Addis Ababa University

Addis Ababa Institute of Technology

School of Mechanical and Industrial Engineering

Supplier Relationship Management for Long Term Partnership

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Declaration

I hereby declare that the work which is presented in this thesis entitled *"Supplier Relationship Management for Long term partnership"* under the supervision of Associate Professor Birhanu Beshah (Dr) and Mr. Goitom Birhane (PhD Candidate). It is original work of my own, has not been presented for a degree of any other university and all the resource of materials used for this thesis have been duly acknowledged.

_____ _____

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This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.

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Mr. Goitom Birhane (PhD Candidate) Date

Co: Advisor

Abstract

Currently, in most public and private organizations procuring goods and services are executed by bid/tender based system. The system is giving the award to low price competitive bidders. This bid/tender based procuring system is now days practiced in different public and private organizations in Ethiopia. Even if the goal of competitive bidding is to procure goods and services in the promotion of efficiency, i.e. the selection of the supplier with the lowest price or, more generally, the achievement of the best "value for money, it has deficiencies to complete works on time, with specified cost or less and on the required quality on purchased goods and services. This bid procurement system has a negative impact to execute the public and private organizations' goal efficiently and effectively.

It is believed that qualitative system dynamics model is important for analysis of the problems which occur in competitive bid system. It is used Vensim software to construct the causal lop diagram. This study has investigated the problems of bid/tender based procurement system which are; the difficulty to get the bid document, time consuming to select the supplier and to give the award, bidder conspiring, lack of innovation and long term vision, law quality goods and services purchased, vulnerable to corruption, etc. and, then developed a model for long term supplier relationship management system by qualitative system dynamics model.

Finally; the study advocates that to increase the quality of procured goods and services, to minimize the delivery time, and to avoid the unnecessary costs, the public and private organizations should procure goods and services through long term supplier relationship.

Keywords: procurement, supplier relationship management, long term supplier relationship management, system dynamics Model.

Acknowledgment

It is often said that challenges make life interesting and overcoming them makes life meaningful. With this perspective in mind, I started my journey for the Master's Degree in Industrial Engineering. Given the time pressure and other professional limitations, I must say that it has been a very challenging journey but also very rewarding. I have greatly enjoyed studying in this program and have learnt a lot. I would like to express my gratitude to my instructor and advisor Dr. Birhanu Beshah (Associate Professor at Addis Ababa University, School of Mechanical and Industrial Engineering) for giving the research title, his guidance and valuable inputs. Furthermore, I would like to thank Mr. Goitom Birhane (PhD candidate at Addis Ababa University, School of Mechanical and Industrial Engineering) for his uninterrupted support and assistance throughout the process. To all of you, I salute your energy and passion in everything you do.

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Tewolde Mulu

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Acronyms

CSCMP	Council of Supply Chain Management Professional
CIPS	Chartered Institute of Procurement and Supply
CRM	Customer Relationship Management
GDP	Gross Domestic Product
GNP	Gross National Product
KPI	Key Performance Indicator
PWC	Price Water House Coopers
SCM	Supply Chain Management
SRM	Supply Relationship Management
UNDP	United Nation Development Program
UN	United Nation
WTO	World Trade Organization
OECD	Organizations For Economic Cooperation and Development
SDM	System Dynamics Model
CLD	Causal Loop Diagram
SME	Small and Medium Enterprise
PPD	Public Procurement and Disposal

Chapter One

Introduction

1.1 Background of the Study

Management is on the verge of a major breakthrough in understanding how industrial company and public organization success depends on the interactions between the flows of information, materials, money, manpower, and capital equipment (Forrester 1958).

Supply chain management is complicated, because it takes 80% of their turnover comprising bought in goods and services (CIPS, 2013). Procurement is one of the components of supply chain which has the major impact for success or failure of public and private organizations. Public institutions as well as state-owned enterprises need to procure goods, services and works to carry out their responsibilities and duties. The total volume of public procurement, which is the government activity of purchasing goods, services and works accounted which in all countries in the world. The financial activities of government procurement are believed to be in the order of 10% – 30 % of GNP (Callender G and Mathews D, 2000). On the other hand; purchases of outside goods and services has always played an important role in the corporate cost structure reaching as high as 80% or more of the total cost of goods sold in some industries (Matthew G. Anderson and Paul B.Katz, 1998).

Public procurement has become a very complex function of government that covers a great proportion of public expenditures (which reach 70% of total government expenditure, according to numerous World Bank reports) and procurement expenditures (or "spends," a term found in numerous reports and publications). It is estimated that 15% of the world's Gross Domestic Product (GDP) is spent through public procurement (Development Assistance Committee, 2005). It is further estimated that public procurement accounts for 9%–13% of the GDP of the economies of developing countries. In Angola, public procurement accounts for 58%, in Malawi it accounts for 40%, in Uganda it accounts for 70% of public spending (Thai, 2001). Expenditure on public procurement in Ethiopia takes the lion share from the annual government budget.

It took 64% of the annual budget or 15% of the GDP (PPD Report, 2014). Generally; procurement is the main driver in both public and private organizations.

Currently, most of the procurement process in public and private organizations is executed by bid/tender based system. Even if one of the main objectives of procurement is to reduce cost through competition, promoting transparency, safeguarding public and private funds, as well as reducing and eliminating corruption, the bid/tender system has many drawbacks to fulfill the needs of organizations.

The public and private organizations have common value for money but they are apart in procuring goods and services by long term supplier relationship which is important for procuring quality goods and services, less delivery time and minimum cost without ignoring transparency and accountability.

But in the present day, every business needs to establish strong, mutually beneficial relationships with strategically chosen partners. The longer that relationship lasts, the better for all parties. The advantages include improved performance, greater cost efficiency and helping businesses to develop. The ultimate goal of public procurement and business firms purchasing system is to spend the money in an efficient and proper manner to achieve best value for money.

1.2 Statement of the Problem

The principle of competitive bid/tender based procurement system is advised in order to procure goods and services that give value for money, but on the ground, it is not truly practiced. It is expressed as adversarial practice. According to the expressions of (Shapiro, 1986; Amihud, 1976; Marquardt; 1988) quoted by (Joseph P. Cannon Christian Homburg, 1988) adversarial approaches involve bidding rituals that pit multiple suppliers against one another in an effort to drive down prices. The traditional adversarial relationship is characterized by a price focus, and short-term contracts. This adversarial relationship is mainly focused only on cost breakdown.

Due to the lack of long term partnership between the buyer and the supplier most public and private organizations are obliged to use the competitive bidding system to buy the material. It tends to focus on the short term view of the purchase price and profit of a product instead of long-term capabilities of the suppliers. This competitive bidding purchasing or procuring material and service may affect the customer or the buyer organizations. The risk of buying

wrong items, services and products from wrong suppliers reduces the market share, long-term profitability and competitiveness of the company.

Public organizations also procure goods and services for improvement public infrastructure and for the development of the country. But the consequences of poor procurement practices result in loss of the public money by delaying mega and small projects, it affects the health organizations and different government projects in cost, quality and delivery time. This competitive bidding system does not allow the buyer to use small number of supplier base, increase the uncertainty in quality cost and delivery time. This process is obliging the buyer for another re-tendering and re-negotiation. Due to this the total ownership cost increases and it affects the performance of the organizations.

The current supplier-buyer relationship practice in most public and private organizations in Ethiopia is based on transactional basis instead of strategic alliances. The most accustomed and taken as transparent way of procurement is bid to purchase. Though this may enable to secure least price bid, it may not guarantee sustained lower cost, quality, short delivery time, share appropriate feedbacks and improved reliability and poor approach for innovation. Although public procurement is perceived as a major function of government, and although governmental entities, policy makers and public procurement professionals have paid a great deal of attention to procurement improvements or reforms, public procurement has been a neglected area of academic education and research (Thai, K.V, 2001).

Many scholars have written about supplier- buyer relationship in different organizations. (Carolyne Tangus C, Luke A. Oyugi and Charles Rambo, 2015; Maram Roushdy et al, 2015: Rachel Duffy and Andrew Fearne, 2004; Mutie Brian Musanga, 2015). They tried to explain the important effects of supplier relationship management. Especially they have tried to emphasise on business organization like manufacturing sector. But they did not explain how to build long term relationship between supplier and buyer in business and public organization as common agenda.

Due to this, the thesis deals with new way of long term relationship formation for procuring goods and services in public and private organizations. The research is mainly focused on the analysis of problems which are created during procuring goods and services by bid/tender based

system and the formation of long term supplier relationship management in public and private organizations by using qualitative system dynamics model.

1.3 Research Objectives

It is difficult in this dynamic, technology intensive and short product cycle environment to increase the performance of public organizations and competitiveness of private sector on procurement of goods and services by bid/tender based system. The existing tender/bid system procurement method has some problem related to quality, delivery time and cost. So, it needs to look forward for better way of addressing the issue; accordingly, this study has focused to deal with the following general and specific objectives;

1.3.1 General Objective

The general objective of the research is to investigate the gaps in the existing bid/tender based procurement system and develop a model for long term supplier relationship management between buyer and supplier that increases quality, minimize delivery time and optimum cost when procuring goods and services.

1.3.2 Specific Objectives

- To investigate the problems that occur during procuring goods and services based on bid/tender system.
- To determine the variables that are important for long term supplier relationship for increasing the quality, reducing delivery time and cost and thereby increase the performance of organizations.
- To develop a model through qualitative system dynamics that helps to procure goods and services for public as well as private organizations as a better alternative solution.

1.4 Research Questions

- What are the procurement process problems that occur in the bid/tender based system in Ethiopia?

- How does one determine the variables that are important for long term supplier relationship to increase quality, minimize delivery time and cost, increase organizations performance?
- What kind of model is recommended to be developed using system dynamics for long term supplier relationship?

1.5 Output and Significance of the Study

Ineffective procuring goods and services by competitive bid/tender system indicated that there is a need to change into well designed and effective long term supplier relationship management system. This long term supplier relationship management system is more effective for quality, cost and delivery time minimization along with transparency and accountability both in public and private organizations compared to the tender system.

In this research, long term supplier relationship model is developed by system dynamics qualitative model. It also identifies the areas where the problems of bid/tender system in public and private organizations. It is also useful as an additional material for public and private organizations for increasing performance and market competitiveness for giving value for money through building long term partnership.

The output of this study contributes to the literature gap on the problems of bid procurement method. In addition it contributes to build long term supplier relationship that increases the overall organizational performance.

In this study, the problem of bid/tender based procurement system is analyzed by system dynamics of causal loop diagram. The need of paradigm shift from competitive bid/tender system to long term partnership system is highly elaborated. Emphasis is given to the importance and system of implementing the long term supplier relationship in public and private organizations. Therefore, it will help a number of organizations including: research and development organizations, traders, producers, policy makers, extension service providers, governmental and non-governmental organizations to assess their activities and redesign their mode of operations and ultimately influence the design and implementation of policies and strategies. It could also help different actors to identify and analyze new ways of stimulating innovation.

1.6 Scope of the Research

There are different ineffective systems which are causes of performance reduction in public organizations and the loss of competitiveness in private sectors. But, it is difficult to study all ineffective systems and come up with well-designed systems for the improvement in one thesis research. Therefore, the study is only focused on procurement process problems which are observed in the competitive bid/tender based system. The need of paradigm shift from competitive bid system to long term supplier relationship to increase quality, to minimize delivery time and cost by building relationship model is addressed in this study.

1.7 Structure of the Thesis

This this thesis is divided into six chapters as indicated in Figure 1 Below.

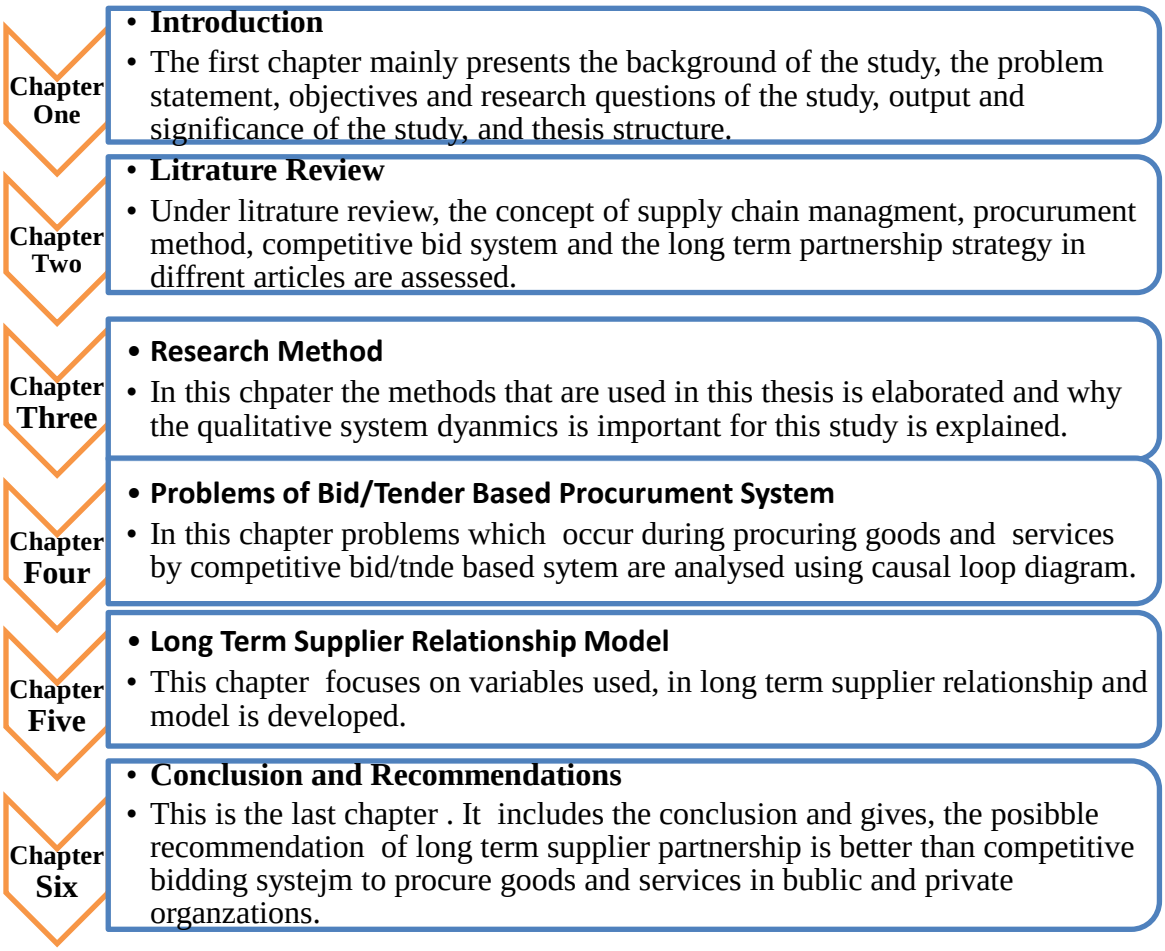


Figure 1: Structure of thesis

Chapter Two

Literature Review

2.1 Supply Chain Management

Many researchers usually focused on supply chain management (SCM) issues in private organizations which are established for profit in the last years. The researches were done on the purpose of adding value, reducing the cost and delivery time in involved in manufacturing sector (Habib, 2011). But Larson denoted that public procurement is very "big business." In public works and government services, billions are spent on goods and services annually, to support the activities of agencies and departments (Larson, 2009). To increase the performance of public sector, well designed supply chain management strategy is important.

(Habib, 2011) states that a profit organization attempts to maximize profits, whereas a non-profit organization considers monetary returns of less importance. Their major objectives may include improved literacy rate, better quality of life, equal opportunities for all genders or races, etc. The revenues gained by a non-profit organization would be used primarily to balance the expenditure of the organization. Due to conflicting objectives, managing a successful profit organization may be drastically different from a non-profit organization. Recently, an increasingly large number of research studies highlight the criticalness of SCM as a means to assuring both public and private organizational success.

From the above literatures it is understandable that supply chain management is essential for both public and private organizations. The supply chain management is a complicated system but it is the main driver of many public and private organizations. Many turnovers are executed by supply chain of procurement process. Even if the goal of public and private organizations is different, they have the same attitude towards value for money in procurement system.

This study is done on the attempt of both the public organizations which almost non-profit and private sector profit organizations procuring in their goods and services. As it is known procurement is a main component of supply chain management. For well understanding the procurement process, first it is better discuss about supply chain management and its related concept.

2.2 The Concept of Supply Chain Management

There is no commonly accepted definition of supply chain management. It means many different things to many different people and numerous, overlapping definitions exist. In this research the definition of supply chain is taken as a common sense in in the bridge of procurement system for both public and private sectors.

Supply chain management (SCM) represents a significant change in the way that organizations view themselves and has witnessed values created through the integration and coordination of supply, demand and relationships in order to satisfy customers in an effective and profitable manner both in the private and public sectors (Intaher Marcus Ambe and Johanna A Badenhorst-Weiss, 2011).

Supply chain management (SCM) is a term used in business literature to refer to the control of materials, information, and finances as they move in a process from supplier to manufacturer to wholesaler to retailer to consumer. The term supply chain is inspired by the product flow that should be delivered to citizens or businesses by passes through several organizations (Intaher Marcus Ambe and Johanna A Badenhorst-Weiss, 2011).

A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers. Supply chains exist in both service and manufacturing organizations, although the complexity of the chain may vary greatly from industry to industry and firm to firm (Ram Ganeshan Terry P. Harrison, 2007). Supply chain management (SCM) is the oversight of materials, information, and finances as they move in a process from supplier to manufacturer to wholesaler to retailer to consumer.

SCM involves coordinating and integrating these flows both within and among firms so that firms within a supply chain can achieve sustainable competitive advantages through developing much closer relationships with all companies, and they can significantly reduce time and costs depending on the appropriate management of the supply chain, while serving customer needs at the same time (Kumar, Vrat, & Shankar, 2004).

According to the Council of Supply Chain Management Professionals (CSCMP, 2007), "Supply chain management encompasses the planning and management of all activities involved in

sourcing and procurement, conversion, and all logistics management activities. It also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers." In a functional sense, this focus on activities and relationships implies logistics, marketing, purchasing/supply, and production/operations are involved in SCM.

From the above all scholars defined SCM on the concept of public and private sectors. The main thing in the above literatures is procurement is one of the components of SCM. So, it is better to discuss about procurement and its method below.

2.3 Procurement

Procurement is the act of obtaining or buying goods and services. According to UNOPS Procurement is one aspect of supply chain management and its key goal is ensuring timely delivery of goods, services or works to the customer at the right time, price, quality, quantity and place in order to deliver best value for money (UNOPS,2014).

All procurement activity must adhere to the following objective; to buy the right goods or services of the right quality in the proper quantity at the right time from the proper source at the right price.

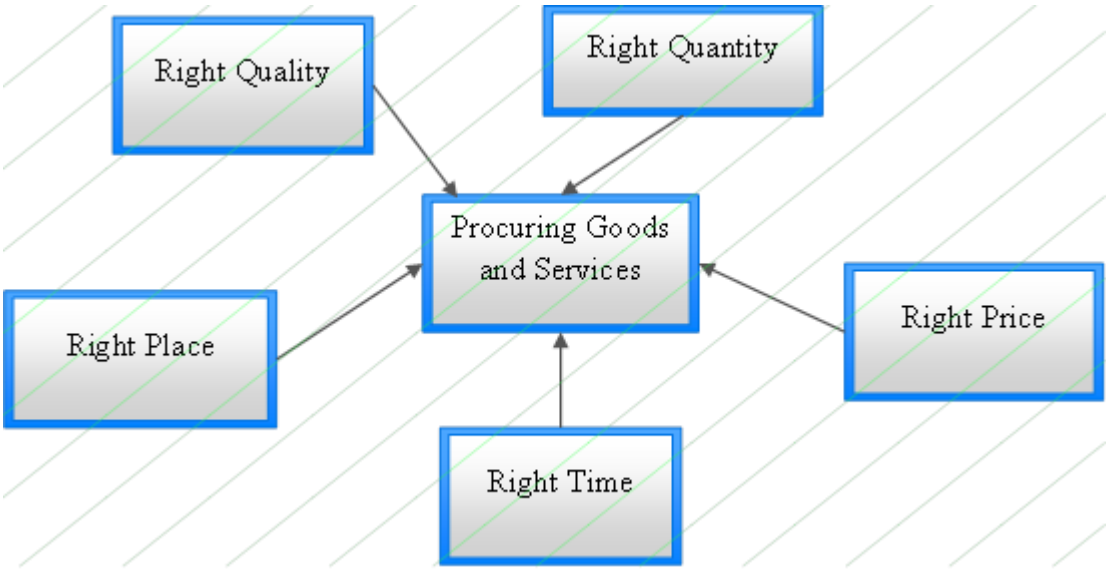


Figure 2: The right procurement system

Procurement management is one of the elements within a supply chain primarily focusing on the sourcing and purchasing of goods and services within the supply value chain" (Boateng, 2008). In line with the views of the Chartered Institute of Purchasing and Supply (CIPS) and Council of Supply Chain Management Professionals (CSCMP), procurement can be described as one of the macro processes within a supply chain. It is the activity to plan, implement and control the sourcing and purchasing of tangible or intangible goods.

Procurement management is a process to purchase or acquire the products, services such as simple office items to sophisticated high-tech equipment from outside the organization to perform the work. Procurement includes the entire gamut of business processes required to purchase goods and services. For any supply chain function, the most significant decision is whether to outsource (or offshore) the function or perform it in-house. The decision is an outcome of two factors (a) the additional supply chain surplus (or system profit) generated through the outsourcing and (b) the level of additional risks from outsourcing (Rahul K Mitra, Amitava Sen and Rajneesh Verma, 2012).

A Procurement Management Process is a formal method by which products (goods or services) are acquired for a project from external suppliers. The process entails managing the ordering, receipt, review and approval of products from suppliers, as well as the overall management of supplier relationships to ensure continued customer service. A Procurement Management Process is used to ensure that all products acquired for the project are in accordance with the requirements set out by the Procurement Plan. This requires that the products are:

- Acquired within the correct timescales
- To the level of quality defined
- Within the budgeted cost identified.

Procurement is defined as the acquisition of goods and/or services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place for the direct benefit or use of governments, corporations, or individuals, generally via a contract. Therefore, in order to research on the procurement strategy in an effective way, it is better to focus on competitive bid system and long term partnership in this study.

Management in any public and private organizations must understand the art of obtaining products and services. The United Nations viewed public procurement as an “overall process of

acquiring goods, civil works and services which includes all functions from the identification of needs, selection and solicitation of sources, preparation and award of contract, and all phases of contract administration through the end of a services' contract or the useful life of an asset" (United Nations Development Programme, UNDP, 2007).

The Federal Democratic Republic of Ethiopia, Public Procurement and Property Administration Agency (2011) defined that «Procurement » mean obtaining goods, works, consultancy or other services through purchasing, hiring or obtaining by any other contractual means. Procurement is the process of acquiring goods or services in order to satisfy the needs of a person, group public and private organizations. In Ethiopia, public and private organizations procurement ranges from small commodity material up to very strategic goods and services.

The role of the procurement function is drastically changing in today's challenging world. In the past, procurement was expected to ensure the timely availability of products and services while also being responsible for accurately processing transactions. It also contributes towards price reduction. The procurement function not only contributes to price reductions, but also playes a crucial role in optimizing total lifecycle costs. The next step towards procurement excellence is to adopt a value-driven orientation with external/supplier collaboration as a key cornerstone (pwC, 2013).

From this it understandable the procurement process needs partnership relationship rather than transactional relationship.

2.4 Procurement Methods and Process

Procurement method is the procedure used in converting requirements or requisitions into purchase orders or contracts. In choosing procurement method, purchaser must consider capacity of local/national market, volume to be purchased and contract value. The procuring department is responsible for acquiring goods and services for public and private organizations. This may involve shopping for goods at competitive prices, handling all legal procedures associated with obtaining a contract, budgeting costs for the goods and studying financial trends to ensure that company money is being spent wisely.

Generally there are six common procurement methods used by different public and private organizations. The actual names of these could vary depending on organization to organization and firm to firm. But they follow the same process to procure goods and services. The six types of procurement are open tendering, restricted tendering, request for proposal, two-stage tendering, request for quotations and single-source procurement (UNOPS, 2014).

The above six methods are practiced in Ethiopia procurement system. According to proclamation article 33: (1) open bidding, (2) request for proposal, (3) two stage bidding, (4) restricted bidding, (5) request for quotation, (6) direct procurement.

But all of which basically rotate on bid/tender based system. The bid/tender based procurement system is common to procure goods and services both in public and private sector. But why this bid system is common to procure goods and services in different organizations?

The common reason to use the competitive bid system in procurement is as follow. The competitive bid/tender based procurement system basically applied on the consideration of: the need for economy and efficiency; the interest in ensuring that all eligible bidders have equal opportunity to compete; to select supplier with least cost; the desire to encourage the development of domestic industries; and the importance of transparency and accountability in the process. Procurement procedures are a specified set of approved procurement activities that must be executed consistently and appropriately to ensure that best value is achieved in the procurement of goods, services and works (UNOPS, 2014). The process includes preparation and processing of a demand as well as the end receipt and approval of payment. It often involves: (1) purchase planning, (2) standards determination, (3) specifications development, (4) supplier research and selection, (5) value analysis, (6) financing, (7) price negotiation, (8) making the purchase, (9) supply contract administration, (10) inventory control and stores, and (11) disposals and other related functions. The process of procurement is often part of an organizations strategy because the ability to purchase certain materials will determine if operations will continue.

In general according to UNOPS procurement process is visualized by ten steps divided into three groups; the groups represent pre-purchasing, purchasing and post-purchasing.

In the diagram below the first three are pre-purchasing process, the next four are purchasing process and the last one are post purchasing process.

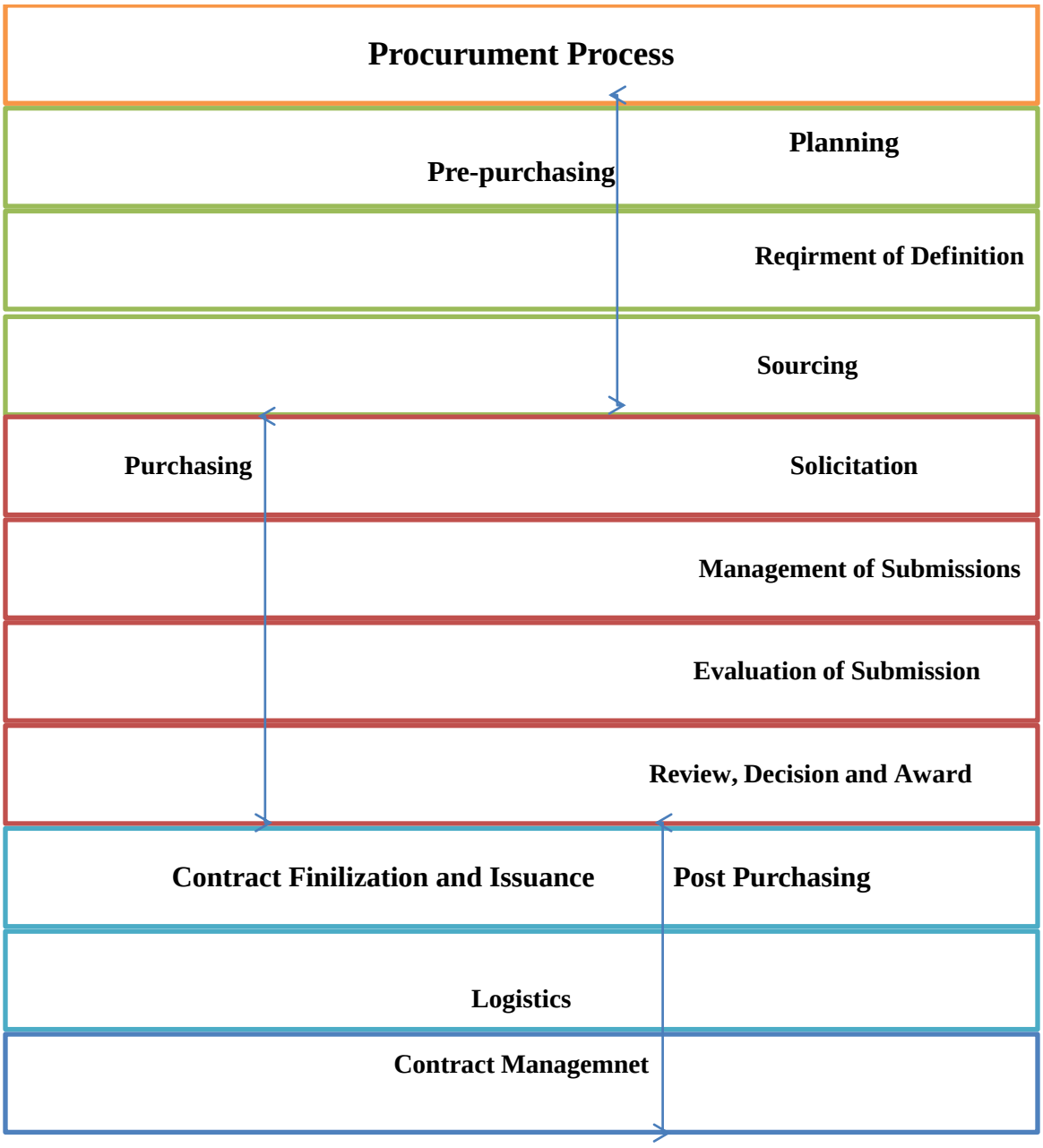


Figure 3: Procurement Process

Generally, the above figure illustrated that the pre-purchasing procurement process includes planning, requirement of definition and sourcing. In this procurement stage, the purchaser should specify some quantitative and parametric specification according to the different department need. During purchasing procurement process, action is taken to procure goods and services. In this stage, operational activities from selection of the supplier through review, decision and

award is given to the selected supplier. The final post purchasing is the logistics and contract management are takes place.

2.4.1 Procurement Methods in Ethiopian

Public procurement in Ethiopia is regulated by Ministry of Finance and Economic Development Public Procurement and Property Administration Agency, Act649/2009. The act set The Public Procurement and Disposal of Public Assets Authority (PPDA) as the regulatory body for public procurement. The PPDA issues for instance regulations, guild lines, forms and standard bidding documents which serve to public entities to follow the correct procedure

The Ethiopian Federal Government procurement and property administration proclamation no 649/2009 article 33 (1) states six methods of procurement for public goods and services, viz. open bidding, request for proposal (RFP), two stage tendering, restricted tendering, request for quotation and direct procurement.

Open Bidding Method

Under open biding method, all interested firms bidders are given adequate notification of contract requirements and all eligible bidders are given an equal opportunity to submit a tender. The Open Bidding Method is the preferred method of procurement of goods, works and services (Consultancy and Non Consultancy), unless the threshold levels or circumstances relating to a specific requirement make it more appropriate for one of the other procurement methods to be used.

Request for Proposals

A Request for Proposals (RFP) shall be used by public bodies for procurement of consultancy services. Consultancy services mean a service of an intellectual and advisory nature provided by consultants using their professional skills to study, design, and organize specific projects, advice clients, conduct training and transfer knowledge. Public bodies shall use the standard documents prepared and issued by the PPA for the Request for Expressions of Interest and the Request for Proposal (RFP).

Two-Stage Bidding

A public body may use Two-Stage Bidding Method for the procurement of large or complex contracts. In the First Stage, a public body shall invite through advertisement unpriced technical proposals on the basis of Bidding Documents which shall state the requirements of the public body in general terms and incorporate the necessary description and questionnaires and outline a conceptual design and/or specific performance requirements. In the Second-Stage, the public body shall revise the Bidding Documents and set out the detailed evaluation criteria for the Second-Stage bids. The public body shall, where applicable, estimate the full cost of the procurement object during its useful lifetime considering:

Restricted Bidding

The restricted bidding procedure is a two-stage procedure where bidders express their interest following publication of a procurement notice, but only those invited by the public body may submit bids after a screening process. Thus the restricted procedure consists of two distinct stages - selection of suitable bidders and evaluation of bids. At the first stage, the only criteria which may be used to select prospective bidders are economic and financial standing or technical knowledge or capability of carrying out a specific assignment.

Request for Quotations

Request for Quotations Method, a public body may undertake procurement by means of a Request for Quotations (RFQ) for the purchase of readily available, standard, off-the-shelf goods and related services and low value simple works or physical services.

Direct Procurement

Open competitive processes, for example, inviting quotes, tenders, or proposals from more than one supplier – will not be applicable for all procurement by a public entity. In some instances, a public entity may procure directly from a supplier. In deciding to take this approach, a public entity will need to consider the value and risk of the purchase as well as the outcome that it intends from the procurement. Direct procurement method, it shall prepare a description of its needs and any special requirements concerning quality, quantity, terms and times of delivery. The public body shall, in the first place, ask for a quotation from a single bidder directly and

afterwards shall be free to negotiate with the selected sole bidder. There is no requirement for Direct Procurement to be advertised, nor is there a need for a bid security.

2.5 The Difference and Common Goal of Public and Private Sector Procurement

The main difference between public and private sector organizations is what constitutes their overall objective. Whereas private companies aim to increase profit margins and grow, public companies typically have goals linked to social and political factors. The function of supply in the private or public sector is to manage the delivery of goods and services through the supply chain in a cost-effective manner (Johnson et al., 2003). Public and private procurement more or less share many objectives, such as achieving value for money and guaranteeing an efficient procurement process. Up until recently, it was assumed that only public procurement included social and environmental objectives but this is not necessarily the case and, with Corporate Social Responsibility, the private sector has become increasingly focused on promoting social and environmental objectives (Arrowsmith, 2010). The real and perceived differences, public and private supply chains are alike in three important ways:

1. They share a common goal: to obtain the best value for the organization. This means getting the most from each dollar at every step in the supply chain. In the public sector spending efficiency equals organizational efficiency; this applies not just to purchasing but to the entire supply chain.
2. Customers (and yes, the public sector does have customers) continue to demand better quality, faster service, and lower cost. If an organization cannot continuously and consistently provide materials "better, faster, and cheaper," then its long-term survival is doubtful. This is as true for public sector supply chains as it is for the private sector, especially in light of the current public backlash against the cost of government. Accordingly, public sector officials are placing a new emphasis on cycle-time compression and speeding up the supply chain, from procurement to delivery. Balancing this demand against the requirements for transparency presents a unique challenge for the public sector.
3. The new reality is that all supply chains are pressured to provide more (materials, services, information, and so forth) in an environment of continually dwindling resources. Staff

reductions, unheard-of in government just a decade ago, are now commonplace and are forcing the public sector to either find new ways to provide materials and services or to eliminate some services entirely (Gary A. Smith, 2011).

2.6 Challenges that Affect Procurement Performance

Achieving efficiency in public procurement is an ambitious task, as procurement faces numerous challenges, especially due to the market structure, the legal framework and the political environment that procurers face (Thai, 2004).

In the face of mounting economic uncertainty, huge expectations are placed on procurement practitioners to source the best business solutions from their supply network partners, and to achieve the innovation, value and services that their customers are looking for (Lau, 2010). But in many negative situations the procurement process affected before it reaches the planned goal. Various studies suggest that an average of 10-25 per cent of a public contract's value may be lost to corruption. Applying this percentage to the total government spending for public contracts, it is clear that hundreds of billions of dollars are lost to corruption in public procurement every year. It is one of the biggest challenges in public procurement. Corruption involves a vertical relationship between one or more bidders and the procurement official. It is first and foremost a principal-agent problem where the agent (the procurement official) enriches himself at the expense of his principal, the government purchaser (or the public more generally). Corruption arises in procurement when the agent of the procurer in charge of the procurement is influenced to design the procurement process or alter the outcome of the process in order to favor a particular firm in exchange for bribes or for other rewards. As public procurement accounts for a large share of national economies, the potential of corruption to damage a national economy is significant (OECD, 2010).

The basic principle of procurement is procuring goods and services in right quality, on the required quantity, at the required time, on specified place with optimum cost. But the procurement process has different risks and challenges. The following are some of the examples of procurement challenges.

Price does not represent value Purchase through competition and regular benchmarking to ensure prices for money remain competitive, goods and services are purchased to get in uneconomic

quantities, excessive stock holdings, suppliers fail to deliver, goods and services are not of appropriate quality, impropriety and fraud and missed opportunities.

2.7 Supplier Relationship Management

According to a definition of [McCue, C. P. and Johnson, B. R. 2010] Supplier Relationship Management (also called Vendor Relationship Management) is a set of principles, processes, and tools that can assist organizations to maximize relationship value with suppliers and minimize risk and management of overhead through the entire supplier relationship life cycle (McCue, C. P. and Johnson, B. R. 2010). Supplier Relationship Management has two aspects, which are:

- Clear commitment between the supplier and the buyer
- The objective of understanding, agreeing, and whenever possible, codifying the interactions between them (CIPS, 2012).

Relationship is coordinated in to two directions. These are supplier relationship and customer relationship. Supplier relationship management is the process that defines how a company interacts with its suppliers. As the name suggests, this is a mirror image of customer relationship management. Just as a company needs to develop relationships with its customers, it needs to foster relationships with its suppliers

Supplier relationships play an important role in procurement and supply chain management. There are three major conceptual paradigms in procurement research (Brammer and Walker, 2011): the stakeholder (Preston and Donaldson, 1999), the power dependence (Cox, 1999), and the resource-based perspectives (Barney, 1991). All of these three conceptual paradigms focus on the organization's relationship with its external actors (Srivastava, 2007).

According to Herrmann and Hodgson (Choy et al. 2002), SRM can be seen as a process by which a company manages preferred suppliers and finds new ones whilst reducing costs, making procurement repeatable and predictable, pooling buyer experience and exploiting partnerships. SRM can be also understood as a process that can both capture and create value in the organization. Instead of seeing SRM as the realm of procurement, business executives should be committed to implement SRM strategy into practice by being responsible for key supplier relationships.

Over the past four decades, purchasing has evolved from a clerical function in the 1960s, through being an operational activity in the 1980s to the strategic nature in the 1990s (Gelderman and Van Weele, 2005; Spekman *et al*, 1994; Kraljic, 1993). While several organizations have transformed their purchasing capabilities into competitive advantage, others are still lagging behind. One of the sectors which are far from supplier relationship is public sector procurement system. Today, proactive firms are expected to control their purchasing operations in an effort to build competitive advantage (Carr and Smeltzer, 1997).

Companies develop their procurement strategies from various perspectives which include price/cost, product/quality, and value added point of view (Kumar *et al.*, 2005; Van Weele, 2002).

As a result of this, managers have realized the need to move from the traditional adversarial relationship to a more strategic partnership with their providers (Morrissey & Pittaway, 2004; Veludo *et al*., 2004). Thus, effective supplier development and supplier relationship management are vital to achieving competitive advantage (Quayle 2002).

To achieve every public and private organizations their own goal, it is necessary build strong supplier buyer relationship. Due to this, it is necessary to study about supplier relationship.

2.8 Partnership Sourcing

Over the last few decades, there has been a significant shift in the way organizations approach buyer-seller relationships. Recent years have seen an increased interest in buyer-supplier partnerships, which tend to be longer term, ongoing relationships involving a mutual exchange of ideas, information, and benefits (Ellram 1995). As market places have become more dynamic and competitive, earlier recommendations of arm's length relationships with suppliers to avoid dependency and keep prices down have been replaced by an emphasis on the benefits that can be gained from close relationship.

Collaborative and long term partnership with few suppliers have become a practice in recent days. There is said to be „growing evidence that to be competitive firms are moving away from the traditional approach of adversarial relationships with a multitude of suppliers to one of forging longer term relationships with a selected few suppliers. Increased supply management

orientation by the buyer i.e. long-term perspective in supplier relationships, supplier involvement in product development, supplier reduction programs and quality focus in supplier selection improves both buyer and supplier performance related to quality, delivery and cost. Firms integrated at both customer and supplier sides tend to improve marketplace, productivity and non-productivity performance. Organizations adopting supply chain management practices like strategic supplier partnerships, customer relationships, information sharing and postponement reach high levels of organizational performance. A long term strategic partnership between an organization and its vendors requires close working relationships and open communication (Li, W., Yue, C., Han, S. & Zhu, M., 2010).

Strategic partnership is a relationship type that has long term benefits (Daves, J., 2014). Longterm strategic partnership allows free-flow of feedback and ideas. Long term strategic relationships require a high level commitment to sustain the relationship. Strategic partnership produce a level of stability that leads to cooperation necessary to achieve desired results by both partners (Fernandopulle, S., 2015).

2.9 System Dynamics

The world certainly needs system dynamics now more than ever. The current business environment is also dynamic and complex. SD is used today for almost any dynamically complex issue. Important application domains in SD are health policy, energy transitions and resources scarcity, environmental and ecological management, safety and security, public order and public policy, social and organizational dynamics, education and innovation, economics and finance, organizational and strategic business management, information science, and operations and supply chain management(John D. Sterman, 2000).. In fact procurement process requires constant analysis and monitoring by someone (or a team) within an organization, it is so dynamic. There is always more to know/more data to analyze/more forecasts to produce all of which is a responsibility of procurement.

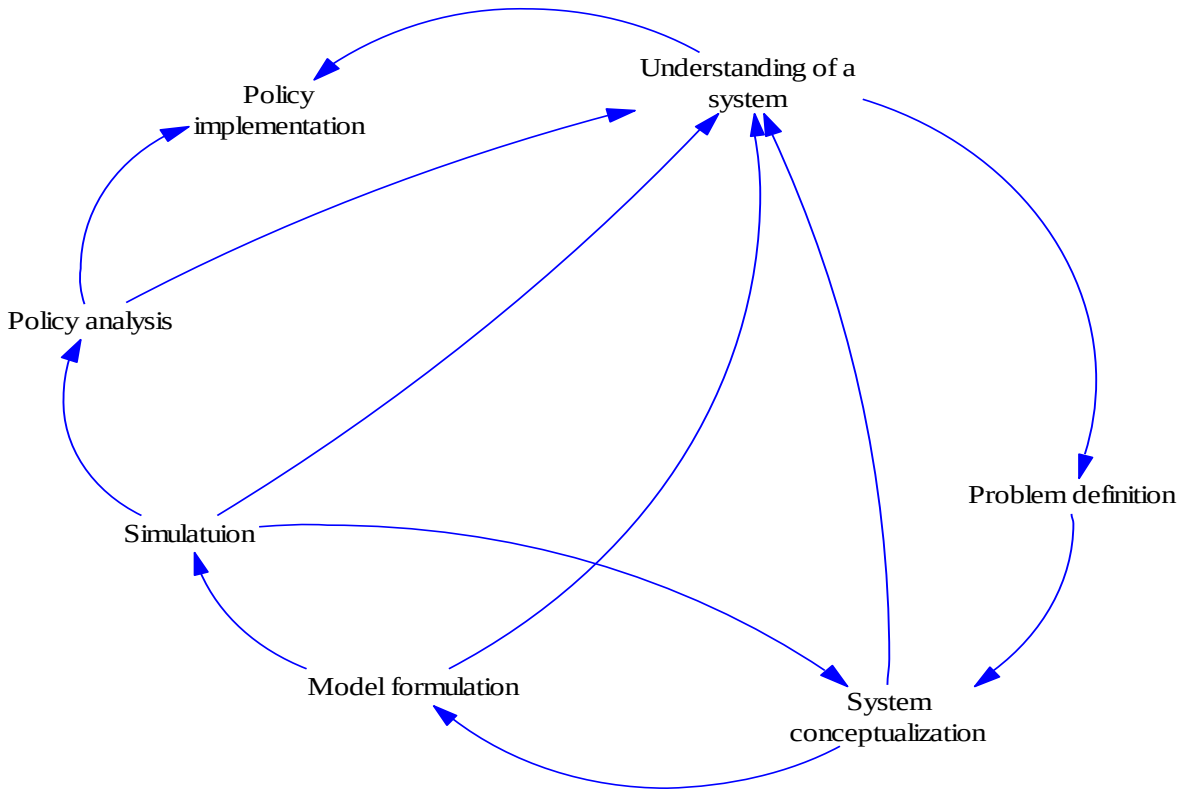
The SD approach was developed at the end of the nineteen-fifties and the beginning of the nineteen-sixties by Jay W. Forrester, at the Sloan School of Management of the Massachusetts Institute of Technology (Forrester 1995; Forrester 1958; Forrester 1961; Lane 2007). He argued

that the traditional methods for solving problems provided insufficient understanding of the strategic processes involved in complex systems.

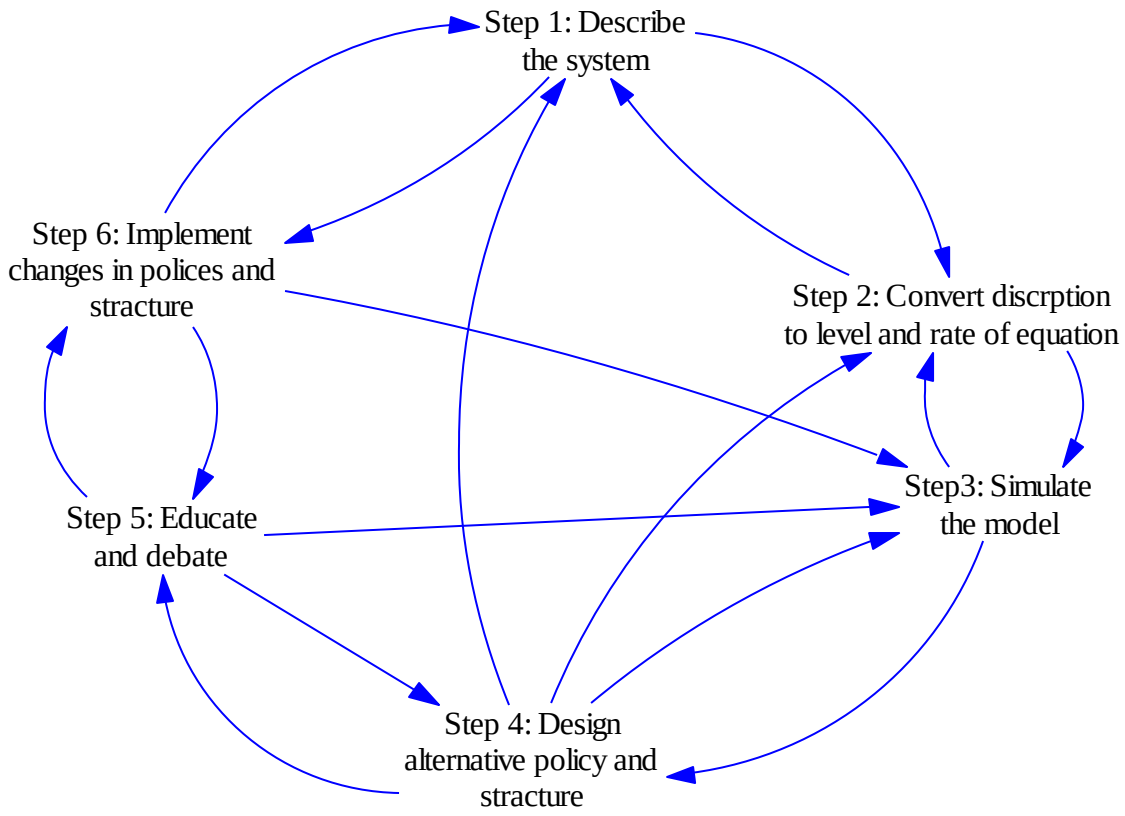
2.10 System Dynamics Process

Different processes for model development have been put forward in the SD literature (e.g. (Randers 1980b; Richardson and Pugh 1981; Forrester 1994; Wolstenholme 1994; Sterman 2000).

The procurement process needs constant analysis because it is dynamic in nature. So, so first understand the procurement system in order to identify the problem. System conceptualization, model formulation, simulation, policy analysis and policy implementation can be feedback to understanding the system in each stage.



(a) Overview of the SD modeling approach according to Richardson and Pugh (1981, p17)



(b) The SD methodology or process according to Forrester (1994, p245

Figure 4: Two Visualizations of the SD process

Although there are differences in naming and the activities covered by each phase, the SD modeling process could be summarized with the following phases:

1. Problem identification: identifying and articulating the issue to be addressed;

2. Model conceptualization: developing a causal theory about the issue;

3. Model formulation: formulating a SD simulation model of the causal theory;

4. Model testing: testing the model to assess whether it is fit for purpose; and

5. Model use, quite often model-based policy analysis: using the model to design and evaluate structural policies to address the issue.

In this study, the System Dynamics (SD) methodology proposed by Forrester (1961), which have been applied by various researchers (including Coyle 1977, Mohapatra et al., 1994; Morecroft, 1999; Jessen, 1990; Reichelt, 1990; and Richardson & Pugh 1981) in different problem situations was used in developing causal loop diagrams, flow diagrams, and the governing equations.

It is suggested by a number of authors (Wolstenholme E. F., 1982), Wolstenholme, E. F. and Coyle, R.G., 1983, Wolstenholme E. F., 1985) and C. Eden, S. Jones and D. Sims 1979) that causal loop diagrams could be used in a free standing mode without computer simulation to assist issue structuring and problem solving. This assertion that causal loop diagrams alone could add value to issue structuring and behavior assessment was based on the fact that even in this mode such diagrams were sufficiently rigorous to provide a significant increase in assistance to thinking compared with other emergent diagrammatic tools. For example, the system problem solving approaches embedded in the methods of soft operational research and, in particular, the rich pictures of the soft systems methodology (P. B. Checkland 1981).

2.11 Causal Loop Diagram

Different types of diagrams are used in SD, both for model conceptualization, for model communication, and even for purely qualitative SD. Mostly Causal Loop Diagrams CLD is common. A causal loop diagram (CLD) is a qualitative method for visualizing how different variables in a system are interrelated and how they influence each other to create system dynamics. System dynamics mostly communicate feedback loop systems by means of CLD. The core building blocks of CLDs are variables and the direct causal relationships between them. These relationships are either positive or negative. The meaning of the terms positive and negative does not correspond to their everyday meaning.

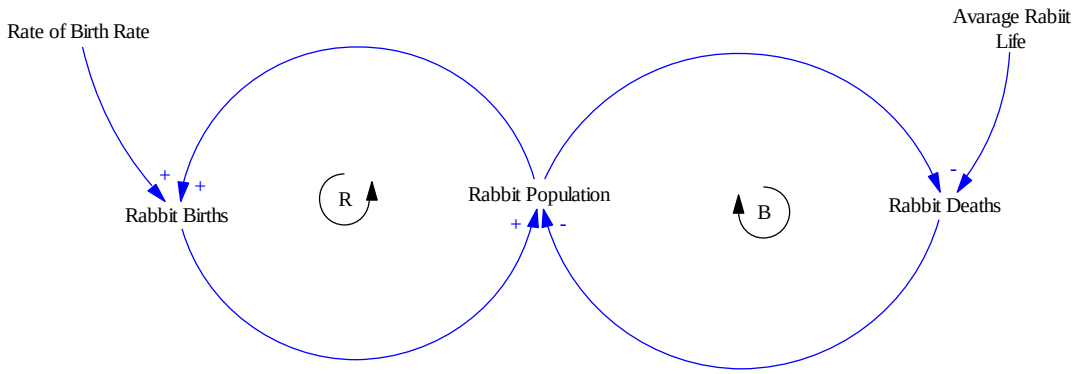


Figure 5: Example of Causal Loop Diagram

A link between two variables A and B is considered positive if (i) an increase in A causes B to rise above what it would have been otherwise and (ii) a decrease in A causes B to fall below what it would have been otherwise. A link between two variables A and B is considered negative if (i) an increase in A causes B to fall below the value would have had otherwise and (ii) a decrease in A causes B to rise above what it would have been otherwise (Sterman 2000).

In this chapter many scholars explained procurement is one of the components of supply chain. Even mainly researcher studied about the supply chain and procurement process in private sector; still it is neglected areas in public sector (Tahi-2001).

Mainly the procurement processes were executed by bid/tender based procurement system. Especially the open bid system is mostly practiced by increasing the number of participants in the tender process. This system has mainly drawbacks. So, purchasing system which is long term relationship is recently innovated. But there is no enough study about the method which is procured goods and services by long term partnership and cooperative method rather than bid system in both public and private organizations. The output of this study contributed the literature gap on the problems of bid procurement method. In addition it is contributed the system to build long term supplier relationship to increase the organizational performance.

Chapter Three

Research Methodology

This chapter explains about the overall research design and method that are used for the accomplishment of this research.

3.1 Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Claire Selltiz and others, 1962). Research design is needed because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money (Kothari 2004). The design is used to get maximal information about the problem and efficient research design respect many research problems.

In this study, the main problems of competitive bid/tender based procurement system are investigated. In this problem assessment, all problems are not investigated. But major problems are identified by causal loop diagram. Finally, supplier relationship model is developed by qualitative system dynamics model.

3.2 Research Method

This research paper conducts a systematic review of literature papers in the field of supply chain management, procurement methods, competitive bidding, strategic sourcing and long term partnership by means of deductive method for content analysis. In this deductive method the researcher attempts to view different literature and article to build long term supplier relationship management framework.

The aim of this study is to investigate the procurement problems which are created by practicing bid/tender based procurement system. The literature review has been conducted to help in identifying established theories; generic organizational perspectives of the supplier relationship and procurement strategies. Different sources of literature, such as digital libraries, books,

journals, conference papers, etc were used. Extensive SCM research papers of academicians and practitioners from renowned international journals, namely PROQUEST, EMERALD, EBSCO, IEEE, ACM, JSTOR, Science Direct, etc. have been reviewed.

The tradition, one might call it the orthodoxy, in system dynamics is that a problem can only be analyzed, and policy guidance given, through the aegis of a fully quantified model. Since the mid-1980s, however, a number of purely qualitative models have been described, and criticized, in the literature (Geoff Coyle, 1999).

Reasons to use qualitative system dynamics model;

It is suggested that all system dynamics practitioners practice qualitative system dynamics model to some extent and that there appears to be a need for such an approach for four genuine reasons (Eric Wolstenholme, 1985)**.**

1. Full quantification of all variables is feasible on only a small number of studies on which analysis is needed and hence the application of the full system dynamics method is restricted to a very small part of the full spectrum of systematic problem.
2. The people who perhaps need an appreciation of systematic methods most are rarely the one who find highly quantitative approaches very compatible with their own philosophy. Hence, persistence with full system dynamics studies is a strategy which does not penetrate the whole market of potential users.
3. Even given its speed and ease of application relative to many other methods, a full system dynamics study is often, in all but the most experienced hands, too slow a method of facilitating change in many types of system. Consequently, it can be argued that application of the full system dynamics method is sometimes also restricted to longer term background problems.
4. Even where time is not too limited, it is often considered that the value added from developing a full computer simulation model might not be worthwhile.

Based on the above reasons, this study has used qualitative research methodology with qualitative system dynamics model.

3.3 Data Collection Method

The task of data collection begins after a research problem has been defined and research design/ plan chalked out (Kothari 2004). The study has been rotated on the general problem of bid/tender based procurement method. Due to this qualitative research method has been used. The qualitative research method is supported by qualitative system dynamics model.

"Not everything that can be counted counts and not everything that counts can be counted" (Albert Einstein). Qualitative research is characterized by its aims, which relate to understanding some aspect of social life, and its methods which (in general) generate words, rather than numbers, as data for analysis. These methods aim to answer questions about the 'what', 'how' or 'why' of a phenomenon rather than 'how many' or 'how much', which are answered by quantitative methods. Based on this the data was collected by reviewing the document and purchasing reports.

The literature sources are divided into three categories: primary, secondary, and tertiary literature sources (Saunders et al., 2003). In reality these categories often overlap. The different categories of literature resources represent the flow of information from the original source. Often as information flows from primary to secondary to tertiary sources it becomes less detailed and authoritative but more easily accessible. In this research extensive literature are used for the formation of supplier relationship.

3.4 Problems Analysis and Model Development

The bid/tender based procurement problems are analyzed by causal loop diagram. Based on the investigated problems, important variables are customized to build long term supplier relationship model for procurement of goods and services. Then after the necessary paradigm shift bid procurement system in supplier partnership relationship is initiated by important variables. The supplier relationship model is developed by using those variables.

3.5 Research Frame Work

To start with, the researcher identified a problem within a subject that found interesting and that have been studying during the course. After identifying the problem and stating the research

problem and the limitations, the researcher began searching for information. Performing literature studies and finding articles is extensive and time-consuming. The researcher found much material and also many theories of great importance and have reviewed a lot of articles, published and unpublished documents, especially Ethiopian procurement and property administration policy document and EFFORT purchasing manual and government proclamation , reports, directions, articles and different research materials. After reviewing different literatures written on the concept of supply chain management, procurement, competitive tender supplier relationship management the problem of competitive bid/tender based procurement system is identified. Finally, supplier relationship model is developed and conclusion and possible recommendations emphasized.

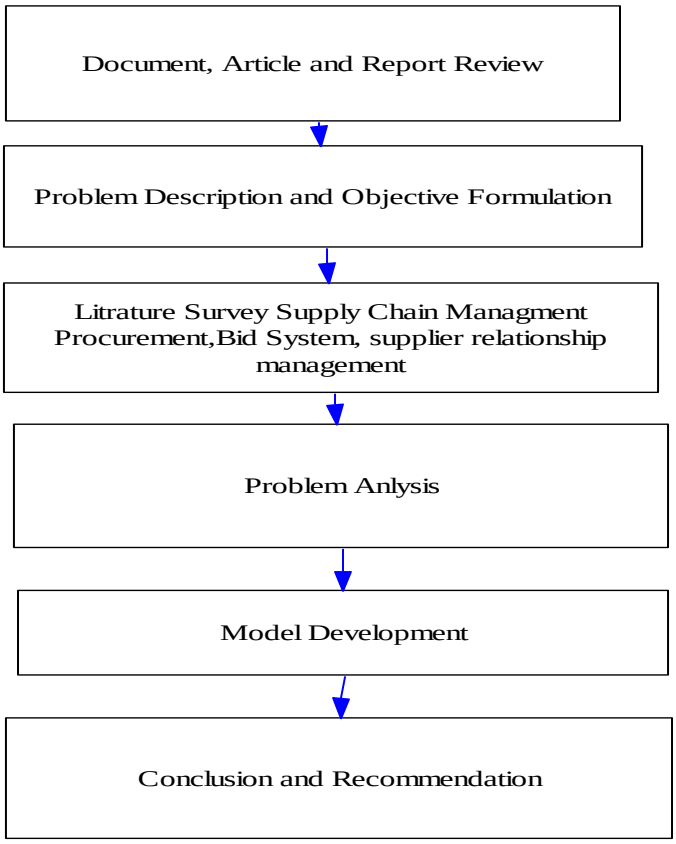


Figure 6: Research Framework

Chapter Four

Problem Analysis

4.1 Problem Analysis in Bid/Tender Based Procurement Process

Procurement is the process of purchasing goods or services to fulfill the goal of public and private organizations. The primary objective of an effective procurement by bid/tender based system is the selection of the supplier with the lowest price or, more generally, the achievement of the best value for many. Both public and private organizations often rely upon a competitive bidding process to achieve better goods and services. But the competitive process is collapsed before the required quality of goods and services were reached at required place.

As previously discussed most public and private organizations call for bids to fulfill their required goods and services. They request competitive price for the goods and services. The bidding organizations compete for the same or better quality with lowest price than the other. But in reality this competitive bidding system is not simple. In this chapter the problem of competitive bid/tender based system is elaborated by simple causal loop system dynamics model.

4.1.1 The Bid Document is Not Well Accessed

Even if, the current competitive and dynamic environment enforced to any information fastly and fully, but still the bid/tender process is not well supported by information technology. Due to this, the bid/tender document is not accessible to every competitor. The procurement rule does not permit the bid/tender document to address in electronics mail to all competitors. Rather it advises the bidder to take the bid document in person. Due to this condition, the potential bidder may not participate in the tendering process. Potential bidders are people or organizations capable of providing the materials or services for the required organizations. Low potential bidder will win the bid/tender and the ability of the bid winner to supply the requisition of goods and services to purchaser is under the question. The bid is advertised in some known mass media or presented in some business and public magazine. The communication media do not address information to all bid/tender competitors. The bid competitors who have a chance to get information about the bid can participate in the bid competition. The procurement organizations

use such kind bid advertising mechanism to increase the number of competitors. But in reality, this mechanism is ineffective to distribute bid information to all bidder/stenderers. Generally, this problem comes due to the application of low technology, e.i, the lack of information technology, in the bid/tender process. This problem is illustrated below by causal loop system dynamics model. In the causal loop diagram B= Represents for Balanced Loop, R=Represents Reinforced Loop.

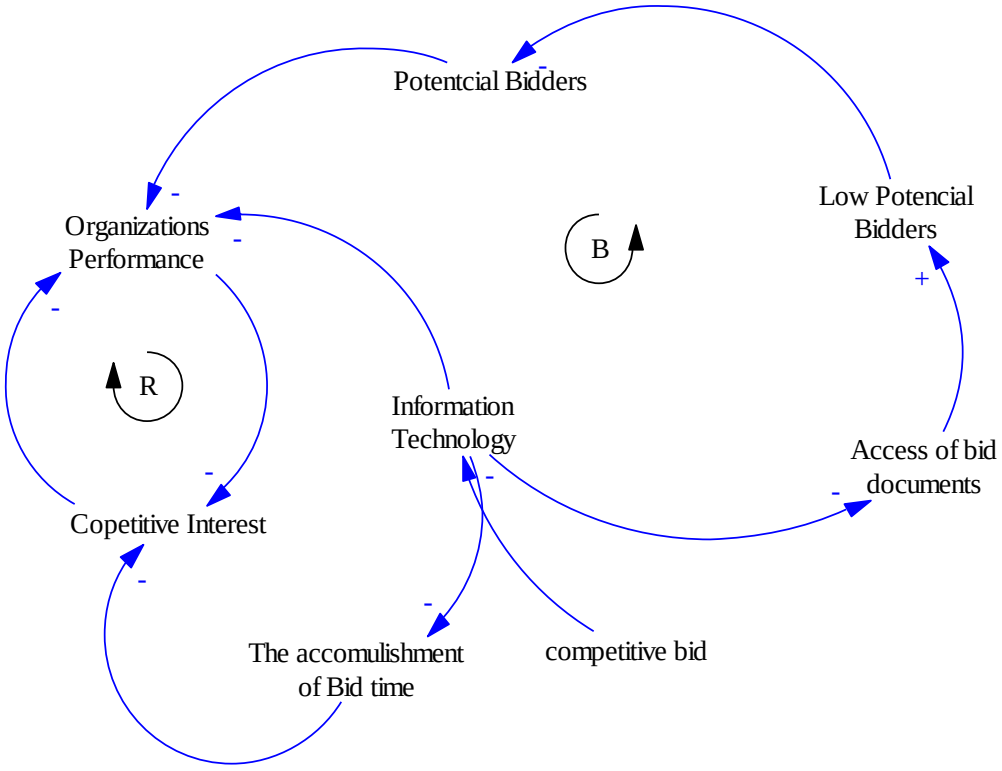


Figure 7: The Difficulty of Accessing Bid Document by Causal loop Diagram

The above figure showed that, the application of technology (electronics email) is not permitted in competitive bid system. This result the probabilities of potential bidder to participate in bidding process is low, rather low potential bidder will win the tender. This result, the purchaser will receive low quality goods and services. In addition, it takes long delivery time and high cost.

This increase the total cost of the purchaser organizations and decrease the performance of the organization.

4.1.2 Supply of Lower Quality Goods and Services

The quality of the purchased goods and services in public and private organizations which are procured by bid/tender based system is deteriorating due to different reasons. In reality the competitive bid winner take the contract to supply goods and services according to the required specification and quality. But after the award is given, the bid winner would be given to subcontract to other suppliers. The subcontractors may not have strong potential as the first bid winner and supply low quality of goods and services to procurement organizations. In another case, the supplier is running to accomplish his personal and organizational interest. Once the award is given to the bid winner, the winner is uncertain to get another chance, another agreement to supply goods and services by participating in another bid/tender. As much as possible, the supplier plans to get short term profit rather than to work with purchaser for long period of time. Therefore, it uses cheaper materials and labor in order to supply poor quality goods and services. One of the complexities of procurement of low quality goods and services, the problem does not detected immediately. It shows the sign of the problem after the work is complete and the expiration of cost and time. This increases the cost for the procuring organization in terms of warranty and maintenance cost. Generally the supplied poor quality of goods and services increases the total cost of quality in terms of prevention and appraisal cost. Sometimes this total cost of quality may be much more than the procurement cost.

Uncertainty in procurement of goods and works in public and private organizations leads to increasing the cost of quality. Once the competitive bid winner got the award they would have to use any opportunity to get a short term profit. After the award is given to the bid winner, the winner gives the agreed contract to small contractors. The small contractors supply low quality and cheap materials to the purchaser. This results in the increase of the total cost of quality by increasing the procurement cost. This cost include the maintenance and appraisal cost.

In the other case the capitals of small contractors increases and have a chance to win other competitive bid/tender. In consequences, the chance will increase subcontractors to give the

purchasing goods and services to another small contractor. The quality of procured goods and services decreases step by step.

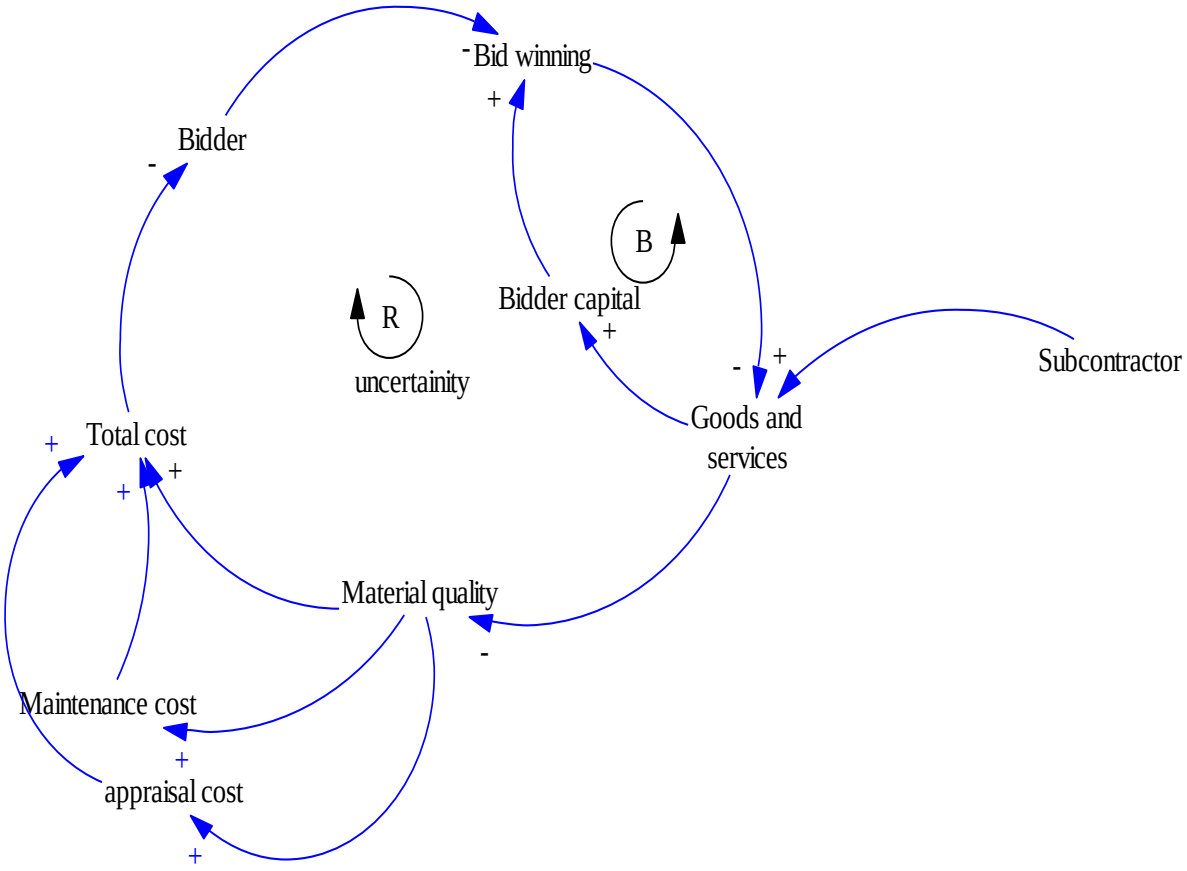


Figure 8: Quality Problem by Causal Loop Diagram

4.1.3 Conspiring

One of the problems of competitive bid/ tender based procuring goods and services is a chance to expose to collusive tendering. The bidders secretly conspire to raise the price or lower the quality of goods and services for organizations who wish to order goods and services by competitive bidding process. Mostly the public and private organizations are procured goods and services in competitive tendering system in lowest price. Due to that the organizations are worked to achieve this point. But suppliers are conspiring to raise the price and the organizations are obliged to pay too much money to the bid winner. Sometimes tenderers submit unsuccessful bid and withdraw from the competitions. The bid winner share the profit to the rig tenderers and it is

antitrust. In this bid rigging the supplier will get short term profit but the organizations will loss not only money but also times and services.

One of the negative impact of competitive bidding system is some competitors conspire and negatively agree on the side of others tenders. Conspire group submitted the bid document either too much increase or too much lower the bid cost. During this situations, the probability of purchaser to pay high amount of many or the bidder to supply low quality goods and works are more. Not only this, other bid competitors are withdraw from the bid competitions and duet to lack of trust they don't participate in any others tender process.

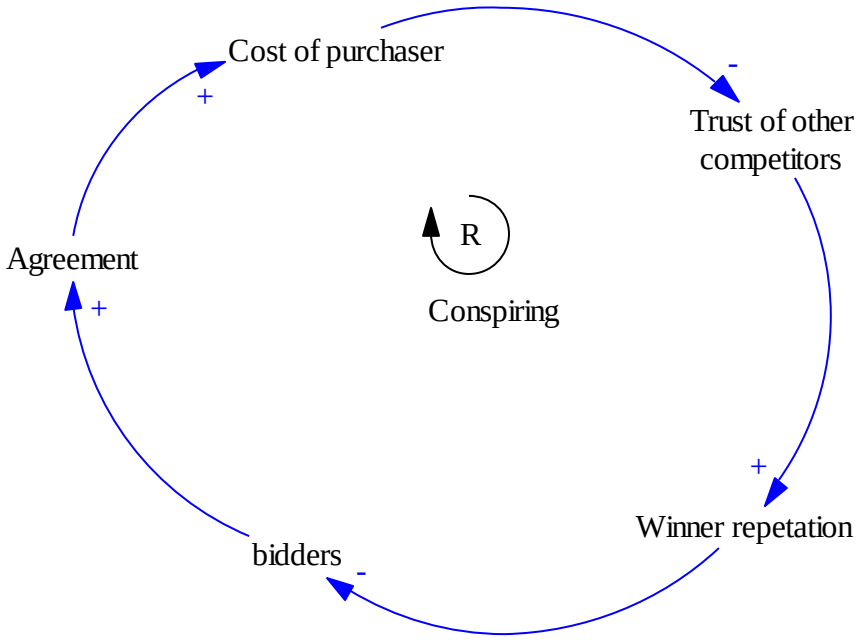


Figure 9: The Cause of Conspiring by Causal Loop Diagram

4.1.4 The Hindrance Communications

One of the drawback of competitive bid/tender based system is the procurement regulation doesn't encourage to discuss the purchaser and supplier. If discussion is necessary between the purchaser and supplier, it is applicable based on the bid timeframe and include all tenderer

during communication. The procurer afraid to communicate with bidder on entire aspect of procurement processes and the items will be supply by the suppliers.

In the other case, the bidder restricted to ask to some questions and to get some clarification due to the clear communication may give a chance for other competitor and loss to win the tender. All of the above situations leads to both the purchaser and supplier travel in misunderstand on the procuring goods and services. These results the supplier will take the contract without their potential and poor quality of goods may come into the purchaser organizations.

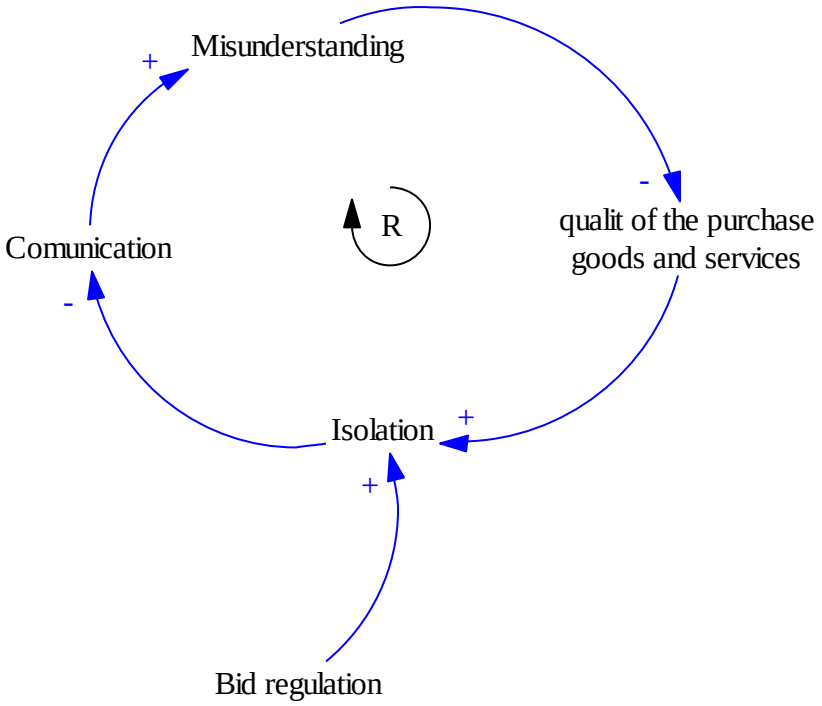


Figure 10: Communication Problems by Causal Loop Diagram

In competitive bid system the procurement regulation doesn't allow free communication between the purchaser and buyer. This enforces the purchaser and supplier organizations to isolate and run to accomplish their private interest independently. The lack formal communication between the buyer and supplier leads to inferior quality of purchased goods and services and also the required goods may deviate from the specified time.

4.1.5 Require High Investment in Time and Resources

This tendering process took a long period of time from procurement initiation period up to awarding the contract. Due to the procurement process complication, Lack of realistic timeframes for the tendering and procurement process and inconsistency across different departments within the organization the selection of bid/tender winner is late. Due to this many public and private small and mega projects are slow to finish their procured goods and services on the specified time period.

There is also a gap between the requisition of tender, tender award and the procured goods and services completion. One of the reasons for slowness of tender procurement process is the tender board. In different public and private organizations the tender board is assigned from different department. The work of the tender board is not only to follow-up the procurement process. But also they have their own profession work in their host public or private organizations. There is also professional limitation especially on procurement of technological goods. During that time the board is obligated to invite technical experts and needs additional time to give the bid award.

Another problem in competitive bid system which takes a long time is choosing successful bidder. It may require a long period to the required goods and services from supplier to customer. Sometimes the bid winner unable the requirements to supply goods and services or doesn't sign the agreement by its interest. During that the buyer is obligated to prepare another tender process. This re-tendering and re-negotiation process took a long period of time and slow the development of the organizations.

Generally; the tender process not only kills the time. But also it consumes a lot of resources like personnel and use different facilities. The tendering process from invitation to tender up to the sign of contract agreement is much of a paper work. Up to this time, most of the tender process is executed by hard copy documents. This paper work took a lot of resources and time.

Sometimes the bid process is interrupted by interest of purchaser or by bidder organization. The purchaser or the supplier may get crises or risks during procurement process. The purchaser or supplier may afraid to come out and recover from the risk. During that time either the purchaser or supplier obligated to interrupt the bid process or cancel the bid contract agreement. These

conditions push the organizations to re-tender or re-award. The result of re-tender and re-award the bid are time and resource consumption events.

All of the above problems are more related with problem of planning to procure goods and services. Due to the lack of consistent plan, the organizations don't forecast the risk and to prevent bid interruption and professional limitations when establish the tender board.

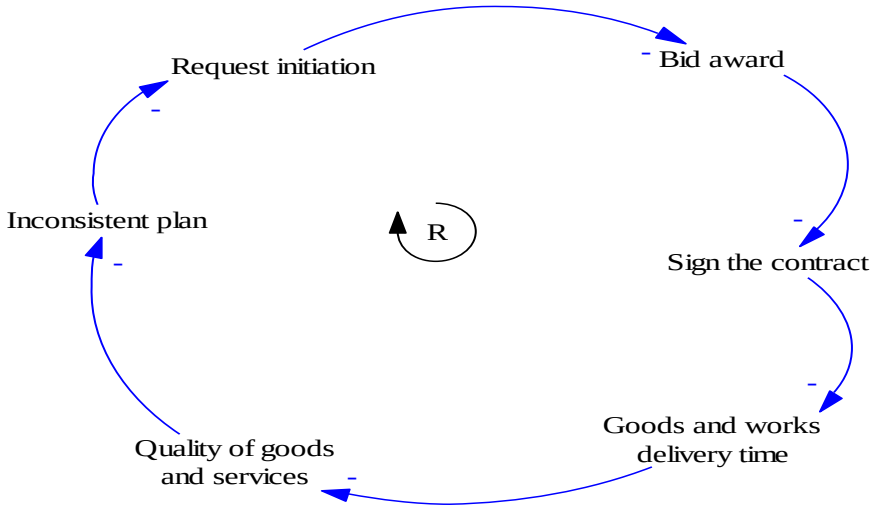


Figure 11: Time and Resource Problem

The above figure shows that the bid procurement system took a long time in different reasons. The one but the major cause for late delivery time and resource consumption is the inconsistent plan in the bid organizations. This inconsistent plan doesn't satisfy all the quality, delivery time and the required cost. In procurement organizations each department plan its own material requirement and specification. This took a long time and many resources due to its much paper works. In paper works process more time also devoted on unimportant tasks. It is difficult to highlight in procurement of goods and services.

4.1.6 Poor Creativity and Innovation

Once the agreement is signed between the supplier and buyer in competitive bid purchasing process, the buyer expects the goods and services which are specified in bid document. Not only

the buyer the supplier is also want to supply the goods and services which is agreed with the buyer.

This tender system hasn't interest for creativity and innovation for future organization development. Besides that the supplier is more interested to supply less value added goods and services to the purchaser to get more short term profit.

4.1.7 Vulnerable to Corruption

One of the principles in competitive bid system is more accountable to the participants. But the more accountability is more to vulnerable to corruption. Even the procurement process has its own regulation; the procurement may be helpless in case of entrenched or systematic corruption. All countries tried to articulate regulation. According to the regulation, giving and accepting bribes are criminal acts punishable by confiscation of property and imprisonment. Although rules are articulated to prevent corruption, still many national and international procurement processes are exposed to corruption. From this it is concluded that procurement regulation does not guarantee to prevent corruption in public and private organizations.

In this chapter the study has discussed some important problems in procurement of goods and services by competitive bid system. Some the causes to occur problems are, inconsistent planning, professional limitation, price inflation, taking a long time to go through the whole procedure and relying a lot of paperwork, non-confidentiality to win another tender, the procurement regulation by itself which inhibit communication, etc. In addition to this it needs a lot of people and resources and need independent people to administer the work.

Some tenderers are conspiring for their private benefit rather than equal chance with other competitors. This is one of the impacts for organizations for receiving inferior quality, late delivery time and increase the total cost of the purchaser organizations. Even the procurement process is regulated by the rule; it doesn't guarantee to purchase the required quality of goods in case of corruption. From this chapter it is conclude that the general output of the bid/tender based procurement problems are mainly expressed in quality, delivery time and cost.

Chapter Five

Building Long Term Supplier Partnership Model

5.1 Need of Change from Bid System to Supplier Partnership System

Many public and private organizations are procured goods and services by competitive bid system. This bid system is executed by creating opportunity for competitors fair, accountable, transparent and for purchaser creating opportunity to select least cost bidder. But the system doesn't administer the quality, delivery time and cost of the procured goods and services as expected as the request organizations. But in reality the bid competition system is highly distractive and disturbance of the purchasing system. Due to this the bid procurement system needs a paradigm shift to collaborative and consistent procurement method by build long term supplier relationship. This system will improve the problems which were occurred during tender based procurement method is applied.

Like any other system the procurement system is not constant. It is dynamically changed from time to time. From centralized purchasing system in to decentralized system and currently it is practiced as competitive bid system. But none of them could procure goods and services in high quality, less delivery time with minimum cost rather they were create the negative impact on the procured goods and services.

In this study develop supplier relationship model to increase the quality, minimize the delivery time and cost of the procured goods and services.

5.2 Model Building Variables and Building Relationship Model

To build supplier relationship model by system dynamics, it is necessary to identify the variables which have ability to determine the performance of public and private organizations procurement of goods and services. These variables are not only enablers of, but also inhibiters. If the enablers and inhibiters are existing there will be at the middle of the output variables. The variables which are important to build supplier relationship are derived from the bid procurement problems and its outcomes. Some important variable defined as follows.

Consistent Procurement Planning: one of the important variables to establish long term partnership is the ability to draft consistent plan to purchase goods and services. This consistent plan must be design under consideration of quality, cost and delivery time which have negative and positive impact for one organization. It means, managing procurement as a centralized function can have a positive and negative impact on a public and business organizations. On the positive side, if the organization have consistent procurement plan to purchase goods and services, it will reduce the delivery time. This helps to increase the performance of the organizations. The procurement professionals also develop their expertise and familiarity to purchase goods and services on the required quality, with minimum delivery time and cost. Procurement planning is done in every physical year. This affects the emergency procurement practice and it is not flexible. This indicates the negative side of procurement plan.

Confidentiality: this variable includes the capacity of the supplier and buyer organization on the continuity on the exchange of goods and services. The purchaser must be sure the sustainability of the supplier to supply goods and services, in the right place, time, cost, quantity, quality etc. the supplier also would sure how many orders will be comeback in the future.

Use of IT: the information technology is important in procurement process. It can be used for supplier management system, to communicate with suppliers and purchasing process. In today's dynamic and competitive environment, every country needs to develop fast and consistent economy. "Enough is not enough". If one organization or country is satisfied in the present richness and nothing is done in the coming season, it is would not stay on the current rank rather it would lag behind from other competitor. So, too fast the economy, fast communication system is necessary. Information technology links across all members of the supply chain, increasing the speed of information transfer, and reducing non-value adding tasks. Among the software which is important for this purpose is ERP. The ease of communication and negotiability with the suppliers decide the long-term relation between the purchaser and supplier.

The longer a supplier provides a customer, the better their understanding of the customers market, business and business processes will be. This will allow greater integration of business, IT and financial processes alongside increased effective stakeholder involvement from both parties.

Delivery: this is the ability of supplier to follow the predefined delivery schedule in this dynamics world. This means that suppliers who keep their promises are easier and profitable to work with. This measure may seem simple and straightforward, but when suppliers are chronically late, it can add significant complexity to an organization's operations. These suppliers have the potential to shut down production lines and cost organizations a large amount of money.

Total Cost of Quality: it is the sum of maintenance and appraisal cost. The total cost of quality depends on the quality of purchased goods and services.

Partnership: it is the mutual relationship between the buyer and supplier. A commitment over an extended time to work together to the mutual benefit of all parties, sharing relevant information, risks and rewards of the relationship.

Least price supplier selection: commonly, procurement personnel select the supplier with least price competitive bidder. But this financial system is not only to measure the performance of procurement. Other intangible variables, quality of the procured goods and services, timely delivery of orders are more important in this competitive environment.

5.3 Development of Model and Discussions

By considering the above variables, the long term supplier partnership model is developed by using qualitative system dynamics causal loop diagram. To develop a model Vensim software is used to connect different nodes the variables are assigned. The CLD consists of a set of nodes that represent the variables in the system, and connecting lines that describe the relationships between the variables and direction of each relationship. A positive causal link between two nodes indicates a positive relationship, such that when one variable increases (or decreases), the other variable also increases (or decreases). In other words, the variables change together in the same direction. However, a negative causal link means the two nodes change in opposite directions. For example, if the node from which the link starts increases, the other node decreases, and vice versa. CLD diagrams can be used to show the governing inter-relations among a number of different variables using feedback loops. A positive feedback loop means the dependent variable moves in the same direction as that of the independent variable; as such, the polarities are assigned as a plus (+) sign on the arrowhead of feedback loops. In the case of

negative feedback loops, if the independent variable increases, the dependent variable decreases and vice versa. Thus a minus (–) sign is assigned to the arrowhead of the feedback loop.

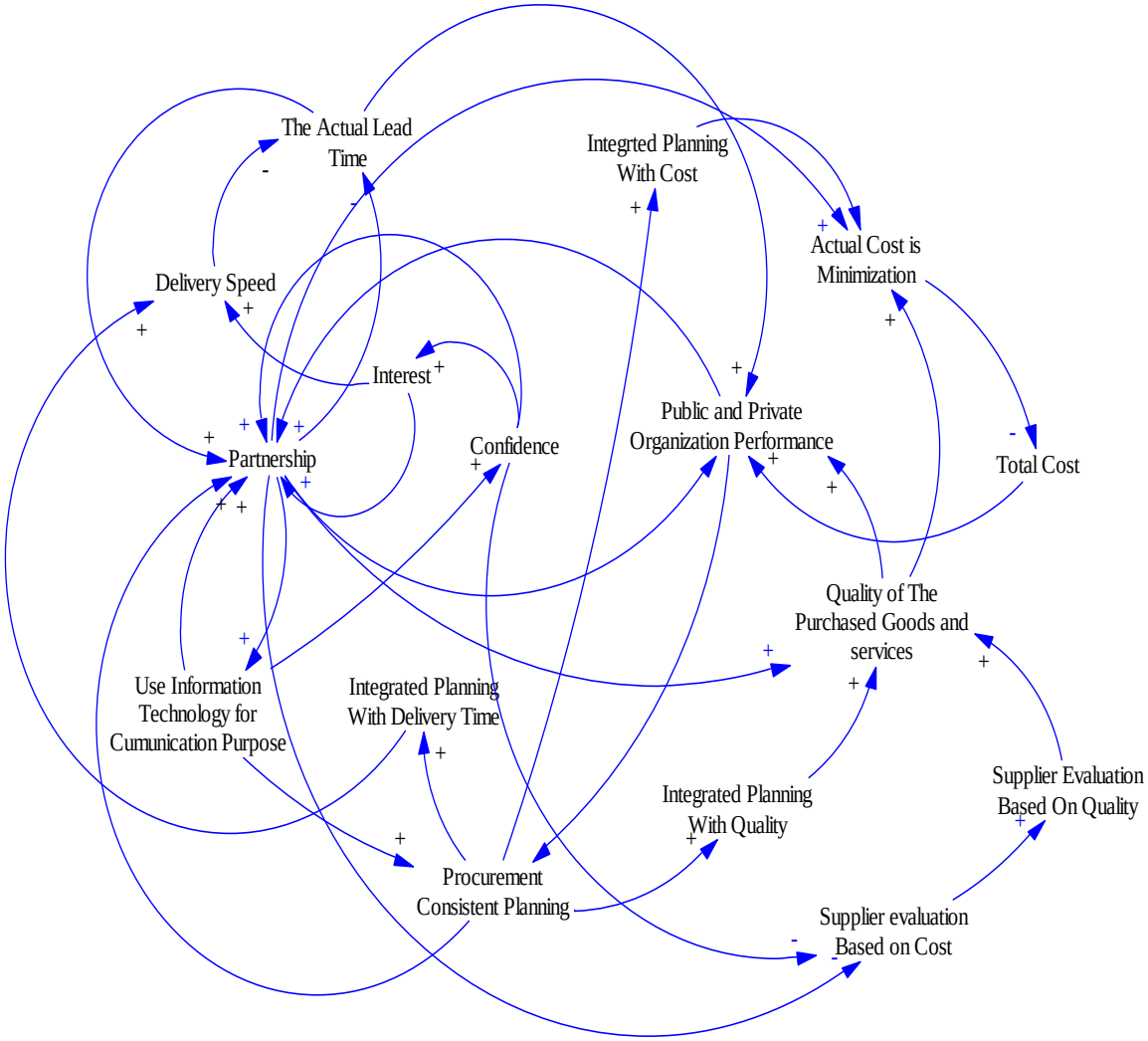


Figure 12: Supplier Relationship Model

From the above there are many loops which are connected in different variables node and procurement organization performance.

Loop One: when the procurement organizations are design the consistent plan with its departments and suppliers, it strong integrated plan with delivery time. This also increases the delivery speed and minimizes the actual lead time and finally it increases the performance of the organizations. When performance increases the ability to outline best plans is increases.

Loop Two: during procurement process the organization is draft the purchasing plan with quality. This increase the quality of purchased goods and services, actual cost minimization increase and total cost decreases and finally the performance of the organization increases.

Loop Three: when procurement organizations integrate the procurement plan with integrated cost plan it decreases the actual cost and total cost of quality on the performance of the organizations.

Loop Four: if procurement organizations use information technology for communication purpose, it increases the confidence of buyers and suppliers. Supplier knows the interest of purchaser. If problems occur, they solve by discussing to each other. Their certainty is increased for future relationship. In every procurement process, interest will increase, if communication between buyer and supplier freely transformed. The more interest between suppliers and buyers, strong and long term supplier partnership is build. This partnership relationship increases the message transformation of day to day activity with information technology. Greater use of information technology across all procurement activity will deliver a range of benefits. The purpose of this measure is to determine progress being achieved towards paperless, electronic requisitioning and ordering as well as integration/interfacing with trusts' existing payment systems.

Loop Five: if partnership is built between the buyers and suppliers, the quality of procured goods and services is increased. If the purchased goods and services are free from any ineriarity of quality, then the performance public and private organizations are increase and partnership is also strongly developed.

Loop Six: information technology increases the confidence of buyer and supplier. If confidence is increased trust is more and partnership is simply developed. When partnership is built, Supplier evaluation based on price is decreased and supplier evaluation based on quality is increased. Quality of the purchased goods and services are increased. Then the organization performance increased and the intensity to build partnership is also increase.

Loop Seven: partnership increases the quality of purchased goods and services due to the fact that both supplier and buyer have long term mutual beneficial relationship. Actual cost is minimized due to the total cost of quality decrease. If the procurement organizations procure

high quality goods and services, the maintenance and appraisal costs are decrease. This increase public and private organizations performance and initiate to build partnerships. .

5.4 Case Studies

Under this section the study use two case studies, one from public sectors which is a nonprofit organization and the other from business sectors which is established for profit. In the first case study the organization procured goods and services through bid/tender based procurement system and in the second case study the business organization procured material by long term supplier relationship. The drawback and importance of the two purchasing system is clearly illustrated in each organization respectively.

5.4.1 Case Study One: Competitive Bid System

Ethiopian Public and Property Administration Agency is established under the Federal Democratic Republic of Ethiopia Ministry of Finance and Economic Development Public Procurement and Property Administration Agency under Proclamation No.649/2009.

Problems Occur due to Inconsistent Plan

The Procurement Agency must accept annual purchasing plan from each public organization to procure goods and services by inviting international as well as national bid competitors. But each public body did not send their material needs as fast as possible. They request after their organization stock out. During this time, the procurement agency is obligated to buy goods and services in fragmented way on quotation method. Even the tender process begins, it is enforced to interrupt the process and they try to procure goods and services by distributing quotation especially for non-strategic materials.

This quotation system is enforcing the buyer to be biased to some suppliers and limit the fair competition. For example the procurement agency in 2011 procured the ICT material from Jupiter Trading and for metal works from Gedion Naod and Tesfaye metal enterprise only participates on the competition.

From this it is understandable that the procurement of goods and services by bid system is fruitless if each organization does not submit its annual needs in time. In another case the bid

system has not consistent plan from each department and collapse before met its goal. One of the principles of competitive bid system is pursuing fair competition between the suppliers to get least cost bid. But in the above situation it breaks the rule. It means that the bid procurement rule is broken by its action.

Problem with Framework Agreement

In the other case the government procures goods and services by framework agreement. Framework Agreement means a basic agreement with supplier which sets out terms and conditions that allow public bodies to order goods or services throughout the term of the agreement under the terms and conditions specified in that framework agreement.

A Framework Agreement sets out the terms and conditions for subsequent call-off contracts but places no obligations on the public body to place future purchase orders, does not require or obligate public body to issue any minimum number or value of purchase orders, and does not guarantee any minimum or maximum amount of expenditure under the Framework Agreement.

Now a days, this framework agreement procurement system is more applied by higher public universities to procure different materials. But, most of the time the system is inefficient. This inefficiency is expressed mainly in terms of quality, delivery time and cost.

Example: one of the important elements in educational institute is stationary materials. Based on that some the procurement agency agrees to purchase paper from some Pulp Factory. But the factory didn't deliver the required amount of time at required time. The delivered ICT materials have quality problems. The printer and scanner explore a disturbance sound.

In framework agreement the supplier gave false information to the purchaser before they agree. For example the procurement Agency wants to purchase cori3 Dell laptop. But when the agency went to their, to sign the agreement the supplier display Cori7 instead of Cori3. These situations increase the cost of the Agency and waste unnecessary time.

Generally the procured goods and services by framework agreement do not have better quality, less delivery time and cost as expected.

5.4.2 Case Study Two: Long Term Partnership System

Toyota and Honda are two companies that first come to mind when one considers the benefits of supplier collaboration. By partnering with their key suppliers, these two manufacturers have taken market share and improved profitability for decades by making better-quality, more-competitive products.

Toyota is constantly searching for new suppliers that can provide industry leadership on cost, quality, and technology. However, the company selects only those suppliers that are willing to establish long-term partnership with Toyota and have the ability to be successful in such relationship. Towards the end, Toyota imposes very stringent selection criteria and undertakes a long and arduous selection process. The goal is to ensure that every supplier meets Toyota's requirements in terms of quality, cost, and technology, and also demonstrate a commitment to and a good philosophical fit with Toyota.

To manage the lengthy supplier selection process, Toyota deploys a cross-functional team consisting of representatives from purchasing, engineering, manufacturing, and management. Although these individuals work together very closely to qualify a supplier, each has distinct role to play. Purchasing personnel identify new supplier and are responsible for assessing suppliers' competitiveness on cost, as well as their quality-assurance process and procedure. Engineering team members assess suppliers' technological capability and potential for innovation. Manufacturing team members assess suppliers' production capabilities and potential for implementing the Toyota Production System. Management team members evaluate suppliers' strength and commitment in two areas: senior managers' understanding on and involvement in operational details, and the company's philosophical fit with Toyota. In evaluating a supplier's philosophical fit, Toyota looks for five key elements: kaizen (or continuous improvement), consistent reasoning, cross-functional teaming, sharing of information and knowledge, and responsiveness.

The whole selection process is based on Toyota's belief that long-term partnerships create more value than short-term ones. Working with familiar suppliers reduces transactions costs, and long term suppliers can be integrated in to long term-product planning cycles. This capability, in turn, leads to custom-made, robust solution with optimized specifications.

The need of paradigm shift from bid/tender based procurement system into long term supplier relationship to procure goods and services for public private organizations is essential. In a dynamic environment, procuring goods and services by competitive bid system is not efficient to meet purchaser expectations. The procured goods and services by competitive bid system are inferior in quality, take longer delivery time and cost too much.

Due to the above reasons the public as well as the private organizations need long term supplier relationship with supplier to procure goods and services. Bid/tender based procurement problems are analyzed by using causal loop diagram and supplier relationship model is developed and analyzed by system dynamics model. The supplier relationship model can administer quality, delivery time and cost simultaneously.

Chapter Six

Conclusion and Recommendations

6.1 Conclusion

This and the previous others researches assure that procurement is one of the components of supply chain management. If the procurement process is well done, it has the power to increase the performance of public and private organizations or it is not well done, it loss the competency and finally push out of the market in private sector. One of the applications of procurement management is procuring goods and works by competitive bid system. This bid procurement system cannot administer the quality, delivery time and cost simultaneously and wisely. The purchasers and suppliers are designed their own independent plan to get their own private benefits rather than long term mutual beneficial relationship to increase the organizations performance.

Even if the bid process is led by its own procurement regulation, it does doesn't guarantee to accomplish the procurement as requested. The problems which were occurred in bid/tender based procurement system are: conspiring, poor quality of the purchased goods and services, long delivery time and are the common. The problems are created by the bid process, it leads delays due to much paper work, increases the cost due to inconsistent plan, its output also inferior in quality due to price based supplier evaluation system and its isolation.

Procurement takes the lion share in public organizations and high production cost in manufacturing sector. According to Ethiopian public procurement and property administration policy, procuring goods and services take up to 64% the total Ethiopian budget and it covers 15% GDP. But due to in different factors; the country lose many million birr in each year due to increase delivery time, poor quality, improper use of resource etc. which are the case for many public and private projects for cost overrun. In addition there is a quality problems, and increase the total cost of procured material in public and private organizations. Many universities in Ethiopia follow the purchasing system is frame work agreement. The government always obliged to procure materials services and works in competitive bidding. These re-tendering and re-negotiation process consume the time which has the negative impact for late receiving. The

material also has quality problem and the procurement process also has a high chance to be exposed for corruption.

The study illustrated the problems which occur by competitive bid/tender based procurement through analysis done by developing a causal loop diagram. By investigating the variables which are important to build long term supplier relationship between buyers and suppliers; supplier partnership model is developed by qualitative system dynamics model. The partnership model showed how to increase the performance of organizations by increasing the quality of purchased goods, minimized delivery time and cost.

6.2 Recommendations

In the 21st century, competition without cooperation is fruitless and decreases the performance and competitiveness of public and private organizations respectively. As previously explained in this study, procurement is one of the component of supply chain, it is also necessary create collaborative long term relationship between supplier and buyer. However collaborative working between supplier and buyer increase the quality of procured goods, increase the responsiveness to deliver the procured goods and services. To add dynamic capability of the purchaser organizations and enhance the performance and competitiveness of the two sectors, it is necessary work collaboratively with supplier for long term partnership.

Many business organizations build relationships with their critical suppliers for a long period of time. Case study one showed the Japanese car manufacture like Toyota's successes. This is the reason that Toyota is working with its supplier without switching or shifting from their familiar supplier and it share both reward and risks.

Not only business organizations but also public organization should build strong relationship with supplier by implementing long term relationship. One of the weaknesses between public and private sectors on the concept of procurement is; the private sectors quickly adopt new system and technology but the public sector afraid from implementation of the new system and technology. They are moving in isolation form by built bridge in between. In this dynamic environment it needs to break a bridge and minimize the gap to come up and to build partnership.

But through time this bedding system is inefficient and the purchaser is obliged to find another method. This study recommended long term supplier relationship procurement method better than procurement of goods and services by bid/tender based procurement method. Due to the problem of procuring goods and services by bid/tender based procurement system, it is necessary to make paradigm shift to long term supplier relationship. Partnership is the life blood to increase the performance of public and private organizations.

Generally, to increase the quality, to improve innovation, to prevent corruption, minimize delivery time and cost, long term supplier relationship is crucial and important. So, the study highly recommend for public and private sectors to use long term supplier relationship rather than bid/tender system on the procurement process of goods and works.

6.3 Future Research

The study investigated the problems of competitive bid/tender based procurement system as a general context. The study is focused the necessity paradigm shift from competitive tender procurement system to long term supplier relationship system. Since the concept is broad, to analyze the problem and to build supplier partnership, model qualitative system dynamics is used. The future research should use specific organization and use quantitative system dynamics to simulate and validate the model.

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