1	8	0	9

Legend:

EaF - Environment as a Factor

LF - Legal Framework

CBPVI - Correspondence with Business Partners Via Internet

BPI - Business Partners Influence

P M T - Pressure to Mimic ones Technology

(Source: Researcher's Fieldwork data, October 2013)

The corroborators (GaCMA, AshMA, AdMA, LaDMA ,LeKMA ,GaSMA, GaWMA, LaNMA) argued that the Municipal Assembly could thrive well in an environment where there was more innovation because it would have influence them positively and

it would have connected them to their business partners as well. For the lone dissenter (GaEMA), the Assembly operates in an environment where there are lay down laws so if the law does not compel you to use a given innovation, you are not under any obligation to use it.

All respondents (17) also conceded that they cannot carry out procurement in the absence of government regulations such as the public procurement legal framework. “In fact as is the law and also approved by the Local Government Services, they are obliged to go by it!” as stated by a respondent. Consequently if the legal frame work clearly outlines procedures and guideline on electronic procurement and also sanctioned by the Head of Local Government, they are bound to utilise it.

When asked about whether their business partners correspond with them via the internet or are more sophisticated in terms of ICT so that it would make the Assembly want to be on the same page with them, all respondents without hesitation said 99.99% of them are not inclined towards that line ICT sophistication (**Table 4.8**).

In fact only one respondent from AshMA conceded that business partners’ influence could to some extent impact on their decision to adopt a given innovation. This goes to buttress the point that all the Assemblies did not find the private sector’s use of ICT innovations as an environmental factor that could impact their decision to want to adopt such innovations because they as Assemblies had been set up by laws and their scope of works have been cut out for them. Even if they wanted to, they would not be able to because it would not have been sanctioned by laws and the Head of Local Government (**Table 4.8**).

The researcher also wanted to find out from respondents other factors apart from those in context that could influence them to adopt electronic procurement and responses such as value for money, benefits of e-procurement, attitudes of employees, Economic factors, Regular power supply and current trends, political will, motivation, Corruption Reduction, Efficiency Enhancement amongst others were given.

From the foregoing, the following (**Fig. 4.1**) is adapted from PayStream Advisors (2013) indicating the state of electronic procurement in the public sector and which Municipal Assemblies has the capacity to migrate to e-procurement.



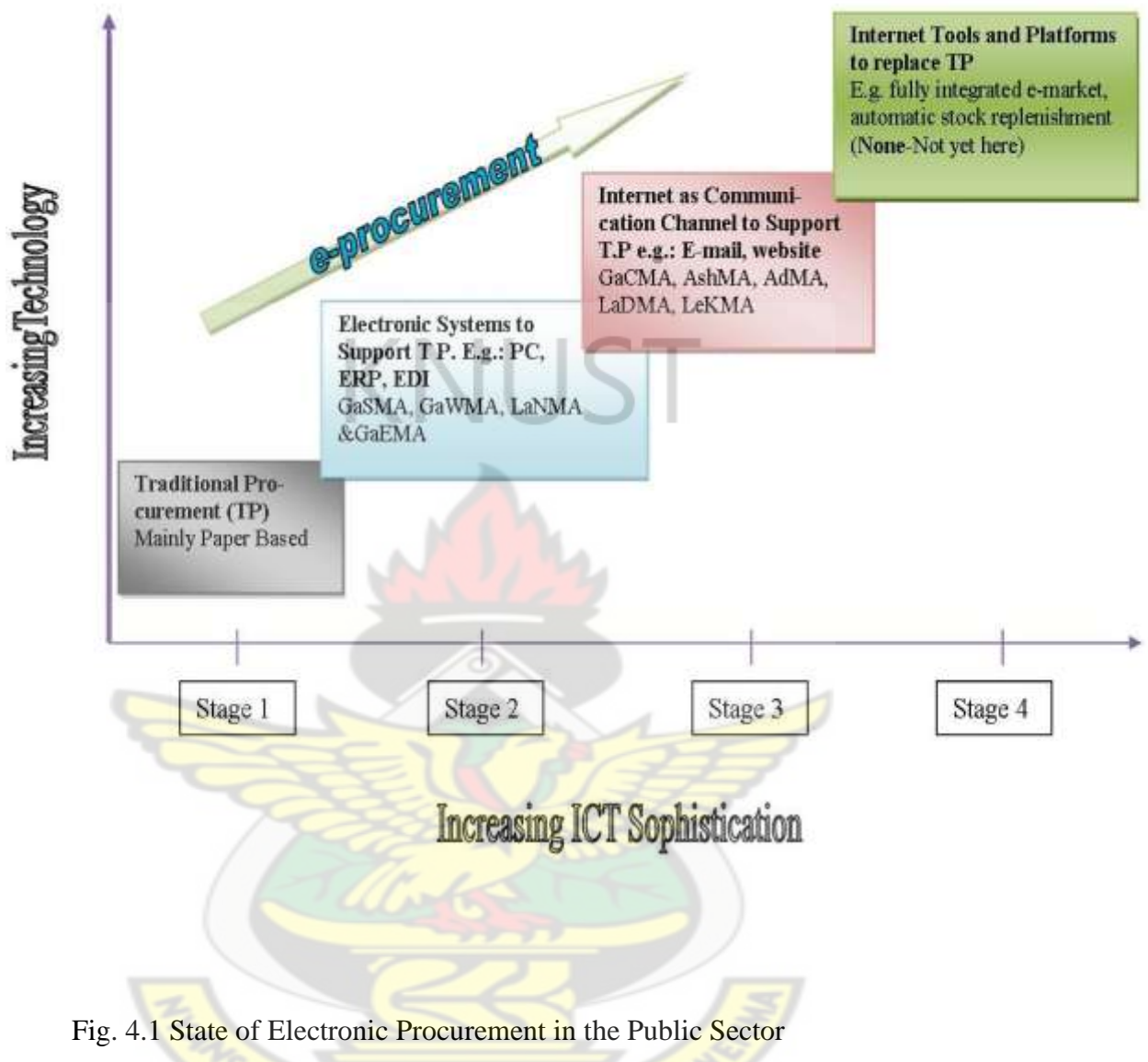


Fig. 4.1 State of Electronic Procurement in the Public Sector

According to the model, adoption of a given technology such as electronic procurement increases with time as knowledge in ICT increases, as evidenced in the evolution of e-procurement (refer to page 17). It represents the different stages of e-procurement migration. Apparently all the Municipal Assemblies can be said to be at stages 2 and 3 where traditional procurement is complemented with various electronic systems such as the use of computers, photocopiers, servers, routers etc. And a few others like GaCMA, AshMA, AdMA, LaDMA, and LeKMA have gone extra mile

(stage 3) to have internet connectivity with emails and websites, even though they are yet to be used for any of the procurement processes.

In spite of this progress made so far, not all the features have been explored even at these stages. In fact none of the Assembly was capable of even doing Electronic Data Interchange (EDI) with their service providers (suppliers, contractors and consultants) who on the other hand have barely anything to show in terms of ICT sophistication. Again those with websites have very little to show there and for procurement activities, not much can be said about it.

Thus, there is no Municipal Assembly (zero percent) that is fully capable of migrating to the fully integrated internet tools and platforms of e-procurement at stage 4.

It is only 55.56% (representing five- GaCMA, AshMA, AdMA, LaDMA, and LeKMA- of the nine Assemblies) that could be placed at a stage 3 where internet is used as communication channel to support traditional procurement, even though this feature is not fully being utilised by these Assemblies.

The remaining 44.44% of them (GaSMA, GaWMA, LaNMA & GaEMA) are all at the stage 2 where traditional procurement is supported by electronic systems and like the other stage described earlier, not all the features here are being explored by these Assemblies.

Quite a lot need to be done in order to improve and modernise the procurement processes in the public sector. Activities in the public sector is the preserve of the

Government, so it becomes imperative on the government to adequately equip the various Assemblies in terms of physical infrastructure (computers, servers, fax machines, routers, building facilities etc.) which support innovation adoption.

Moreover, the Assemblies must also be beefed up with needed human resource with the knowledge and expertise that can support technology adoption such as e-procurement.

Organizationally, the Assemblies need to be allocated the needed financial resources which would facilitate their activities for services which are mainly outsourced through procurement, for which e-procurement could enhance effectively.

Environmentally, there is the need for a well-defined legal frame work which would foster the use of electronic procurement in the public sector. This would require the formulation of a national ICT policy.

CHAPTER FIVE

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter presents the findings of the study from which conclusions are drawn and for which recommendations are made to key actors in procurement of works, goods and services in the public sector (Municipal Assemblies) as well as the Government that regulate procurement activities in the public sector.

5.2 FINDINGS

This study was to evaluate the capacities of Municipal Assemblies to adopt electronic procurement with respect to the influence of three major factors; Technology, Organisation and Environment. In view of that, the following findings have been made.

On the issue of technology, the researcher observed five out of the nine Municipal Assemblies (Ga Central, Ashaiman, Adenta, La Dade-Kotopong and Ledzokuku-Krowor) met most of the major criteria for e-procurement adoption in terms of technology (i.e. technology competence) whilst Ga South, Ga East and La Nkwantanang-Madina could not meet such criteria; they did not even have internet connectivity. (Tables 4.4 and 4.5)

Ga West even though had all the computers and servers including IT department did not have internet connectivity that could facilitate e-procurement adoption.

In terms of organization, all nine Assemblies met the criteria for top management support. (Table 4.6). GaCMA, AshMA, AdMA, LaDMA and LEKMA also kept both electronic and manual database of contractor and suppliers, whilst GaSMA, GaEMA, GaWMA and LaNMA kept everything entirely manual (Table 4.7).

Again all the Assemblies could not meet the criteria for information sharing because their modes of sharing information were the manual ways (memos, notices, letters etc) (Table 4.7).

Environmentally, none of the Assemblies had business partners with IT sophistications which could have motivated them to toe same line (Table 4.8). Moreover, in terms of the legal framework which would foster the use of e-procurement, all nine Assemblies did not hesitate to show their readiness to utilise it should it be available. (Table 4.8).

And finally a very significant discovery from this study, which was also re-echoed by the Head of Procurement at Ga East Municipal Assembly, was the fact that Ghana as country does not have National or Constitutional Law on Internet Operations (i.e. Internet Laws).

5.3 CONCLUSION

This study focused on the evaluation of the capacity of Municipal Assemblies to adopt E-Procurement in the context of technological, organisational and environmental factors. The evaluation was based on the framework proposed by

Tornatzky and Fleisher (1990) which came out that none of the Municipal Assemblies in the Greater Accra Region was fully capable in terms of their capacities in technology, organisation and environment to fully migrate all their traditional procurement processes which are mainly paper based to the use of fully integrated internet tools and platforms of electronic procurement (fig.4.1).

However, five of the nine Municipal Assemblies (Ga Central, Ashaiman, Adenta, La Dade-Kotopong and Ledzokuku-Krowor) exhibited some level of abilities especially in technology competence and organisation to adopt electronic procurement to some extent (tables 4.4 to 4.7), so they are placed at stage 3 of e-procurement migration (see fig 4.1).

Meanwhile, Ga South, Ga West, Ga East and La Nkwantanang-Madina could not exhibit same; they are also placed at stage 2 of the migration where traditional procurement is supported with electronic systems (see fig 4.1).

Finally it was discovered that Ghana as a Nation does not have National Internet Laws (National IT Policy) to regulate the use of the internet in various capacities such as electronic procurement.

5.4 RECOMMENDATIONS

Following the findings and conclusion, Municipal Assemblies must begin to have a critical assessment of their traditional procurement practices over the years, in areas of technology, their organisation and their operating environment, in order to identify

current trends being used all over the world which have proven to be much more efficient with reduced corruption and high outcomes for value for money.

Government must equip the various Assemblies in terms of physical infrastructure (computers, servers, fax machines, routers, building facilities etc) and needed human resources which would support technology adoption.

Top management apart from showing support for innovation such as e-procurement must also show the right commitment to such innovations so that it would make the adoption much easier (Thong & Yap, 1995).

The government must also facilitate the use of electronic procurement in the public sector by putting in place the necessary laws such as National internet laws so as to enforce them in the public sector.

Finally future research could be carried out to assess how e-procurement adoption and other complex Government policy objectives interact in the similar context (technology, organisation and environment).

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APPENDIX

TABLES:

Table 2.1: Benefits of e-Government

	GOVERNMENT	SUPPLIER	PUBLIC
Transparency	Anti-corruption Increased number of suppliers	Increased fairness and competition Improved access to the government market	Access to public procurement information Monitor public expenditure information
	Better integration and interaction between governments	Open the government market to new suppliers	“Have a say”
	Professional procurement monitoring Higher quality of procurement decisions and statistics Political return from the public	Stimulation of SME participation Improved access to public procurement information Government accountability	Government accountability
Efficiency <i>Costs</i>	Lower prices Lower transaction costs Staff reduction Reduction in fiscal expenditure	Lower transaction costs Staff reduction Improved cash flow	Redistribution of fiscal expenditure
<i>Time</i>	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

Table 2.2: Legal Framework of Public Procurement Practices in the Public Sector of Ghana

LEGAL FRAMEWORK	SUMMARY
Public Procurement Act, 2003 (Act 663)	Provide a comprehensive legal regime to harmonize and safeguard public procurement
Public Procurement Regulations	Contains detailed rules and procedures for all aspects of the procurement system, the operations of PPA and procurement entities and the conduct of procurement activities.
Guidelines	Issued by the Public Procurement Board (PPB) which provides supplementary guidance on disposal, single source procurement, margins of preference, framework contract agreements, sustainable public procurement (SPP) etc.
Standard Tender Documents (STDs)	They comprise standard invitation and contract documents for procurement of all values. There are separate standard tender documents for goods, works and services STDs have been listed in Schedule 4 of the Act 663
Public Procurement Manual	Provides practical guidance and step-by-step procedures for undertaking procurement in accordance with the Act.

Table 4.1: Level of education of respondents

Category	Number	Percentage
Higher National Diploma	5	29.41
Bachelor's Degrees	6	35.29
Masters Degrees	6	35.29
TOTAL	17	100.00

Table 4.2: Responses on State of E-Procurement in Ghana

Municipal Assembly	AoEP		IC		PEPA		PPPB		PBP+EBP		PPNRTO		RTO	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
AdMA	√		√		√		√		√			×		×
AshMA	√		√		√		√		√			×		×
GaCMA	√		√		√		√			×		×		×
GaEMA	√			×		×	√			×		×		×
GaSMA	√			×		×	√			×		×		×
GaWMA	√			×		×	√			×		×		×
LaNMA	√			×		×	√			×		×		×
LaDMA	√		√			×	√			×		×		×
LeKMA	√		√		√			×		×		×		×
TOTAL	9	0	5	4	4	5	8	1	2	7	0	9	0	9

Table 4.3: Respondents on Technology

Municipal Assembly	TaF		SCAR		SC	
	Yes	No	Yes	No	Yes	No
AdMA	√		√		√	
AshMA	√		√		√	
GaCMA	√		√		√	
GaEMA	√		√		√	
GaSMA	√		√		√	
GaWMA	√		√		√	
LaNMA	√		√		√	
LaDMA	√		√		√	
LeKMA	√		√		√	
TOTAL	9	0	9	0	9	0

Table 4.4: Percentage of employees who are capable of using internet and related applications

Municipal Assembly	PEEIEA	PEBI
	%	%
AdMA	94.00	94.00
AshMA	75.00	75.00
GaCMA	87.50	87.50
GaEMA	—	—
GaSMA	—	—
GaWMA	—	—
LaNMA	—	—
LaDMA	94.00	94.00
LeKMA	75.00	75.00

Table 4.5: Technology Competence

Municipal Assembly	CS				ITD		EoIA		MSP	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
AdMA	√		√		√		√		√	
AshMA	√		√		√		√		√	
GaCMA	√		√		√		√		√	
GaEMA	*√			×	√		*√		√	
GaSMA	*√			×	√		*√		√	
GaWMA	√			×	√		*√		√	
LaNMA	*√			×	√		*√		√	
LaDMA	√		√		√		√		√	
LeKMA	√		√		√		√		√	
TOTAL	9	0	5	4	9	0	9	0	9	0

Table 4.6: Responses on Organisational issues

Municipal Assembly	OaF		S&S		TMS		Rdns	
	Yes	No	Yes	No	Yes	No	Yes	No
AdMA	√		√		√		√	
AshMA	√		√		√		√	
GaCMA	√		√		√		√	
GaEMA	√		√		√		√	
GaSMA	√		√		√		×	
GaWMA	√		√		√		√	
LaNMA	√		√		√		√	
LaDMA	√		√		√		√	
LeKMA	√		√		√		√	
TOTAL	9	0	9	0	9	0	9	0

Table 4.7: Responses on Data Storage and Information Sharing

Municipal Assembly	DS		ISC	
	Manual	Electronic	Manual	Electronic
AdMA	√	√	√	
AshMA	√	√	√	
GaCMA	√	√	√	
GaEMA	√	√	√	
GaSMA	√		√	
GaWMA	√		√	
LaNMA	√		√	
LaDMA	√	√	√	
LeKMA	√	√	√	
TOTAL	9	6	9	0

Table 4.8: Responses on Environmental Factors

Municipal Assembly	EaF		LF		CBPVI		BPI		P M I	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
AdMA	√		√			×		×		×
AshMA	√		√		*√		*√			×
GaCMA	√		√			×		×		×
GaEMA	×		√			×		×		×
GaSMA	√		√			×		×		×
GaWMA	√		√			×		×		×
LaNMA	√		√			×		×		×
LaDMA	√		√			×		×		×
LeKMA	√		√			×		×		×
TOTAL	9	0	9	0	1	8	1	8	0	9

FIGURES:

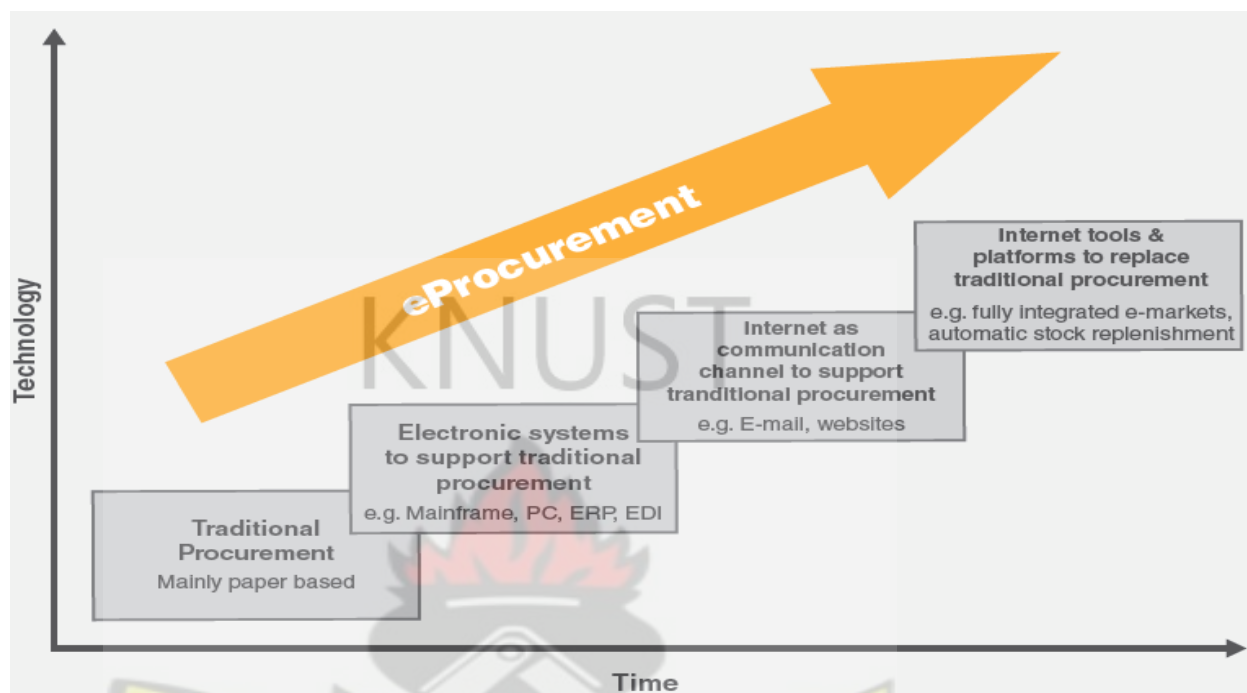


Figure 2.1. Evolution of E-Procurement [Source: PayStream Advisors (2013)]



Source: Adapted from "The 2009 EU eGovernment Procurement Benchmark Report"

Figure 2.2: The E-Public Procurement Process

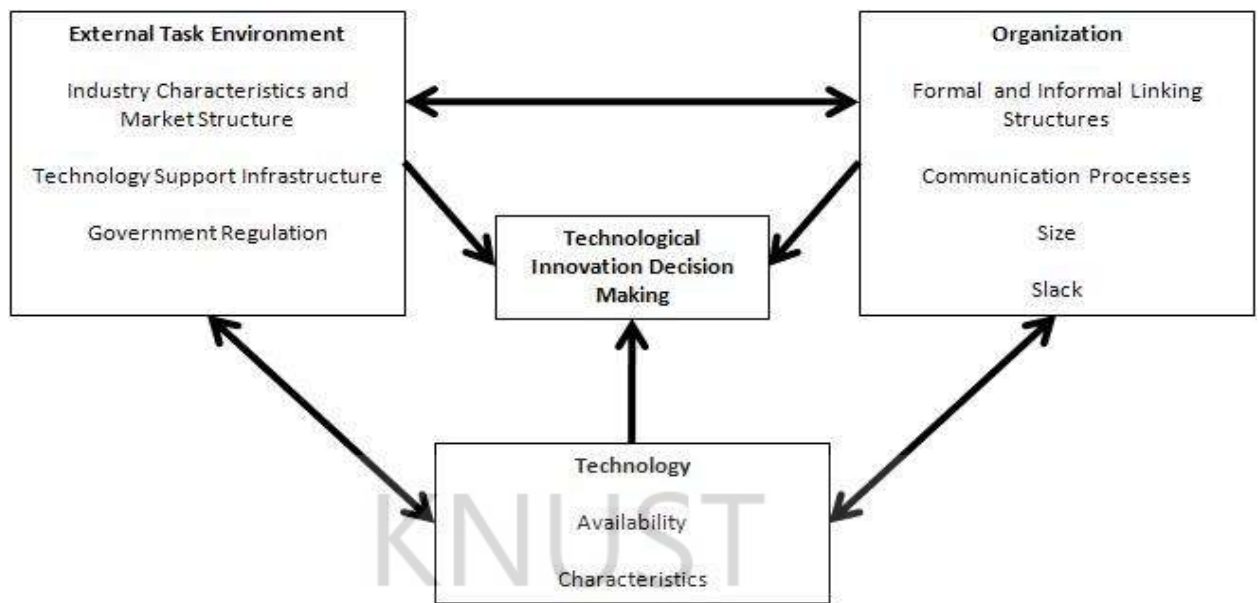


Figure 2.3 The TOE Framework

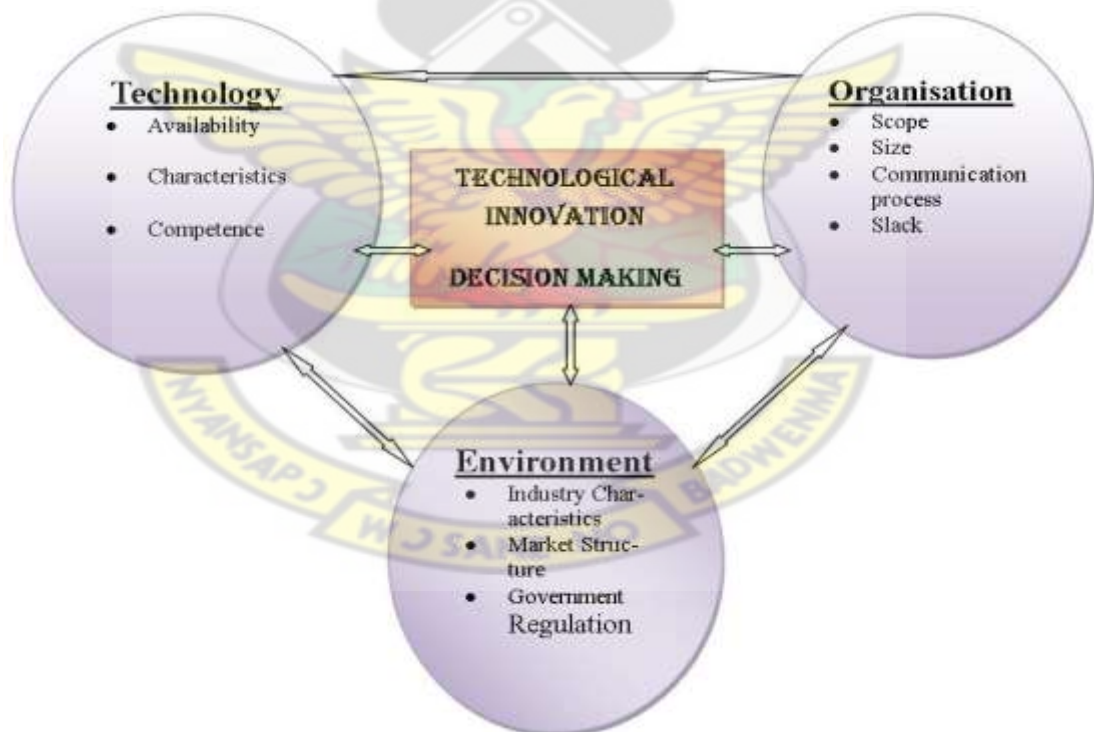


Fig 3.1.The TOE Frame Work adapted from Tornatzky and Fleisher Framework.

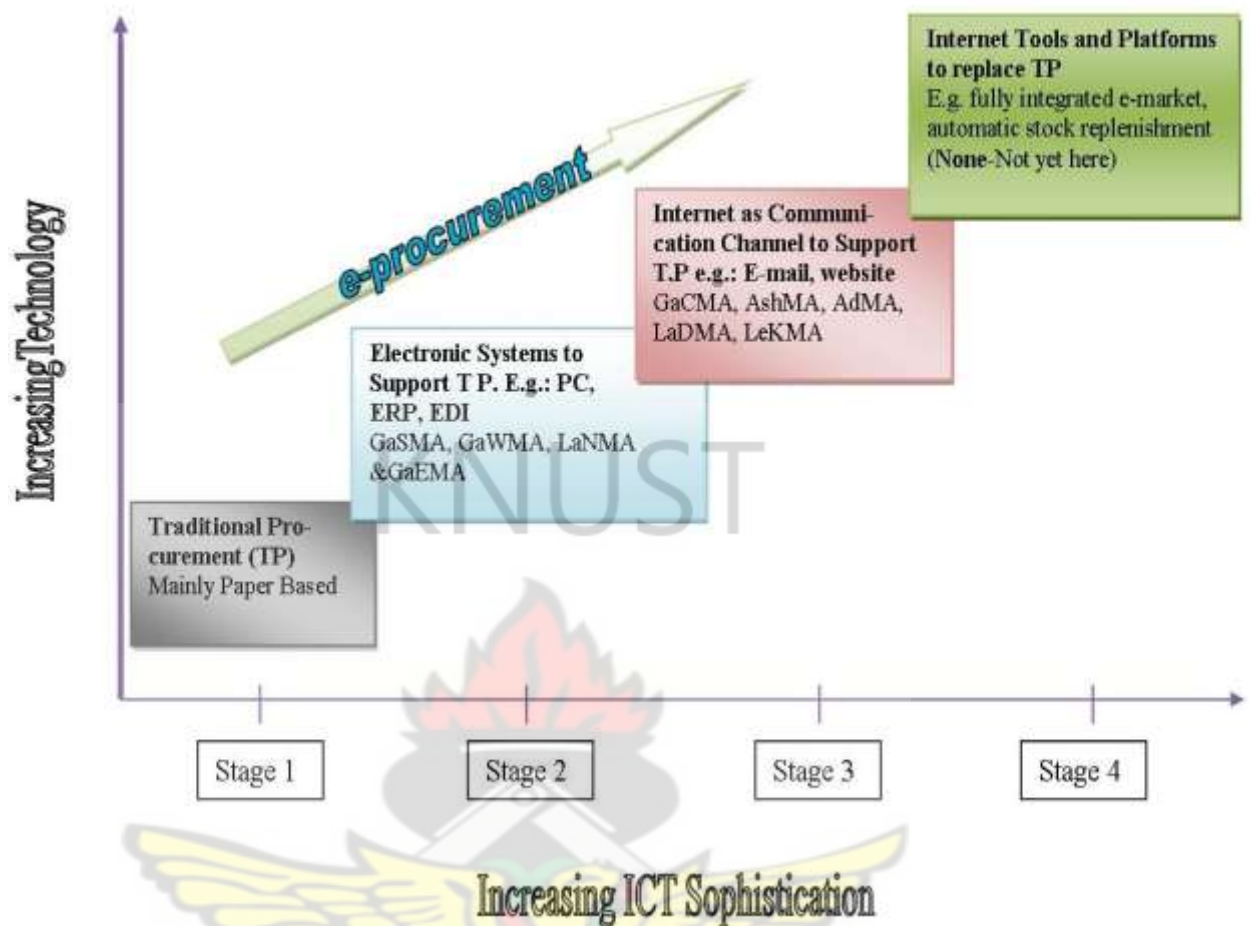


Fig. 4.2 State of Electronic Procurement in the Public Sector

SEMI-STRUCTURED INTERVIEW QUESTIONS

GENERAL INFORMATION

1. What is your education level?
2. How many years have been working for the Assembly?
3. Please what is your designation in the Assembly?
4. What is the estimate of the Assembly's procurement spending?

THE STATE OF E-PROCUREMENT IN THE PUBLIC SECTOR

5. Are you aware of use of E-Procurement in Ghana?
6. Does the Assembly have internet connectivity?
7. Have you participated in any E-Procurement activities before?
8. Are all your procurement processes paper-based?
9. Do you combine paper based process with electronic based procurement and at what stage of the procurement process?
10. Does the Assembly publish procurement notices/requisitions/ tenders on-line?
11. Have you received tenders on-line before?

THE INFLUENCING FACTORS: TECHNOLOGY, ORGANISATION AND ENVIRONMENT:

TECHNOLOGICAL FACTORS

12. Do you find Technology as a factor that can influence the Municipal Assembly capacity to adopt e- procurement? How?
13. Can the relative advantage, compatibility and simplicity of e-procurement influence your adoption of the technology? Why?
14. E-procurement provides superior characteristics (reduced lead time up to 50%, anti-corruption etc) to the manual paper based process. Could this influence you to adopt it? Why?
15. Technology competence: (*IT infrastructure, IT Expertise/Skills & Business to Business (B2B) know-how.*)
 - i. Does the Assembly have computers and servers?
 - ii. Does the Assembly have internet and intranet services?
 - iii. Does the Assembly have IT department?
 - iv. What percentage of employees can send email to internal and external addresses?
 - v. What percentage of employees can browse the internet?
 - vi. Do you find it difficult or easy to access the internet?
 - vii. Do you know how to use any of the Microsoft Suite Products (Excel, Outlook, Word etc)?

ORGANISATIONAL FACTORS

16. Do you find the context of Organisation as a factor that can influence the Municipal Assembly capacity to adopt e- procurement? How?
17. The Municipal Assembly is very big and has very wide range of operations. Would this facilitate the adoption of e-procurement for the size and scope of works of the Assembly?
18. Do you anticipate Top management support and commitment for adoption of E-Procurement in the Assembly?
19. Does the Assembly have a data base (e.g. suppliers, contractors and consultants and a record of prices) that provides up-to-date information?
20. Having been with the Assembly for some time now, do you think the Assembly is ready to migrate its manual paper based procurement to electronic system?
21. How does the Assembly share information within and outside itself?

ENVIRONMENTAL FACTORS

22. Do you find the context of the Environment as a factor that affects e- procurement adoption at the Municipal Assembly? How?
23. Do you think that a well defined legal framework that clearly fosters the use of electronic procurement can influence the Assembly to adopt e-procurement? How?
24. Do your business partners (contractors, suppliers, consultants) correspond with you via the internet?
25. Do you find your business partners (contractors, suppliers, consultants) firms more IT based and so you are forced to adapt to their IT ways of doing things so as to be a par?
26. The private sector is seen to utilise various forms of technology innovation over the years. Does the Assembly feel pressured to mimic their IT practices for fear of being branded as less innovative or less responsive?
27. Apart from Technology, Organisation and Environmental factors, what other factors do you think can influence the capacity of Municipal Assemblies to adopt e-procurement?

PROFILE OF THE NINE MUNICIPAL ASSEMBLIES

(Full document available at: www.mofep.gov.gh or www.ghanadistricts.com)

INTRODUCTION

This chapter presents brief profiles of various Municipal Assemblies in the Greater Accra Region being used for the Multiple Case-Study (Ga West, Ga South, Ga East, Ga Central, Ashaiman, Adentan, Ledzokuku-Krowor, La Dade-Kotopon and La Nkwantanang-Madina Municipal Assemblies) and the methodology used in the collection of research data.

3.1 PROFILE OF THE MUNICIPAL ASSEMBLIES

3.1.1 GA WEST MUNICIPAL ASSEMBLY

Background

The Ga West Municipal Assembly was established by L.1 1858 on November 2007 and it is the gateway to Accra on the Kumasi Accra route.

The Municipality lies within latitude 5°48' North, 5°39' North and longitude 0°12' West and 0°22' West. It shares common boundaries with Ga East and Accra Metropolitan Assembly to the East, Akuapem South to the North and Ga South to the south and West. It occupies a land area of approximately 305.4 sq km with about 193 communities.

The projected population for Ga West Municipality for the year 2010 is 217,091 with a growth rate of 3.4%. Female population represents 49.9% of the total population whilst male population is 50.1%.

The Municipality consists of 25 electoral areas and is made up of 25 elected members, 11 appointed members, 1 Member of Parliament and the Municipal Chief Executive. There are also 25 Unit Committees in the Municipality.

3.1.2 GA CENTRAL MUNICIPAL ASSEMBLY

Background

The Ga Central Assembly was carved from the then Ga South Municipal Assembly and inaugurated on 28th June 2012. The Assembly was established by Legislative Instrument 2135 (2012) with the capital at Sowutuom.

The Ga Central Municipal Assembly lies within latitudes 5° 48' North and within Longitudes 0° 8' East and 0° 3' west. It has total land coverage of approximately 103.44 Sq km. It shares boundaries with Accra Metropolitan Assembly to the South, Ga West to the East and North, and Ga South Assembly to the west.

According to the extract from the 2010 National Population and Housing Census, the population of Ga Central Assembly is estimated at 102,586 with inter-censual growth rate of 3.4%. The projected population for the year 2013 is estimated at 154,885.

The Assembly currently has nine (9) Electoral areas. It has a membership of (16) sixteen comprising nine (9) Elected Assembly Members, five (5) Government Appointees, a Municipal Chief Executive and one (1) Member of Parliament.

3.1.3 LEDZOKUKU–KROWOR MUNICIPAL ASSEMBLY

Background

The Ledzokuku–Krowor Municipal Assembly was one of the newly created districts established on 1st November, 2007 and inaugurated on 29th February, 2008 under the Legislative Instrument (LI 1865).

The total land area of LEKMA is estimated at 50 square kilometers. The Southern boundary of the Municipality is the Gulf of Guinea from the Kpeshie Lagoon to the Mukwe Lagoon near Regional Maritime Academy.

The population of the Municipality is about 261,571 according to the 2010 population Census, 51% of the populations are females and the rest 49% males giving a sex ratio of 1:1.04 males to females.

3.1.4 GA SOUTH MUNICIPALITY

Background

The Ga South (Weija) Municipal Assembly was carved from the Ga West District Assembly in November 2007. The Assembly was established by Legislative Instrument 1867 in 2007 with the capital at Mallam. However in July 2012, L.I 2134 established the Ga South Municipal Assembly with its capital at Weija.

The Ga South Municipal Assembly lies within latitude 5°48'North and within Longitudes 0° 8' East and 0° 3' West. It shares boundaries with Accra Metropolitan Assembly to the South-East, Ga Central and Ga West to the East, Akwapim South to the North-East, West Akim Assembly to the North, Awutu Senya East Municipal Assembly to the West, Gomoa Assembly to the South- West and the Gulf of Guinea to the South.

After the creation of Ga Central Assembly, the total number of communities left in Ga South Municipal Assembly is 539. The estimated population of the Assembly according to the 2010 census is 359,523.

The Assembly currently has 26 electoral areas. It has a membership of 38 comprising 26 elected members and 12 government appointees.

3.1.5 ASHAIMAN MUNICIPAL ASSEMBLY

Background

The Ashaiman Municipal Assembly (ASHMA) was established by LI 1889 on 30th November, 2007 as part of deepening of the decentralization process to enhance effective governance of the Ashaiman Municipality.

ASHMA is made up of twenty-seven (27) Assembly members constituted by seventeen (17) elected and eight (8) appointed by the President of the Republic of Ghana, one (1) Member of Parliament and one (1) Municipal Chief Executive. There are seven (7) zonal councils and twenty (20) unit committees.

3.1.6 GA EAST MUNICIPAL ASSEMBLY

Background

The municipal Assembly was established in the year 2004 by an act of parliament Legislative Instrument (LI) 1589. It was elevated to a municipality in 2008 by LI 1864. It has deliberative, legislative and executive powers. The Assembly was part of the former Ga District Assembly.

The Ga East Municipal Assembly is located at the northern part of Greater Accra Region. It is one of the sixteen (16) Districts in the Greater Accra Region and covers a Land Area of about 85sq km. The capital of the Municipal Assembly is Abokobi.

The 2010 National Population and Housing Census put the Municipal Assembly's population at 259,668 with an intercensal growth rate of about 3.8%. The male and female training is pegged at 127,258 and 132,210 respectively.

3.1.7 LA-NKWANTANANG MADINA MUNICIPAL ASSEMBLY

Background

La-Nkwantanang Madina Municipal Assembly was established by Legislative Instrument (L.I.) 2030 in June 2012. It was carved out of the Ga East Municipal Assembly.

The La-Nkwantanang Madina Municipal Assembly (LANMMA) is located at the Northern part of Greater Accra Region. It covers a Land Area of 166 sq. km. It is boarded on the west by the Ga East Municipal Assembly (GEMA), on the east by the

Adentan Municipal Assembly (AdMA), the south by Accra Metropolitan Assembly (AMA) and the north by the Akwapim South District Assembly.

The 2000 National Population and Housing Census put the Municipality's population at 161,873 with an annual growth rate of 4.2%. The projected population for the year 2010 is therefore 244,226.

3.1.8 LA DADE-KOTOPON MUNICIPAL ASSEMBLY

Background

The La Dade-Kotopon Municipal Assembly was carved out from Accra Metropolitan Assembly in June 2012 with its capital located at La. Like all other District Assemblies, the La Dade-Kotopon Municipal Assembly was established by Local Government Act, 1993 (Act 462) with Legislative Instrument 2133 in line with government's objective of deepening decentralization and grassroots development by bringing larger Metropolitan, Municipals and District Assemblies to manageable sizes.

La Dade-Kotopon Municipal Assembly covers an area of 360sq km and located on Longitude 05o 35'N and on Latitude 00o 06W. The municipality is bounded on both North and West by Accra Metropolitan Assembly, on the East by Ledzokuku Krowor Municipal Assembly and on the South by the Gulf of Guinea.

According to the 2010 Population and Housing Census of Ghana, the population of the municipality is about 306,424 with total number of houses being 10, 372 and 30,925 households. Given an annual growth rate of 2.6% per annum, the figure currently is estimated at 465,620 using geometric growth method.

3.1.9 THE ADENTAN MUNICIPAL ASSEMBLY

Background

The Adentan Municipal Assembly was created out of the Tema Municipal Assembly (TMA) in February 2008. Since the Assembly was initially part of the TMA, the TMA Medium Term Development Plan (2006 – 2009) was used as a basis for its developmental agenda. However, when the Assembly was officially created, much was not achieved. Serious work began in 2009. At a consultative workshop with various Departmental Heads, it was agreed that, the performance review of the Adentan Municipal Assembly be done with much concentration for that of 2009. An Act of Parliament (Act 462, LI1888) on the 29th February, 2008, created

Adentan Municipal Assembly.

The land area of the Municipality is about 85 sq km (33 sq miles).

The Adentan Municipal Area has a population of seventy-eight thousand, two hundred and fifteen (78,215). Out of this, thirty-nine thousand, three hundred and sixty-six (39,366) are males and thirty-eight thousand, eight hundred and forty nine (38,849) are females based on the 2010 Housing and Population Census. It has a growth rate of 2.6%. The capital of the Municipal Assembly is Adentan which is the Central Business District (CBD).

