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SUPPLIER AND STOCKS MANAGEMENT PRACTICES AT COCOA PROCESSING COMPANY LIMITED

By

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CERTIFICATION

I hereby declare that this submission is my own work towards the MSc PROCUREMENT MANAGEMENT degree and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgment has been made in the text.

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ABSTRACT

Supplier and stocks management practice continues to be growing phenomena in most cocoa processing companies all over the world. Decision about how many of which products are to be in the warehouse, when to place next the orders, the quantities to be ordered are some of the problems encountered every day. High level of stock locks up the capital of any company. Hence, the aim of this study is to uncover the best stocks management practice and supplier management that will make the Cocoa Processing Company (CPC) adhere to the value for money in capital and recurrent expenditures with relation to procurement law in the country. The objectives are to identify the suppliers and stocks management principles adopted and utilized; assessing the effectiveness of Cocoa Processing Company's Suppliers and Stock control management; examining the challenges encountered in the application of supplier and stock control management and ascertain whether or not learned from these principles. A thorough literature review was done, hence questionnaires was designed and administered to total sample of seventy-three respondents which was made up of various departments who are involved in suppliers and stock management processes. Data was analysed using Statistical Package for Social Science (SPSS, Version 16) through the use of descriptive statistics (percentages). The findings of the study point out to the fact that computerized system are used in taking inventory, however, these is only used at the stores and not accessible by end-users. In addition some of the challenges the study revealed include: non-availability of production materials, the trade system adopted by the government has constrained the company in production activities and the power outage has led to increase in production. Again, congestion at Tema port has caused untimely delivery imported input. More importantly, the study revealed that the company has failed in documentation due to redeployment strategies which does not fit current trend company status. The study therefore recommend that Appraisal Tender Review Committee (TRC) should be vibrant in ensuring effective and efficient dissemination of information to entire staff on procurement processes and procedures to enable informed decisions by CPC Management. Capacity training on knowledge and skills acquisition in procurement management for staff should be encouraged. There should be the engagement of material manager for the coordination of departments involve in handling all suppliers of production stocks and materials. The implication of the study gives a directional approach to the management of suppler and stocks management at CPC Ltd and adheres to will improve the performance of the company as a whole.

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LIST OF ABBREVIATIONS

SPM	Supplier Performance Management
SRM	Supplier Relationship Management
SLAs	Service Level Agreements
GSE	Ghana Stock Exchange
PPA	Public Procurement Act
FZB	Free Zone Board
TRC	Tender Review Committee
SPSS	Statistical Package for Social Sciences

CHAPTER ONE

INTRODUCTION

1.1 General Introduction

According to Leenders and Feron 1997 "one of the challenging aspects of the purchasing function to its practitioners is the variety and nature of the decisions encountered. Furthermore, decisions in the management of supply "almost always are made in a context of uncertainty. This can be derived from the vast amount of factors (as mentioned above) which affect the environment of supply management. To cope with this complexity and dynamism, supply activities need to be managed substantially (Michel, 2008).

Supply and inventory/stock management practices have attracted a great deal of attention from people both in academia and industries. A lot of resources have been devoted into research in the inventory management practices of organizations. Companies with superior forecasting abilities can afford to procure or produce a large fraction of their demand by making use of low production methods and inexpensive logistics services. These companies pay more for faster production and logistics services only when the demand surges or goes up unexpectedly. On the other hand, companies with irregular demands and inferior forecasting abilities have to pay more for using fast production methods to respond to unexpected surges in demand.

The cooperation between companies stimulates companies' dependence on their (sub-) suppliers (Delfmann and Klaas-Wissing, 2007). Other factors with an impact on the importance of supply management are market mechanism, in which supply, demand and price are in interaction. The result is tougher competition between companies, which gives reason for rising cost pressure and improvement of innovation (organizational theories, especially transaction cost theory) (Becker, 2006).

The advances in manufacturing technologies, logistics services, and globalization makes it possible for companies to satisfy their customer demands from sources with different prices and lead time. On the other hand the ability to provide better forecasting increases as the delivery date approaches. Also the cost increases as the lead time increases. It is therefore critical to be able to simulate in advance the demand information, lead time in logistics services and to strike a balance between the quality of demand information and the cost of production and logistics services. This study therefore explores the major issues in the supplier and stocks management practices of the Cocoa Processing Company Limited (CPC) based in Tema.

The Cocoa Processing Company Limited (CPC) based in Tema, near Accra in Ghana, was incorporated in November, 1981 as a limited liability company. The company whose main objective is to process cocoa beans by adding value to them, comprises two main factories, namely The Cocoa factory and The Confectionary factory. The former processes raw cocoa beans into semi-finished products-cocoa liqour, butter, natural/alkanized cake or powder whilst the Confectionary factory manufactures the Golden tree chocolate (CPC Ltd website).

1.2 Statement of problem

Decisions about how many of which products are to be stored in the warehouse, when to place the next order, the quantities to be ordered are some of the problems encountered every day. High level of stock locks up the capital of any company. Customers on the other hand, lose confidence in the company and look elsewhere if there is no availability. This can reduce the profitability of the company and eventually crumple the company.

The science of balancing the right levels of stock can be solved by modeling the stock system into a mathematical model. This model can then be simulated and the result analyzed to reach

the best practices in stock management. Goods in transit, obsolete stock, dead stock, fast and slow moving stock, back orders are all problems associated with managing stock systems.

Why the frequent shortages on the supply of production materials? The study is seeking to explore the strategies of managing supplier relationship in terms of procurement and stocks level control management within the Cocoa Processing Company limited. A broad perspective of issues is conducted to examine the complementary and contradictory views of management practices in procurement within the Cocoa Processing Company limited.

An approximate annual value of public procurement for goods, works and consultant services is been given as US$600 million (World Bank 2003) thus 10% of Ghana's GDP. An improvement in the public procurement system will therefore have a direct and substantial impact on the overall economic situation of the country and that will result in budgetary savings and efficiency in government expenditures. However, successive reviews have revealed substantial inefficiencies and conclude that there was no value for money services rendered. This paper explores the major issues in the supplier and stocks management practices of Cocoa Processing Company Limited.

1.3 Research Objectives

The aim of this research is to uncover the best stocks management practice and supplier management that will make Cocoa processing company (CPC) adhere to value for money in its capital and recurrent expenditures with relation to procurement laws in the country. To achieve the above aim, the following specific objectives will be achieved.

- To identify the major Supplier and stocks management principles adopted and utilized by Cocoa Processing Company Limited (CPC) in implementing procurements
- To assess the effectiveness of Cocoa Processing Company's Supplier and stocks control management principles been applied

- To examine the challenges encountered in the application of supplier and stocks control management principles during the implementation.
- To ascertain whether or not learned lessons from this principles have been documented for the future.

1.4 Research Questions

- What are the major Supplier and stocks management principles adopted and utilized by Cocoa Processing Company Limited (CPC) in implementing procurements
- How effective are the Cocoa Processing Company's Supplier and stocks control management principles been applied
- What are the challenges encountered in the application of supplier and stocks control management principles during the implementation.
- Has CPC learned lessons from these principles, has it been documented for the future.

1.5 Justification of the study

This study is justifiable in that it helps the Cocoa Processing Company promote value for money in its Supplier and Stocks management through pursing the lowest "whole of life" cost, clearly defining relevant benefits and delivering on time. It helps the company to prevent waste and fosters competition, transparency and accountability during the tendering processes which are key conditions to achieving the value for money. Importantly, to come out with a recommendation suitably defining procedure for the procurement of production materials using Supplier and Stocks Management practice that would enhance efficient, effective and economical strategies for the Company's value addition.

Academic persons with interest in supplier and stock management can fall on this research for reference and other relevant information. This study is also vital to firms in Ghana as well as to investors and potential investors inside or outside Ghana. Decision makers and managers in companies can depend on the findings of this work in developing their supplier

and stock management strategies. This can indeed be significant to many developing countries, because the case study unit (Cocoa Processing Company) is a multi-national company and many similarities exist between firms in Ghana and numerous other developing countries. Therefore, the significance of this study will extend beyond the boundaries of Ghana.

1.6 Methodology

1.6.1 Sources of data

Data was gathered from both primary and secondary sources. Primary information was gathered through observations, questionnaire administration in the field, district assembly officers, community leaders in beneficiary communities, assemblymen and unit committee chairmen, as well as schools and students. Secondary information was obtained from books, statistical data, graphs, charts, use of census data and newspapers. Others included maps and audio visual materials such as photos, film, TV and radio collected from documented sources and electronic sources, journals and thesis of student from libraries.

1.6.1 Sampling Method

Mixed methodological approaches of the purposive and simple random sampling were used to select relevant stakeholders for the study. As indicated by (Roscoe, 1969) "sample sizes larger than 30 and less than 500 are appropriate for most research" In order to ensure reliability of data, departments involved in the management of Suppliers and stocks control management at Cocoa Processing Company, include the following departments: (1) Accounts, (2). Production, (3). Procurement, (4) Marketing, (5) Engineering (6). Audit Department (7) Human Resources, (8) Confectionary and (9) Cocoa Factory Department were interviewed. The sample size of 73 was very necessary because of resource constraint in terms of time. The selection of respondents was done via purposive sampling; a non-probability sampling technique.

1.6.2 Data Analysis

Data analysis was done in the form of both qualitative and quantitative analysis. The qualitative responses was verified and synthesized to arrive at logical deductions and inferences made. Additionally, quantitative data was analyzed using the statistical product for service solutions (SPSS) and Microsoft Excel. The data that was secured from the field survey was presented in tables, graphs and charts.

1.7 Scope of study

For a detail study, research is restricted to Cocoa Processing Company that would sensitize and promote an action driven supplier and stocks management practices within the remits of the Public Procurement Act 2003, (Act 663) and the Government Free Zone incentive.

1.8 Organisation of the study

The study is organised into five chapters. Chapter one is the introductory section of the study. It looks at the background to the study, scope of the study, statement of the problem, related research questions, objectives of the study and the organisation of the study. Chapter two is the literature review. The chapter commences with an introduction, followed by the other sub-sections which include the concept of sculpture and household generated waste, sculptural potentials of household generated waste and economic benefits of household generated waste. Chapter three focuses on the research methodology; it describes the research design, the study population, sample size, sampling techniques, sources of data, data collection instruments, validity and reliability of instrument and method of data analysis. Chapter four presents the study findings finally conclusions made from the research findings and recommendations are presented in Chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section reviews several strands of relevant literature that aim to assess the basic issue of supplier and stocks management practices. The idea of this chapter is to unearth the variables in the subject to allow for a proper analysis and discussions.

2.2 Supplier Management

Besides the tools to establish an effective and well-coordinated supply network, the management of suppliers, or Supplier Relationship Management, is essential. In literature Becker (2006), derivate the need for Supplier Relationship Management from Supply Chain Management. Thereby define it as one of eight sub-processes of SCM and see it as a process which includes the own company, suppliers and also customers (Becker, 2006). There exist a lot of definitions for the management of suppliers. Becker (2006) classifies the definitions into ones which either have their origin in SCM or in relationship management. Further, he distinguishes if they have a reference framework or not.

Table 2.1: Definitions of Supplier Management

Authors(s)	Definition	Derivation
Monczka, 2005	"Supplier management and development includes a broad array of actions taken to manage and improve a worldwide network of supply chain partners, also commonly known as suppliers. The primary objective of any management and development process is the continuous improvement of supplier capabilities."	Derived from SCM, focus on flow of goods, no reference framework.
Croxton et al., 2001.	"Supply Chain Management is increasingly being recognized as the integration of key business processes across the supply chain. […] Supplier Relationship Management is the process that defines how a company interacts with its suppliers."	Reference framework: SRM is one of eight sub-processes of SCM.
Tan et al., 2002, p. 11	"Three dimensions underline supplier management: (1) effective supplier selection; (2) innovative development strategies; and (3) meaningful supplier performance assessment mechanisms."	Derived from relationship management, no reference framework.
Wagner, 2000	"Managing suppliers is the practice of planning, implementing, developing and monitoring company relationships with current and potential suppliers."	Derived from relationship management, St. Galler Management concept as reference framework.

Source; Kurt, 2012

Without Relationship Management the successful management of a company's network is not possible. SRM can be classified into the strategic and market orientated procurement relationship management (Becker, 2006).

The aim of supplier management is similar to those in procurement and relationship management. Operative objectives are the support of the company with the selection and development of suppliers, trying to find a standardized method or tool to compare and measure active and potential suppliers. The primary strategic objectives are to increase supply quality and at the same time to lower procurement costs, improve cooperation between the supplier and the company or even to achieve a deeper integration of the supplier into the value-added process (Maier, 2011).

2.3 Supplier Management Practices

Lindgreen and Wynstra (2005) suggested that two widely differing supplier management practices have emerged from both practice as well as academic research on the issue of how to optimally manage suppliers. The literature generally distinguishes between two basic purchasing strategies: Competitive and Collaborative, or in other words, adversarial and partnership strategies posits Lindgreen and Wynstra (2005). Bensaou (2000) suggests a hybrid of the competitive model and a partnership model as another supplier relationship strategy. For organizations that are applying strategic sourcing, outsourcing, and low-cost-country sourcing, the supply environment has changed or is changing dramatically. These efforts have created more concentrated supply bases, often with a handful of large suppliers playing a major role in supporting the organization. Further, these efforts have shifted business critical processes and value chain activities that had previously been performed internally to outsourcers creating new major supply relationships that are often vital to operational continuity. Accelerated product cycles, vastly more sophisticated supply chains, rapid pace of process and systems change, and the need to work seamlessly with offshore suppliers have made effective supplier relationship management more demanding and more critical than ever before. Simultaneously, for many companies, a large portion of external spend has reached a mature state after one or more waves of aggressive sourcing. Spend

consolidation, improved supplier selection, spec rationalization, and shrewd negotiation have yielded impressive benefits. However, in categories where these techniques have been applied, further year-on-year improvements through repeated sourcing are likely to provide diminishing returns – fundamental improvement in supplier relationships and joint processes will be required to address remaining inefficiencies.

Along with the changes in companies' external supply environments, there have also been major changes in the procurement function as well as in procurement practices, processes, and systems. In many companies, the procurement function, traditionally the owner of transactional purchasing, has taken on a broader role leading the business through application of strategic sourcing and outsourcing in category after category, spreading procurement best practices. In addition, many companies have adopted best practice models for strategic sourcing and many have deployed procurement systems to support the sourcing process and streamline on-going purchasing activities.

Even as they seek new opportunities in sourcing, leading companies are finding themselves dependent on an increasingly complex supply base, with the need to drive further cost and performance improvements, manage supply risk, and streamline costs of supplier interaction. These companies are developing a new set of Supplier Relationship Management (SRM) capabilities – including processes, governance mechanisms, and systems to manage suppliers on a day-to-day basis over the full relationship life-cycle.

Early adopters of SRM are realizing savings in existing relationships, remediating relationships that are not working, working with suppliers to build joint capabilities and improve joint processes, effectively managing supplier risk, and reducing internal costs of supplier management. Typical benefits include:

- Maintaining negotiated savings and driving incremental savings of up to 5% beyond the initial sourcing transaction
- Creating real accountability and incentives for suppliers to deliver business value
- Maximizing relationship lifetime value, and gaining competitive advantage by effectively managing suppliers that are truly strategic
- Managing supply risks and challenges effectively to further decrease supply costs

According to Becker (2006) supplier management can be divided into five groups: Supplier preselection, supplier negotiation, supplier integration, supplier assessment and supplier development (Becker, 2006).

2.3.1 Supplier Preselection

The first step to achieve effective and successful supplier management is to preselect suppliers. The purpose of pre-selection is to reduce the set of all potential suppliers to a set of eligible, approved suppliers. By contrast, during the selection phase the products, prices, and other delivery related issues of the eligible suppliers are assessed, and a decision is made which supplier to do business with (De Boer et al., 2001). Moreover, pre-selection can be conducted proactively to potential suppliers unlike the actual supplier selection. That way the buying company can have a list of approved suppliers that can be utilized when the purchase need actually arises. This means an optimal supplier base, which is tailored to the requirements and objectives of the company, has to be formed (Monczka et al., 2008, p. 204 ff. and Becker, 2006). The supplier base represents all potential suppliers which passed the preselection. Presumably, once a supplier has been perceived as an eligible supplier, it won't lose its eligibility right away. Thus, the pre-selected suppliers can be considered approved suppliers for a certain period of time. These suppliers can be separated into approved and

earmarked suppliers. Earmarked suppliers are temporary blocked for business due to various reasons like a repairable inadequacy. Also, there are active suppliers with which a business relationship already exists. In contrast to the supplier base, the totality of suppliers (potential suppliers), also includes not audited or in general not capable suppliers (Becker, 2006). (See Figure 2.1).

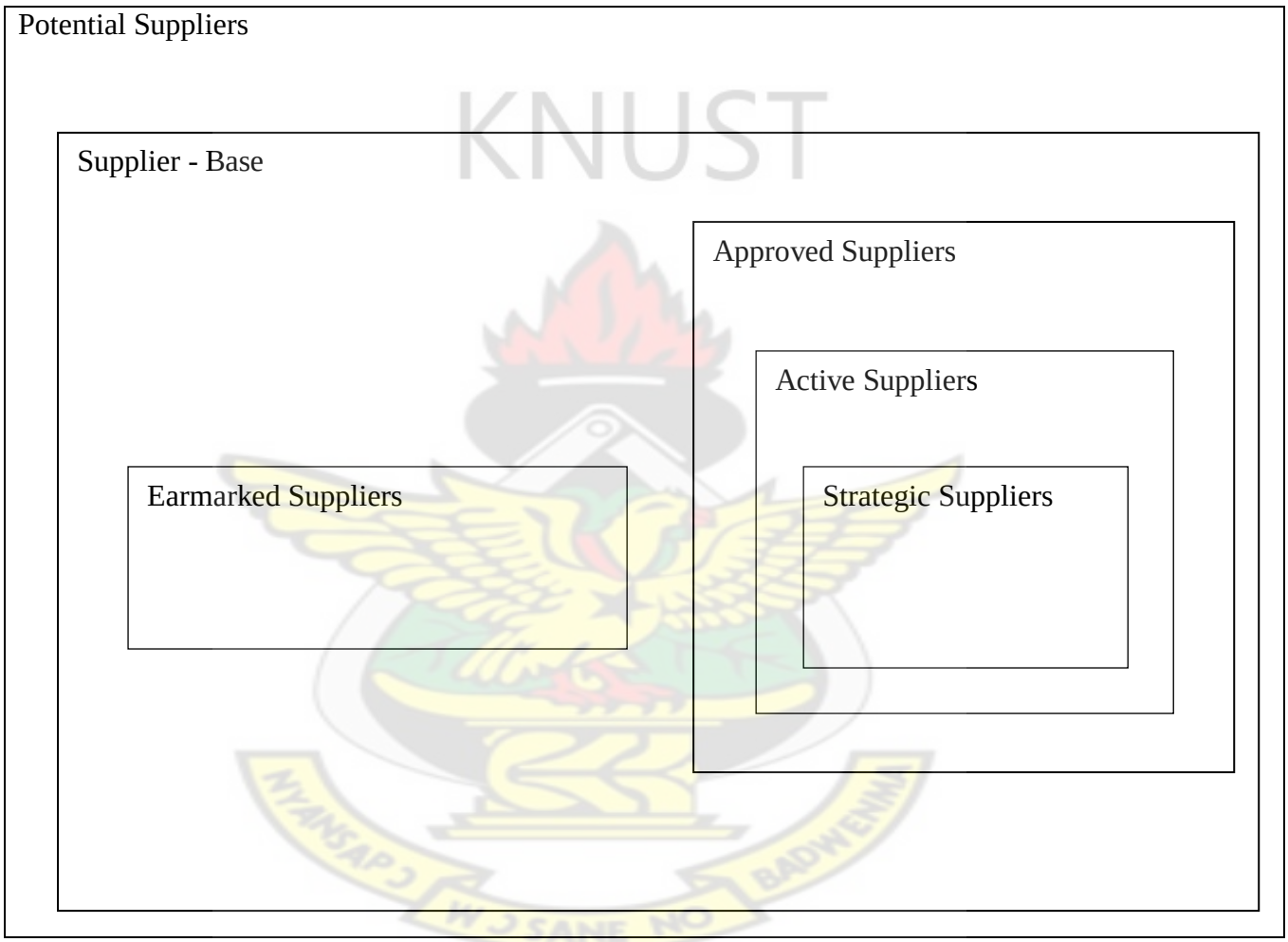


Figure 2.1: Systematization of Suppliers (adapted from Becker, 2006)

In order to select exclusively suitable suppliers for negotiations, their capability has to be made measureable. Assessment factors do not only have to be hard facts like price, quality or very complex performance figures like total-costs. Contrarily, soft facts e.g. trust or willingness to communicate are becoming more and more important, although they are hardly measureable (Becker, 2006).

Furthermore when preselecting the suppliers, the number of suppliers per item and the geographic area in which the item is going to be sourced need to be determined. Sourcing can be subdivided according to geographical factors into global sourcing, domestic sourcing and local sourcing (Monczka et al., 2008). Moreover, a decision about the optimal number of suppliers has to be made. The strategy, whether to choose single or multiple sourcing, determines the leverage over the supplier (single sourcing) and the assurance of supply (multiple sourcing). In recent years a trend to single sourcing can be noticed (Monczka et al., 2008). The strive for long-term business relationships and the reduction of suppliers to attain a less complex supply network may be reasons.

2.3.2 Supplier Negotiations

To successfully negotiate with the negotiating partner, the firm has to be aware of its bargaining strength and future target interests. As much information as possible has to be generated about th partner. The goal is to find a supplier which can at least fulfill the maximum procurement price and fits the overall procurement strategy with its characteristics (Becker, 2006)

2.3.3 Supplier Integration

To achieve a coordinated and well performing supply chain, Supply Chain Integration can be used. It is the most intense form of collaboration within a supply chain. However, the participating company has to detach itself from the traditional purchase order and strive for higher transparency with the supply chain partner. The term Integration is defined as the merging of parts into a whole (Vijayasarathy, 2010).

The aim of modern SCM is to integrate a company's partners in its supply chain. This means that not only one chain between the manufacturer and the supplier has to be managed (material supply) but also different kinds of supply chains, dealing with for example given

information, have to be coordinated. The quality of each of these relations determines the performance and cost-to-supply of the whole supply chain.

If the competitiveness is described by the entire supply chain, then the key factor for success is the integration of the supply chain itself (Fischer, 2007). This entails a lot of difficulties and risks for the companies and their managers. The integration of partners across country borders, sharing sensitive information, implementing standards, etc. is hard to realize in practice. Over the years, managers recognized that integration is not only about logistics and so nowadays integration has become a top management responsibility (Hamilton, 2008).

However, not every supply chain needs the same type of integration.

Managers have to ask themselves, "How much integration is good for my Hannes Dorfmaier supply chain?" and "What is the best approach to integrate stakeholders? (Fisher, 2007).

Fisher differs between four major relationships in supply chains. The main differences are based on varying levels of process integration (Fischer, 2007).

- Traditional purchase order
- Vendor-Managed-Inventory
- Just-in-Time
- Just-in-Sequence

Traditional purchase order does not need any integration of the supplier. It represents the simplest form of integration. If vendor-managed-inventory is applied, the supplier manages the inventory of stored items. Therefore, information sharing systems, like EDI are necessary. The more information is shared, the better the supplier can manage and calculate deliveries, production runs, order volumes, inventory levels, etc. at the buyer's facilities.

It aims at reducing inventory costs, order cycle times and high fill rates. (Yao et al., 2007). Just-in-Time is the next higher level of integration. It aims at preventing the storage of goods at the production plant, meaning they are delivered to the production and processed further right away. Furthermore, the production is based on the market demand. Thereby, only very small safety inventory stocks are held. This needs a perfect logistics strategy and deep integration of the supplier. The desired target is an accelerated order and production flow (Wirtschaftslexikon, 2012). Just-in-Sequence goes one step further. Goods are delivered Just-in-Time and additionally they are distributed in the correct order for assembly. Integration is difficult to be applied in practice, because operating costs for integration itself and improved performance have to be balanced. Furthermore, not every type of integration fits all supply chains. If companies want to stay competitive they have to forget about the standard purchase order and take advantage of integrated supplier relationships (Fischer, 2007).

2.3.4 Supplier Assessment

Supplier assessment is essential to consequently take actions concerning suppliers' performance and / or compliance. The assessment aims at deriving strategies and measures from the obtained data. This data is consequently analyzed and the actual performance is compared with the nominal performance. Financial and, since the 1980s also non-monetary indicators are taken into consideration (Monczka et al., 2008). A system for the measurement of suppliers' performance would be the Balanced Scorecard or the developed Cross-Balanced Scorecard (X-BSC). Within the X-BSC company boundaries are not any longer the limit for a company's strategy (Becker, 2006).

2.3.5 Supplier Development

Based on the results of the supplier assessment, the company (reviewer) can come to the result that the supplier does not fulfill the intended supply relationship. In this case it can be chosen between two actions. Seeking for a new supplier or developing the actual one to

increase supply performance in order to meet the firm's procurement requirements are possibilities. Supplier development is only rational if a long-term relationship is aspired (Becker, 2006; Wagner, 2001).

Frequently used methods are: process-oriented / strategic guidance, financial support, know-how transfer, support with market entry or transfer of human resources (Wagner, 2001). Measures like reinforcement of competition among suppliers are not assigned (Becker, 2006). According to Shrimali (2010), who investigated success factors for supplier development, neither the strategic importance nor striving for a long-term business relation have the greatest impact on the success of supply performance and supplier development. Its success primarily depends on the willingness of the business partners to an open exchange of information and partnership cooperation (Shirmali, 2010).

2.4 Benefits of Effective Supplier Relationship Management (SRM):

Companies that have adopted SRM best practices are realizing a number of important benefits:

Improvements

- Streamlined supplier management processes to reduce internal costs
- Improved ability to concentrate spend with "strategic" partners resulting in further leverage and efficiency
- Accelerated development of supplier capabilities and improvement in value delivery
- Greater supplier accountability for business results reducing non-performance and improving recovery of non-performance costs
- Alignment of supplier agreements with business performance and cost objectives

- Performance visibility to allow for continuous improvement of supplier relationships

2.5 Partnerships in supplier management practices of public procurement:

Researchers such as Lawther and Martin (2005) questioned the traditional way of public procurement and suggested moving towards public procurement partnerships, the complexity of procuring information technology, software and IT-services being one of the reasons for such move. Lawther and Martin (2005)'s analysis contrast the assertion made by Harrigan(1985) and Porter (1985) stating that, adversarial relationships are effective in public procurement settings, where supplier relationships basically serve to facilitate the exchange process and fulfill the contract requirements, relationships cannot be used to intervene with a procurement process and that is supposed to be open and fair to all bidders. Lawther and Martin(2005) further explains that the relational approach, based on the advantages of cooperation, centers on shared resources, joint product development, and process redesign, which improve efficiency (in production and value creation) for both the buyer and seller.

In public procurement, networking with private sector organizations is posited to be more efficient than traditional governance structures according to Kamarck (2000). In the same vein, Kelman (1990) posits that governmental agencies and suppliers are now advocating partnerships between governmental buyers and business sellers to facilitate the implementation of contracts.

Laurent (2000) concurs with the above mentioned views citing that with the increasing procurement of high-tech systems and services, collaborative and relational exchanges will be required to realize the strategic goals for both government agencies and private business.

Laurent (2000) further stresses that, downsizing and declining budgets, federal agencies are strongly motivated to find new ways of doing business focused on "faster, better, cheaper". In

a more recent study, (Adair, J., 1988) addresses effective time management and how to save time and spend it wisely.

2.6 Overview of Inventory Control

Arsham (2006) defines inventory control as the process concerned with the minimization of the total cost of inventory. This means keeping the overall costs associated with having inventory as low as possible without creating problems. Correctly managing inventory control is a process of keeping a delicate balance at all times between having too much and too little in order to maximize liquidity. The costs associated with holding stock, running out of stock, and placing orders must all be looked at and compared in order to find the right formula for a particular business.

To help solve the problems of inventory, mathematical models which describe the inventory situation have been developed and applied in many industries. Inventory control models can be used to describe either replenishment from an outside vendor or internal production. Therefore, inventory control and production planning are often synonymous. Examples of these models are Simple Economic Order Quantity (EOQ) model, EOQ with quantity discounts, Material Requirements Planning (MRP), Newsboy model, Lot size - Reorder point (Q, R) model, and Periodic-Review system (Nahmias, 1997). Which model to apply is determined by several factors: order repetitiveness (i.e., single order vs. repeat order), order quantity (i.e., fixed quantity vs. variable quantity), knowledge of demand (i.e., constant demand vs. variable demand, independent demand vs. dependent demand), inventory review frequency (i.e., periodic vs. continuous review), and knowledge of lead time (i.e., constant lead time vs. variable lead time) (Tersine, 1988). The models are built to answer the basic questions: when to place a reorder and how large an amount to order.

Material Requirements Planning (or MRP) is an inventory system that is computer based and used to manage the manufacturing process. It is designed to assist in the scheduling and filling of orders for raw materials that are manufactured into finished products. A material requirements planning is basically an information system in which sales are converted directly into loads on the facility by sub-unit and tie perimod. The basic philosophy of MRP is the ability to schedule materials that are needed (Plenert, 1999). This leads to greater flexibility in product customization. Materials are scheduled more closely, thereby reducing inventories, and delivery times become shorter and more predictable. MRP schedules and tracks every production or purchasing order. It works on the assumption that every order is potentially unique (Plossal and Wight, 1967). There may be problems with employees who, before MRP, were not disciplined in their record keeping. One of the most obvious shortcomings of MRP usage is its focus on labour efficiency (Plenert, 1999). Cople

An order can be placed only once if the item is a high fashion item with a very short life cycle. For many products, most items are basic goods and are restocked through repeat orders. When repeating orders, a fixed quantity can be ordered whenever the inventory level drops below a certain point (simple EOQ model). Different quantities can be ordered to raise the inventory to a certain level every constant unit of time (S, T) models). If an item is a raw material or a component of which demand is dependent upon finished goods, the order quantity and order timing is determined by the production schedule of the finished goods (MRP). The production schedule is based on a company's own demand forecasting method or demand from customers' orders. Newsboy model and (Q, R) model take uncertainties in demand and lead-time into consideration. The inventory control models mentioned above assume that the inventory levels are reviewed continuously. Periodic-Review system is used when the inventory levels are known only at discrete points in time.

In the late 1970s and early 1980s, Just-in-time (JIT) manufacturing practice was introduced, which also revolutionized inventory management. Many large manufacturers operate on JIT delivery of piece goods in order to reduce inventory carrying costs. A core concept of JIT pursues waste elimination and zero-inventory by practicing small lot orders on a daily basis and increasing communication between suppliers and customers (Fischer, 1995; Germain & Droge, 1998). Studies of JIT impact on inventory performance (Droge & Germain, 1998) revealed that a significant relationship exists between JIT implementation and reduction in inventory level.

Just in time inventory, is an inventory management strategy that is aimed at monitoring the inventory process in such a manner as to minimize the costs associated with inventory control and maintenance. The just in time inventory process relies on the efficient monitoring and forecasting of the usage of materials in the production of goods and ordering replacement goods that arrive shortly before they are needed. This simple strategy helps to prevent incurring the costs associated with carrying large inventories of raw materials at any given point in time.

Manufacturers, over the years have continued to try to improve their forecasting methods such as applying a trailing 13 week average as a better predictor for JIT planning (Gilliland, 2002). Plenert (1993) states that the advantage associated with JIT occurred when large inflation increases resulted in the large increases in the cost of inventories. However current studies have indicated that basing JIT on the presumption of stability is inherently flawed (Ruffa, 2008).

Sconberger and Schiederjans (1984) states that the greatest benefit of JIT is its ability to enforce problem solving. Emphasizing the point that without extra inventory, small ripples in the rate of production or delivery at one stage of the manufacturing stage appears as large

waves, since all hands rally to correct the problem causing the ripple because the next stage of production is being starved of materials. According to Sconberger (1984), since many of the problems associated with production are quality related, each time a problem is solved quality is improved and therefore improving productivity and maximizing profits. The idea of a just in time inventory is not new. Henry Ford of the Ford Motor Company is known to have applied this principle to the purchase of raw materials for automobile manufacturing in the early years of the 20th century (Shingo, 1989). Many small businesses engage in the use of a just in time inventory approach out of necessity. With limited resources on hand, maintaining a small inventory of materials and parts simply makes sense. However, even large corporations today realize that the savings associated with this type of approach can save a significant amount of financial resources, making it possible to redirect those resources toward other revenue generating processes (Ansah, 2011)

There are five key principles of inventory management:

1. demand forecasting,
2. warehouse flow,
3. inventory turns/stock rotation,
4. cycle counting and
5. Process auditing.

Focusing on these five fundamentals can yield significant bottom-line savings.

2.6.1 Demand Forecasting

Depending on the industry, inventory ranks in the top five business costs. Accurate demand forecasting has the highest potential savings for any of the principles of inventory

management. Both over supply and under supply of inventory can have critical business costs. Whether it is end-item stocking or raw component sourcing, the more accurate the forecast can be.

Establishing appropriate max-min management at the unique inventory line level, based on lead times and safety stock level help ensure that you have what you needs when you need it. This also avoids costly overstocks. Idle inventory increases incremental costs due to handling and lost storage space for fast-movers. Sufficient data result in more effective forecasts. The traditional way to forecast demand is to refer to the historical record of demand. All forecasting techniques are characterized by the fact that the more data are observed, the more we modify the estimates of the average demand and demand variability, and the more accurate these predictions can be (Simchi-Levi et al., 2004). Forecasts are never completely accurate. The following rules of forecasting hold (Nahmias, 1997 cited in Simchi-Levi et al., 2004):

1. The forecast is always wrong. It is very unlikely that actual demand will exactly equal forecast demand.

2. The longer the forecast horizon, the worse is the forecast. A forecast of demand far in the future is likely to be less accurate than a forecast of near-future demand.

3. Aggregate forecasts are more accurate.

2.6.2 Warehouse Flow

The old concept of warehouses being dirty and unorganized is out dated and costly. Lean manufacturing concepts, including 5S have found a place in warehousing. Sorting, setting order, systemic cleaning, standardizing, and sustaining the discipline ensure that no dollars are lost to poor processes. The warehouse is a point in the logistics system where a firm

stores or holds raw materials, semi-finished goods, or finished goods for varying periods of time (Coyle et al., 2003).

The principles of inventory management are not any different from other industrial processes. Disorganization costs money. Each process, from housekeeping to inventory transactions needs a formal, standardized process to ensure consistently outstanding results. According to Lambert & Stock (1993), there are three basic functions of warehouse: Movement is necessary to store a product properly. It can be divided into three activities:

- Receiving inbound goods from transportation carriers and performing quality and quantity checks.
- Transferring goods from the receiving docks and moving them to specific storage locations throughout the warehouse.
- Shipping the goods outbound to customers by some forms of transportation. Storage is the second function of warehousing. It can be performed in two different ways:
- Temporary storage means that storing a product, which is necessary for inventory replenishment.
- Semi-permanent storage is used for inventory in excess of immediate needs. It is the safety or buffer stock

The last function of warehouse is the information transfer. When the product is moved and stored, this function occurs at the same time. It is important for the management to have timely and accurate information in order to administer the warehouse activity. The information can cover a lot of things like inventory levels, throughput levels, and data of the customer, facility space utilization and also about the personnel (Lambert, et al., 1993).

2.6.3 Inventory Turns/Stock Rotation

In certain industries, such as pharmaceuticals, foodstuffs and even in chemical warehousing, managing inventory down to lot numbers can be critical to minimizing business costs. Inventory turns is one of the key metrics used in evaluating how effective your execution is of the principles of inventory management.

Defining the success level for stock rotation is critical to analyzing your demand forecasting and warehouse flow.

2.6.4. Cycle Counting

One of the key methods of maintaining accurate inventory is cycle counting. This helps measures the success of your existing processes and maintain accountability of potential error sources. There are financial implications to cycle counting. Some industries require periodic 100% counts. These are done through perpetual inventory count maintenance or though full-building counts.

2.6.5 Process Auditing

Proactive error source identification starts with process audits. One of the cornerstone principles of inventory management is to audit early and often. Process audits should occur at each transactional step, from receiving to shipping and all inventory transactions in between.

By careful attention to each of these critical core principles, your business can increase efficiency and reduce costs.

2.7 Supplier Relationship Management Challenges

Many companies that have transformed their supplier environment in recent years advanced procurement techniques experience a common set of pain-points and challenges:

2.7.1 Increasing reliance on suppliers and exposure to supplier risks:

While risk management Becker, 2006, has received significant boardroom attention, in most organizations, supplier risk remains largely unmanaged while reliance on suppliers and exposure to supplier risk continues to increase dramatically**.** Increased focus on strategic sourcing, outsourcing, and low-cost country sourcing has transferred to suppliers many activities that were previously performed in-house and has simultaneously driven consolidation in the supply base. The result has been dramatically increased reliance on key suppliers, often accompanied by development of more complex supplier interactions with growing numbers of touch-points and dependencies. While this rapid deployment of sourcing has increased most organizations' exposure to supply risks, mechanisms to enable visibility and management of these risks have not kept pace. Many companies do not have a comprehensive view of the risks associated with their supply base, nor do they have a well-thought-out, repeatable approach to managing these risks. Furthermore, it is not clear who in the organization has the responsibility to evaluate and manage supplier risks, what risk conditions should trigger actions or, even what those actions should be.

2.7.2 -Defined post-contract supplier management processes and roles:

Processes and roles post-transaction are ill-defined, often inhibiting further performance improvements, limiting value from supplier relationships, and making performance gains difficult to sustain. In many large and even mid-sized companies, the sourcing discipline is well established and repeatable enabling companies to lock in savings in category after category. However, while typical sourcing methodologies provide guidance leading up to execution of a supplier contract, once a contract is signed and the relationship moves into ramp-up and operation phases, there is remarkably little clarity and definition around what management processes must be in place, who within the company is (and, equally importantly, is not) responsible, how executives should be involved, how management

activities can be conducted in an efficient manner, and how the relationship can be managed. In such environments, supplier relationship activities are little more than a series of reactive firefighting exercises with duplicated effort across the organization, with little management transparency of what actions have been taken or will be needed. The result is relationships that are inefficient and fail to harness the full capabilities of the supplier translating into increased lifetime costs (Becker, 2006).

2.7.3 Suppliers are not accountable for performance – the organization is left holding the bag

While hundreds or even thousands of supplier metrics are tracked and reported, performance problems can persist and organizations often do not recoup resulting costs. While contracting with a supplier after a major sourcing effort often locks in significant savings, it also locks in a number of headaches and challenges. A flaw in most companies' sourcing efforts is that they treat contracts as legal exercises or transactions. This results in contracts that do not hold suppliers accountable, that do not motivate suppliers to improve, and that omit actionable steps the organization can take to improve supplier performance. As a result, Plossal and Wight, 1967 many organizations find themselves with contractual Service Level Agreements (SLAs) that are not aligned with business value drivers, few, if any individuals that understand what suppliers are actually accountable for, and a lack of clarity in what actions should be taken when issues occur. The result is significantly diminished value from the supplier relationships, lost opportunity in recouping costs from ill-performing suppliers, and frustrated employees who know that suppliers are underperforming, but cannot correct the problem (Becker, 2006).

2.7.4 Strategic suppliers are not truly strategic:

Most organizations can not precisely identify which suppliers are truly strategic or even how such strategic supplier relationships should be managed, leading to an inability to effectively

focus resources or realize strategic value from the supply base**.** When managed effectively, strategic relationships can deliver impressive returns and competitive advantage to both companies and their suppliers. Through strategic relationships, companies and their suppliers can drive lower total lifetime costs while allowing suppliers to profit, can reduce risk for both parties, can help create advanced joint capabilities not available to other competitors, and can provide strategic options for additional value for both parties. Sadly, the word "strategic" is often over used when it comes to suppliers. While most organizations are proud to declare that they view some suppliers as strategic, few organizations can describe the implications of making a supplier strategic. (Becker, 2006).

Many organizations have not formally spelled out a set of expectations for what makes suppliers strategic, how such suppliers will be managed differently, and what suppliers must deliver in return to maintain their strategic status. Furthermore, in many organizations, asking 10 individuals to name the strategic suppliers will yield 10 different answers. As a result, many organizations manage strategic and non-strategic suppliers in an undifferentiated fashion, resulting in too much time wasted on non-strategic suppliers while little strategic value is derived from strategic relationships. (Becker, 2006).

2.7.5 Companies should manage suppliers vs. having suppliers manage the organization to extract profits:

Plossal and Wight (1967), in the absence of a clear set of supplier management processes and roles in the organization, suppliers are often able to set the agenda and canvass the organization to build business. Major supplier relationships tend to have multiple facets and touch points – operational, contractual, financial, executive-to-executive, etc. Through multiple touch-points, supplier account teams often "work the relationship", seeking to protect their existing business with the organization and to make inroads into new areas to build further sales. While the organization can gain value from consolidating business with

key suppliers and forming strategic, multi-faceted relationships, such relationships should be defined in a structured transparent manner rather than through a free-for-all sales frenzy, that can distract many individuals across the organization, consume a lot of time, and lead to poor procurement choices.

2.7.6 Diminishing sourcing returns:

While initial aggressive sourcing in a category has for many companies yielded dramatic savings and other benefits, sustaining those benefits and attaining further reductions can be difficult without effective SRM. For many companies that have undertaken sourcing initiatives, initial efforts have unlocked large savings opportunities, often delivering savings of 15% or more. However, re-sourcing categories where significant savings have already extracted often yields disappointing returns and often has a very poor ROI. This is because once spend is consolidated, specs rationalized, excess supplier profit margins removed, and work offshored (where applicable), sourcing offers little on-going opportunity. In order to unlock the next layer of savings, companies are finding that they must address the structural and process inefficiencies in supplier relationships and collaborate with suppliers to improve joint capabilities (Plossal and Wight, 1967).

2.7.7 Employees are not equipped with supplier management skills and knowledge:

Procurement brings to bear resources with transactional or sourcing skill sets, operations brings to bear resources with functional and people management skills – none are a good fit for day-to-day supplier management**.** In most organizations, the personnel responsible for on-going supplier management are the same individuals who drove strategic sourcing and those who managed internal functional departments before they were outsourced. In both cases, such individuals often lack both the knowledge and the skills required to manage supplier relationships effectively. Procurement personnel are trained in sourcing methodologies, negotiation, and other procurement skills. Operational personnel have a deep functional

understanding and can be excellent people managers; however, they often lack the understanding of procurement best practices. The result is that the best skills and knowledge are not brought to bear in managing supplier relationships. In addition, these legacy skill-sets combined with individuals' desire to do what is best for the company can actually prevent suppliers from being held accountable for performance and can increase internal costs – employees that are accustomed to being responsible for a function's performance will often take on the responsibility of solving issues and will apply internal resources even when the function has been outsourced. The result is that supplier accountability is diminished and internal costs can rise.

2.7.8 Formal supplier development programs are lacking or ineffective:

Formal programs for supplier development often do not exist limiting the organization's ability to create win-win value improvements with the supply base. When a company's suppliers develop capabilities to perform valuable new services, expand coverage to regions where the company has locations, improve processes and technology to deliver better performance and lower total cost, both the company and the supplier benefit. However, most companies lack effective programs for supplier development. Without formal criteria for selecting the suppliers for development, pre-defined development "tracks" that accelerate specific development techniques, and standardized supplier development management tools, companies must rely on the blunt instruments of contract negotiation and performance penalties to drive improvement.

2.7.9 Everybody has become a vendor manager:

Inefficiency introduced as too many employees spend time on unnecessary or redundant interactions with suppliers. As companies outsource more activities to suppliers, they often find that not all the internal work goes away – an alarming number of employees across the organization end up spending time and effort managing and interacting with the supplier.

This overhead is exacerbated by the duplication of supplier management effort that typically occurs across different corporate functions, business divisions, and geographies. Because internal roles and responsibilities are not clear, because many aspects of the relationship are ill-defined, because vendor management is seen as a viable job in departments where headcount reductions routinely occur, and because suppliers make every attempt to spread their relationship footprint, too many employees become involved in performing supplier management tasks that are often redundant, inefficient, unnecessary, or even competing. In practice, this can translate into dozens or even hundreds of employees involved with tracking supplier activities, dealing with issues, interacting with supplier personnel, etc. This "relationship creep" can lead to increases in retained cost of up to 10%.

2.7.10 System support for end-to-end supplier management is not effective:

Many organizations lack the systems capabilities needed to support day-to-day supplier management across the supplier life-cycle**.** Plossal and Wight, 1967, the result is excessive manual effort, lack of a single view of supplier impact on the organization, and reduced ability to improve supplier performance. While many large organizations have deployed systems for e-procurement and ERP systems to manage purchasing transactions and accounts payable (AP), supplier data remains fragmented between corporate systems and desktop hard drives and system support for SRM across the entire relationship life-cycle is often minimal. Instead of a single source of supplier information, most companies have "islands" of data with minimal integration; purchase / AP data along with supplier master data often resides in an ERP system (though it typically requires significant cleansing and structuring before it can be used); supplier performance data often resides in one-off standalone spreadsheets on user desktops and is rarely linked with contracts and their service level arrangements which are typically stored in a stand-alone contract management system. Data pertaining to supplier relationship governance, supplier development activities, etc. can reside on various desktop

hard drives and email in-boxes. Forming a single picture of a supplier relationship is not easy. In addition, very few companies have systems that support day-to-day SRM activities such as relationship governance, service level arrangements management, joint process improvement, and supplier stratification. Where such system capabilities exist, they are fragmented leading to inefficient processes.

To address these challenges, companies are adopting SRM capabilities and revisiting their processes, organizations, and systems to manage their new supply environments.

2.8 Conceptual framework

Figure 2.2 presents the supplier management framework developed in this research. The framework proposes that supplier management practices will have an impact on organizational performance both directly and also indirectly through competitive advantage. supplier management practice is conceptualized as a five-dimensional construct. The five dimensions are Supplier preselection, supplier negotiation, supplier integration, supplier assessment and supplier development (Becker, 2006). The research framework posits that an effective supplier management practices will result in an organization performance such as increase supply quality and at the same time to lower procurement costs, improve cooperation between the supplier and the company or even to achieve a deeper integration of the supplier into the value-added process.

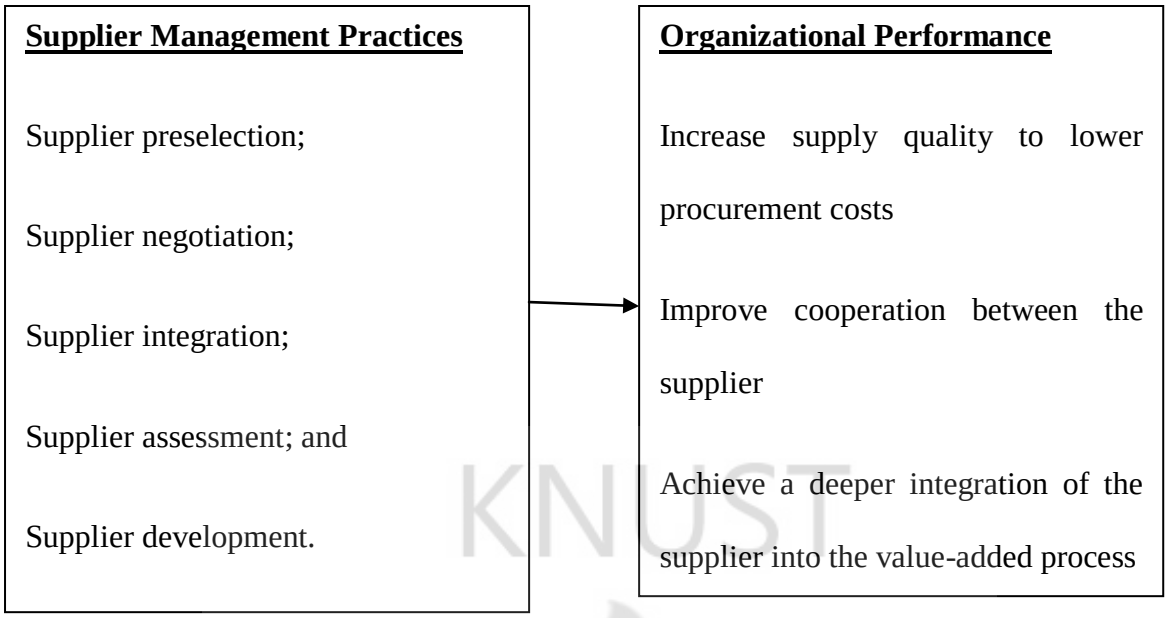


Figure 2.2: Conceptual framework

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This research does not seek to repeat principles as mentioned in available published literature but rather to outline their influence on the practice and procedures being adopted by Cocoa Processing Company. It is to assess the outline of Supplier and Stocks management and to identify the challenges faced in the supplies management in answering the question of why the frequent shortages on the supply of production materials. Departments involved in the management of Suppliers and stocks control management at Cocoa Processing Company, include the following departments: (1) Accounts, (2). Production, (3). Procurement, (4) Marketing, (5) Engineering (6). Audit Department (7) Human Resources, (8) Confectionary and (9) Cocoa Factory Department

The techniques and the procedures that were used to carry out the research have been presented in this chapter. The chapter therefore explains the research design that was adopted, and identifies the data requirements of the research as well as the sampling procedure for data collection and analysis.

3.2 Research Design

The research strategy is a general plan of how to go about answering the research question Sanunders (1998). Such plan takes into consideration the objectives of the research, the sources of data and the constraints that maybe encountered in the course of the research. According to Ramenyi et al., (1998), having a clear research strategy is an important step in research as it provides the following benefits:

(1) It facilitates communication and allows shares of common experiences among researchers;

(2) It ensures that an acceptable logical structure is being used; and

(3) It institutionalizes conceptual frameworks for communication, rules of reasoning, procedures and methods for observation and verification.

The main methodology used was case study. The rationale for using a case study stems from its suitability for both qualitative and quantitative research (Yin, 1985). A case study research design is appropriate for studies that require in-depth information about a phenomenon within a limited period where a large scale survey may not produce the true results (Bell, 2004).

The case study approach was chosen over others because it also provides an appropriate research design well suited to this study where "contemporary events" are examined (Frankfort-Nachmias and Nachmias 1996 cited in Quansah, 2009). Denscomber (1998 cited in Bell, 2004) confirm that a case study design is very useful in investigating a contemporary phenomenon from a selected case. Thus, a case study research design can be used for studies that require detailed information about a phenomenon within a limited time span.

3.3 Data collection methodology

Saunders et al., (2003) describes the means by which we have chosen to depict the issues underlying the choice of data collection methods in terms of the research process "onion". They argue that before coming to the central point of which method to choose, there are important layers of the onion that need to be peeled away.

The research adopted the mixed method. The mixed approach of research design refers to the combination of qualitative and quantitative strategies for the collection and analysis of both

forms of data (Tashakkori and Teddlie, 2010). According to Tashakkori and Teddlie (2010), mixed methods are not a design, but just a description of how most people would go about researching any topic they wanted to find out about. The strength of this approach is that, the biases inherent in one could neutralize or cancel the other methods (Creswell, 2003). Tashakkori and Teddlie (2010), further opines that, the mixed method when employed can result into a full representation of phenomenon. Mixed method encourages holism, which more richly, automatically, and appropriately represents the true complexity of behaviour as they occur in natural science context (Johnson et al., 2005; Tashakkori and Teddlie, 2005; Weisner, 1996; Toshikewa, et al., 2008, all cited in Tashakkori and Teddlie, 2010). The complementary nature of qualitative and quantitative methods employed simultaneously or sequentially, is for a great value, in bringing a wider range of value to strengthening and expands our understanding of a phenomenon.

Three strategies can be identified under the mixed approach (Creswell, 2003). They are; the sequential procedure, in which the researcher seeks to elaborate the findings of one method with another method. The second is the concurrent procedure, in which the researcher converge qualitative and quantitative data in order to provide a comprehensive analysis of the research problem. The third is the transformative procedure, in which the researcher uses theoretical lens as an overarching perspective within a design that contains both qualitative and quantitative data.

The research makes use of the concurrent procedure as it allows the investigator to collect qualitative and quantitative data at the same time during the study and then integrate the information in the interpretation of the overall result.

3.4 Research instrument

The study adopted a case study approach where questionnaire was used as an instrument for data collection. Towards that end, a semi-structured questionnaire being a mixture of quantitative and qualitative was developed. The questions were design to cover the scope and objectives of the research.

The questionnaire was structured to incorporate lessons from literature review. The questions were clear and straightforward in four important aspects; simple language, common concepts, manageable tasks and widespread information. So, the questionnaire was designed in a simple table format that requires the respondent to tick their answer in the appropriate box so as to save time when answering the questions.

3.5 Data Collection Methods/Techniques and Sources of Data

In order to answer the research questions, secondary and primary data were gathered. The secondary data was obtained from published and unpublished documents, reports, the Internet and journals. The secondary data was used in the in the first, second and third chapter. The secondary data was also used to support or otherwise the findings from the field data collection (primary data).

During the gathering of the primary data, personal interviews were conducted with some of the respondents for further clarification and semi-structured questionnaires administered to those various concerned staff with fair idea on the Suppliers and Stocks control management at Cocoa Processing Company due to their role, status and the department they belong. The questionnaires were administered personally with the help of some research assistants. These departments include (1) Accounts, (2). Production, (3). Procurement, (4) Marketing, (5) Engineering (6). Audit Department (7) Human Resources, (8) Confectionary and (9) Cocoa Factory Department. They gave their opinions on the questions raised in the questionnaire.

3.6 Sample size determination

The population of the research study was 263 as shown in the table A below. Collection of evidence is the cornerstone of research strategy and the essence of empirical research relies on the production and accumulation of evidence to support its findings Remenyi et al (1998).

Table 3.1: Sample size determination

		Population	Sample Size
Departments	Accounts	18	5
	Production	105	29
	Procurement	14	4
	Marketing	16	4
	Engineering	21	6
	Audit Department	17	5
	Human Resources	10	3
	Confectionary	11	3
	Cocoa Factory Department	51	14
	Total	263	73

The sample size that represents the population for the case study at Cocoa Processing Company Limited was calculated based on the following formula (Kish, 1995)

$n = N/ [1 + (N*e^2)]$

Where:

e = margin of error= 0.1

N =The population size = 263

The total population considered from the list obtained from Cocoa Processing Company Limited (CPC Ltd) totaling 263 staff population consisted from 9 Departments namely Procurement, Production, Accounts /Stores and Audit (Figure 2) who by their role and status would provide the data for a fair idea of Suppliers and stocks management at CPC Ltd. (1) Accounts, (2). Production, (3). Procurement, (4) Marketing, (5) Engineering (6). Audit Department (7) Human Resources, (8) Confectionary and (9) Cocoa Factory Department.

Applying the above formula, the sample size is:

n = The sample size=73

3.7 Sampling Technique

In order to reflect the diversified population size, the best sampling technique to use is the convenience technique. According to Malhotra & Birks (2006), convenience sampling is a typical non-probability sampling technic whereby the targeted sample population is readily available and accessed conveniently. By adopting this technique, the researcher hands out the questionnaire to the respondents who are present at the data collection venue and collects them immediately after the respondents answered them.

Zikmund (2003) explained that the use of the convenience sampling technique is quick in term of responses and also very economical for the researcher. The targeted respondents of this research are all the staff from the various departments with the CPC (See Table 3.1). The targeted respondents are likely to have knowledge and rich experience in the management of suppliers and stocks level control due to their schedule. The random mode of distribution of questionnaires made it equally likely for any of the 263 population to be part of the 73 respondents.

3.8 Data Analysis

The data collected from secondary and primary sources were analysed in two forms to provide answers to the research questions. The primary data collected was crosschecked to ensure reliability, accuracy, completeness and consistency. Primary data resulting from this quality procedure will then processed and analyzed using Statistical Product for Survey Solutions (SPSS Version 16.0) to generate information that was presented by inferential and descriptive statistics. The results and data interpretation were provided within the framework of the set survey objectives.

Finally, the data was analysed from the entrepreneurs' perspectives, thus making comprehensive statements and analytical descriptions about the meanings of statements that will be made by the respondents and institutions themselves.

3.9 Profile of the study unit

The Cocoa Processing Company factory in Tema commenced in 1963 by the Drevici Group of companies from Germany. However, it was never fully completed until June 1972 when the factory was transferred to the Management of COCOBOD. That same year it began to export cocoa products such as cocoa butter, cocoa cake, and cocoa liquor. In 1981, the factory was incorporated (as a limited liability company) into the Cocoa Processing Company Limited (CPC). It had remained a subsidiary of COCOBOD until 14th February 2003 when the company was listed on the Ghana Stock Exchange. The Company's Golden Tree chocolates and Confectionery products have attained local and international recognitions by winning both local and foreign awards such as the 'Good Corporate Citizenship Trophy' in Ghana, the 'Monde selection competition in Brussels Belgium' and the 'Golden Europe award for quality'. Ghana has traditionally exported almost its entire crop of cocoa beans for processing to foreign chocolate production plants. Cocoa makes up 20% of Ghana's total exports.

This policy changed in mid-2003 with a new administration under President John Agyekum Kufuor setting the goal of broadening the Ghanaian cocoa business by investing in national cocoa processing facilities. The immediate target of the government is to process at least 40% of the annual cocoa crop of 500,000t (2004–2005 figures). The broadening of the Ghana cocoa processing appears to have been what triggered CPC's expansion project with automated machines. In the early 2004, CPC decided to update and expand as the first step of consolidating the cocoa processing business inside Ghana. The German company MAN Ferrostaal AG (MAN) was commissioned in 2004 to update and expand the facilities of CPC. The processing capacity of the existing plant was increased from 25,000metric tons to 65,000metric tons of cocoa beans a year (phased in over the period up until 2008). MAN selected Buhler AG (Chocolate & Cocoa) of Switzerland as the technical partner who handled the project. The contract with Buhler AG comprised the design and supply of a complete cocoa processing facility from the raw bean to the finished cocoa mass. (Deliverables fully integrated into CPC's normal operation).

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

The purpose of this chapter is to present the analyzed findings of the study based on the methodological steps taken in chapter three. The case study was based on the suppliers and stocks management at Cocoa Processing Company Limited. The data as sited by Polit et al., (2001) will have to be analyzed in order to organize, provide structure and to elicit meaning from the data to address the research questions posed in chapter one. The discussions therefore include demographic information, how Cocoa Processing Company Limited manages suppliers and stocks management, the outlined challenges encountered and measure of suppliers and stocks management principles. All the questions were developed to suit the Respondents ratings as a range, ticking of options that best fit opinions and where necessary, personal interviews were conducted for a lot more data.

4.2 Demographic Information

4.2.1 Gender of respondents

Figure 4.1 shows the distribution of respondents by gender. It is significant to note that CPC Ltd is a manufacturing entity with about 88.9% being males as against 11.1% who are females. This observation can be traced to the fact that staff are operatives of whose engagements are laborious and feminine challenged. The male dominance, as shown in Figure 4.1 could therefore be considered as a normal phenomenon in such environment.

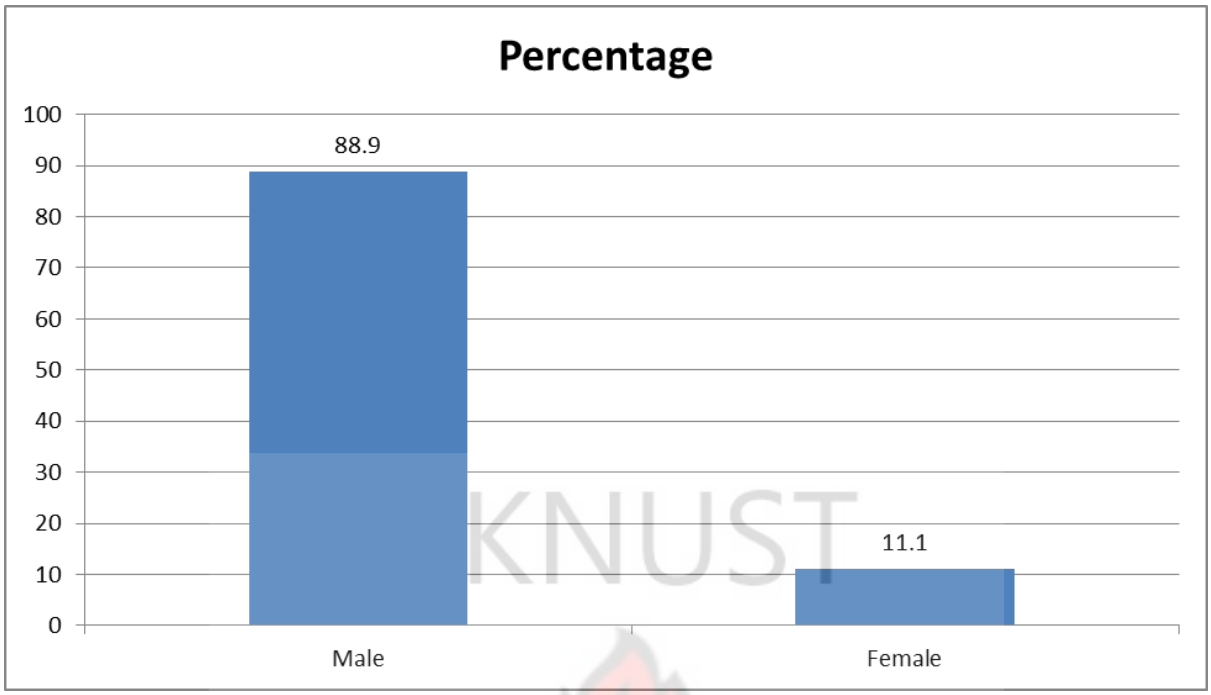


Figure 4.1 Gender of the respondents

Source: Field Data, 2014

4.2.2 Age of respondents

The data gathered from the respondents revealed that majority of the responedents that is 66.7% were between the age brackets of 46-55 years as against 27.8% who were between the ages of 35-45 years and 5.6% who are between the ages of 26-35 years.

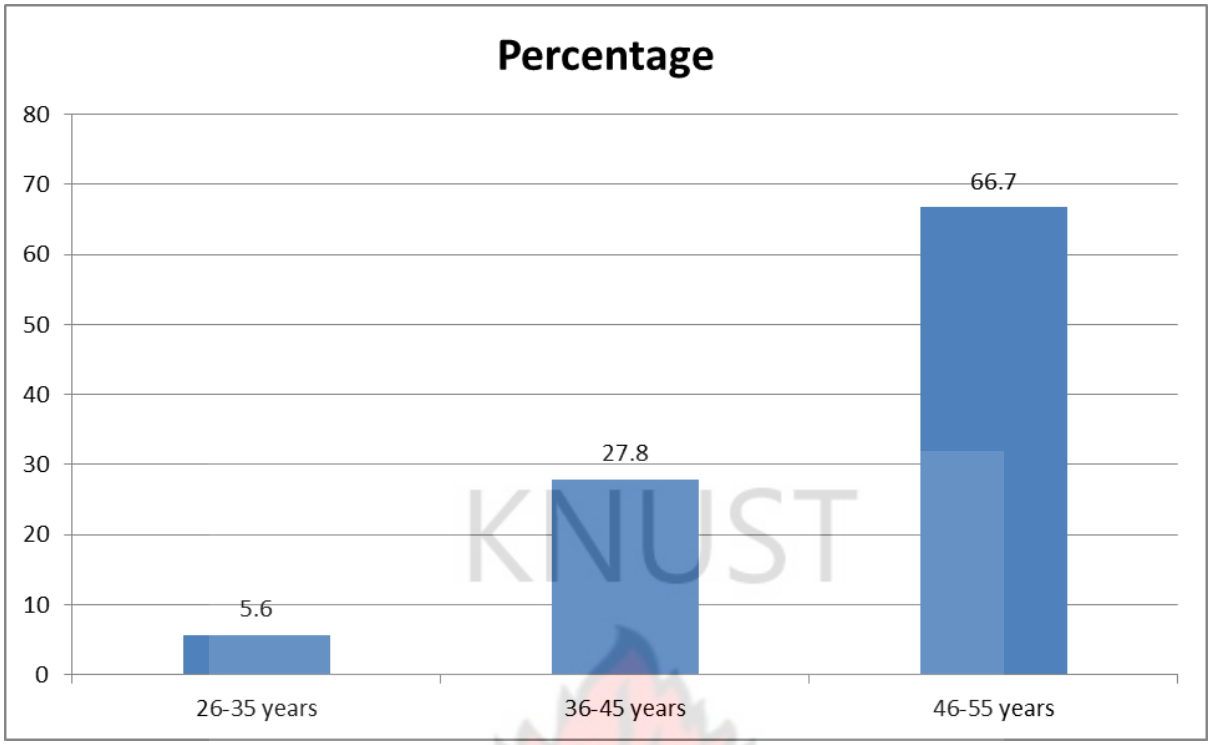
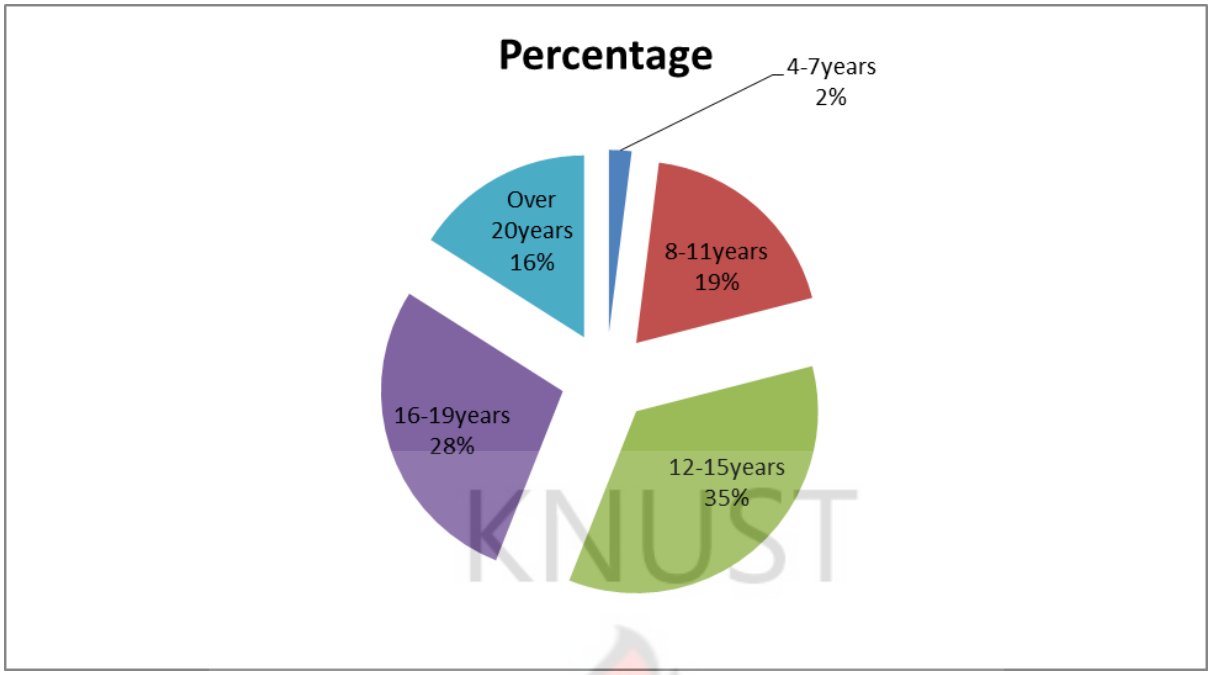


Figure 4.2: Age of respondents

Source: Field Data, 2014

4.2.3 Years of experience

The study depicts that 100% of the respondents have been with CPC Ltd for at least four (4) years. Figure 4.3 shows that majority (35%) of the respondents have been in the company for a period between 12-15 years as against the least number of respondents (2%) who have been in the company for a period bwteen 4-7 years. It can be deduced therefore that the data collected for the study was from respondents who have enormous experience about the operations of Cocoa Processing Company. This data can therefore be relied upon to make meaningful inferences. Similarly, Shrimali (2010), carefully sellected interviewees who had at least 3 years of experience in supplier development and had managed at least three supplier development projects in her study. She infer that all interviewees had strong, in-depth knowledge of supplier development programs. Collectively, they had diverse experience with different supplier firms.



Figue 4.3: Years of experience.

Source: Field Data, 2014

The findings show that the study captured a full representation of the various ranks within the sampling and interviews. All units within the company were duly covered during the research. This futher strenghten the findings of the reseach as the sample is very much representative of the population.

4.3 Major Supplier and stocks management principles adopted and utilized by Cocoa Processing Company Limited

The data gathered from the respondent's shows that the company has an Internal Tender Review Committee who meets often on Procurement issues. However, respondents interviewed admitted contentiously that the Accounts department was devoted to handling supplier and stocks management, how they report and what actually triggers the organization's production materials' sourcing is through the Procurement section. Similarly, Sichinsambwe, (2011), also, found that the majority of the firms he surveyed had active

programs of 6 months to over 4 years and had created permanent organizational units to handle supplier relationship programs (Sichinsambwe, 2011).

The study revealed that the initiation of supplier and stocks management is triggered by whether it is relevant to business objectives, for competitive advantage, to introduce a new state of the art product and/or assumed to be part of operational activities. The study indicated in Figure 4.4 that 90% of respondents totally agreed that stocks were received and issued out using computerized software. This is inconsistent with the findings of Ansah (2011), who found that the internal control systems for tracking of inventory at Ghana Water Company are manually operated.

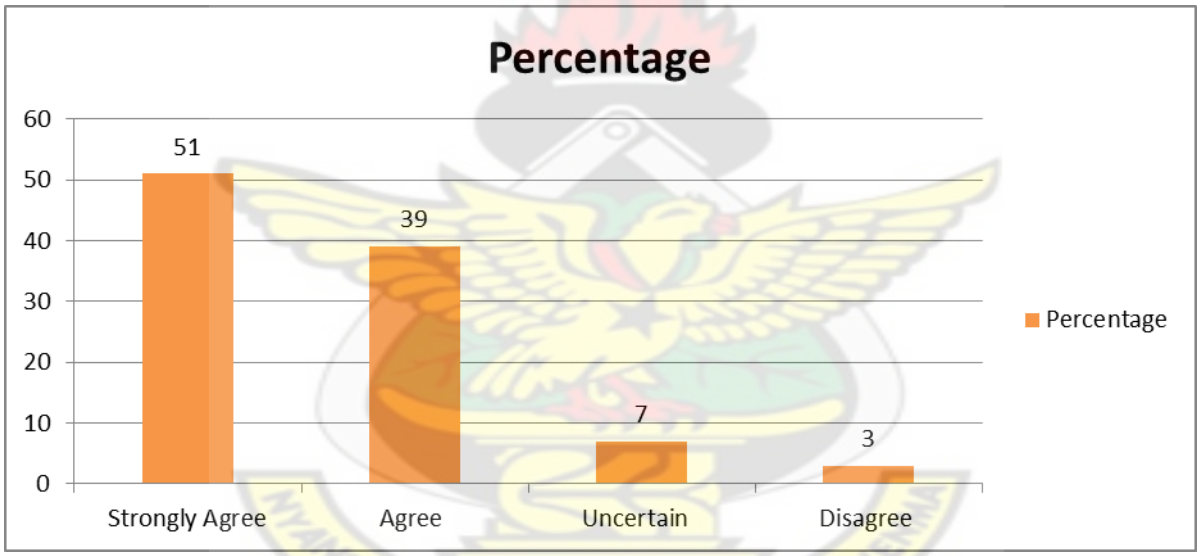


Figure 4.4: Stocks received at stores are computerized and accessible through a software

Source: Field Data, 2014

Figure 4.5 shows that CPC Ltd sometimes or do not pay most Suppliers for stocks, works and services within 30days. A total of 39% strongly agreed while 45% agreed to this assertion.

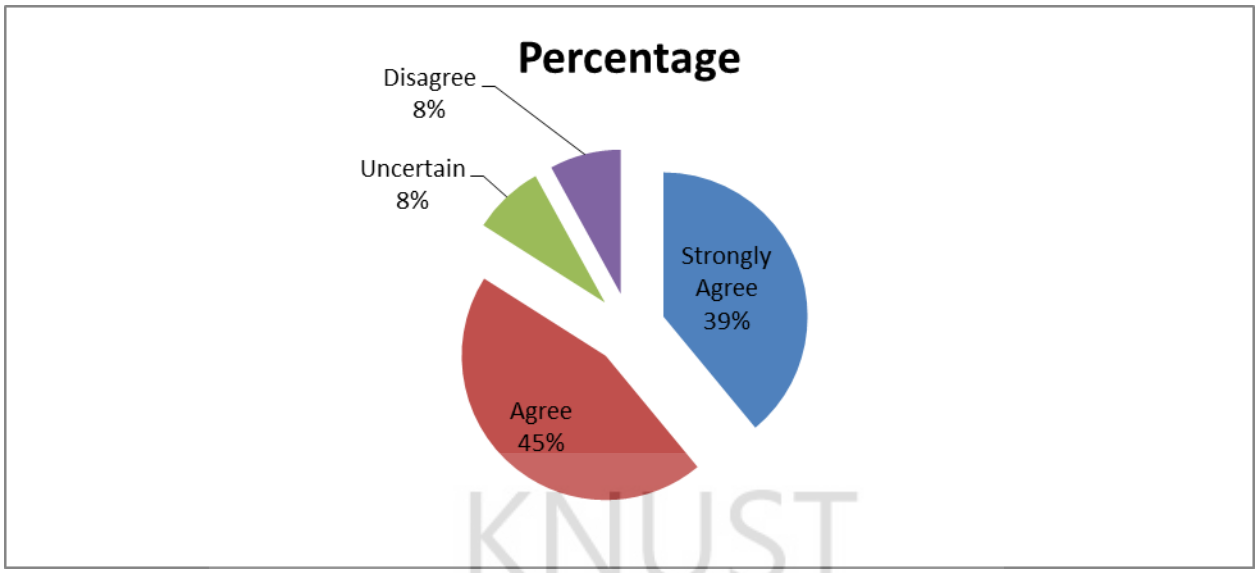


Figure 4.5 CPC Ltd do not pay most Suppliers for stocks, works and services within 30days

Source: Field Data, 2014

Figure 4.6 also shows that a total of 36% of the respondent agreed while 14% strongly agreed that more than 50% of the company's' production inputs are imported. The effect of delay in honoring payment and dependence on import are discussed under the challenges of supplier and stock management practices.

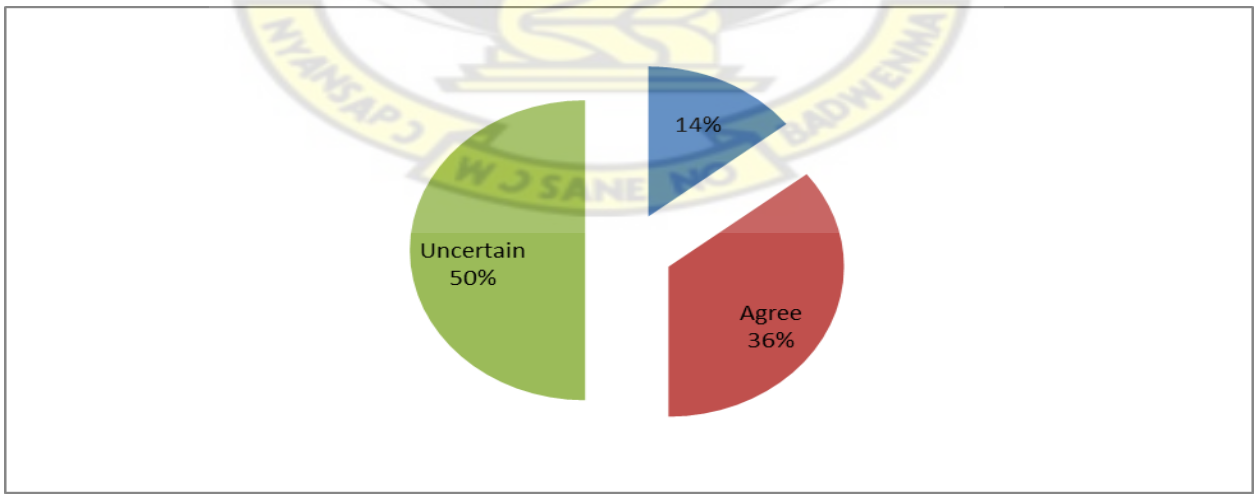
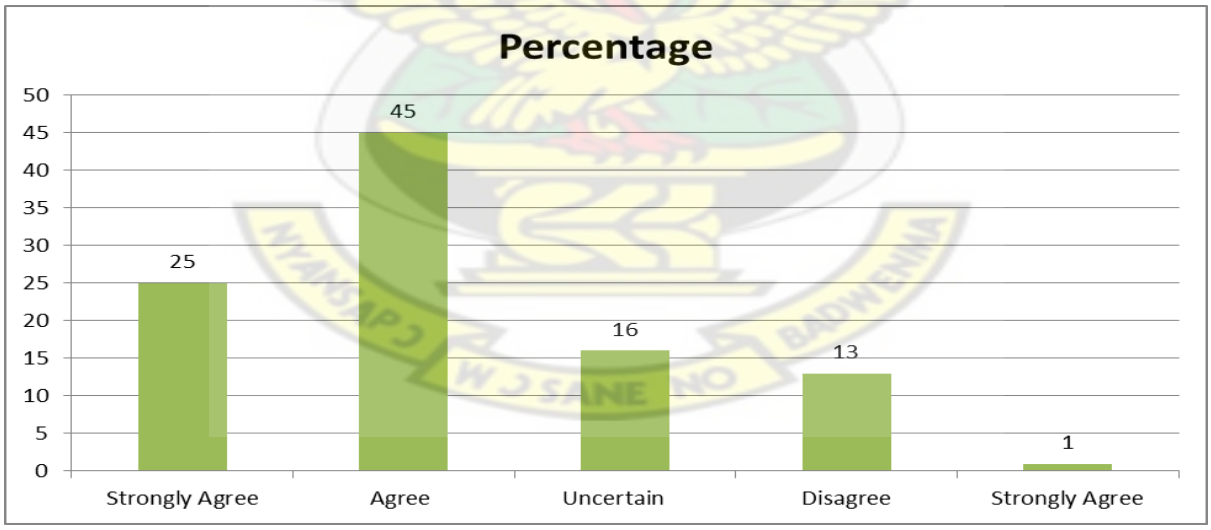


Figure 4.6: More than 50% of the company production inputs are imported

Source: Field Data, 2014

Approximately 70% respondents totally agreed to tally application and good safety at stores as illustrated in Figure 4.7. The personal interview revealed that the software information was only accessible only at the Stores and not made available to end users, Management and suppliers. This meant that the Management and the internal Tender Review Committee could not have quick access to vital information to help make informed decisions on reordering stock at the right time, stock control especially on the fact that more than 50% of inputs were imported and therefore required lead time. This finding is centrally to that of Mensah et al., (2014), who found that some suppliers have even been given warehouses within the company to stock and manage materials on behalf of Kasapreko Company Ltd.in Ghana. This according to CPC has significantly reduced cost of operation and reduces lead time. The study revealed that there is the free flow of adequate information through established channels internally to make information available exactly when it is needed by any member of the supply chain which has been instrumental to their progress.



Figur 4.7: There is careful allocation of bins in conformity with tally software for easy receiving and issuing out of stocks for safety at stores

Source: Field Data, 2014

4.4 Challenges encountered in the application of supplier and stocks control management principles during the implementation.

CPC Ltd was still faced with the challenge of non-availability or shortages of production materials including the main raw cocoa beans. This was due to the appearance of some foreign cocoa processing companies like Barry Callebaut, Cargill (Gh) Limited, Afrotropics Cocoa Processing Company Limited and the Kumasi based ADM Cocoa processing company that was bought in 2013 by Cargill (Gh) Limited. It was worth noting that these foreign companies takes advantage of the Government's Free Zone incentives which offer zero rates for all the production inputs of free zone operatives. Unlike CPC Ltd (which is also a free zone operative) that has to go into special arrangement with COCOBOD, the majority shareholder, for credit sales of the beans, some of these rich multinational processing companies can afford to pay for the cocoa beans in advance for more than a year's supply. The other challenge was the barter arrangement between the Government of Ghana and the Chinese's to pay part of Ghana's contribution of USD60M out of the USD622M BUI Dam project cost with some regular supply of cocoa beans. So, although CPC Ltd production facilities were upgraded to produce 65,000mts, availability and affordability of production materials was and is still causing the company to produce way below the capacity.

As high as 95% of respondents indicate that the cost of production has increased due to the above findings and suppliers not paid within stipulated credit period makes them embed interest related additional cost to the company as indicated in Figure 4.8 below.

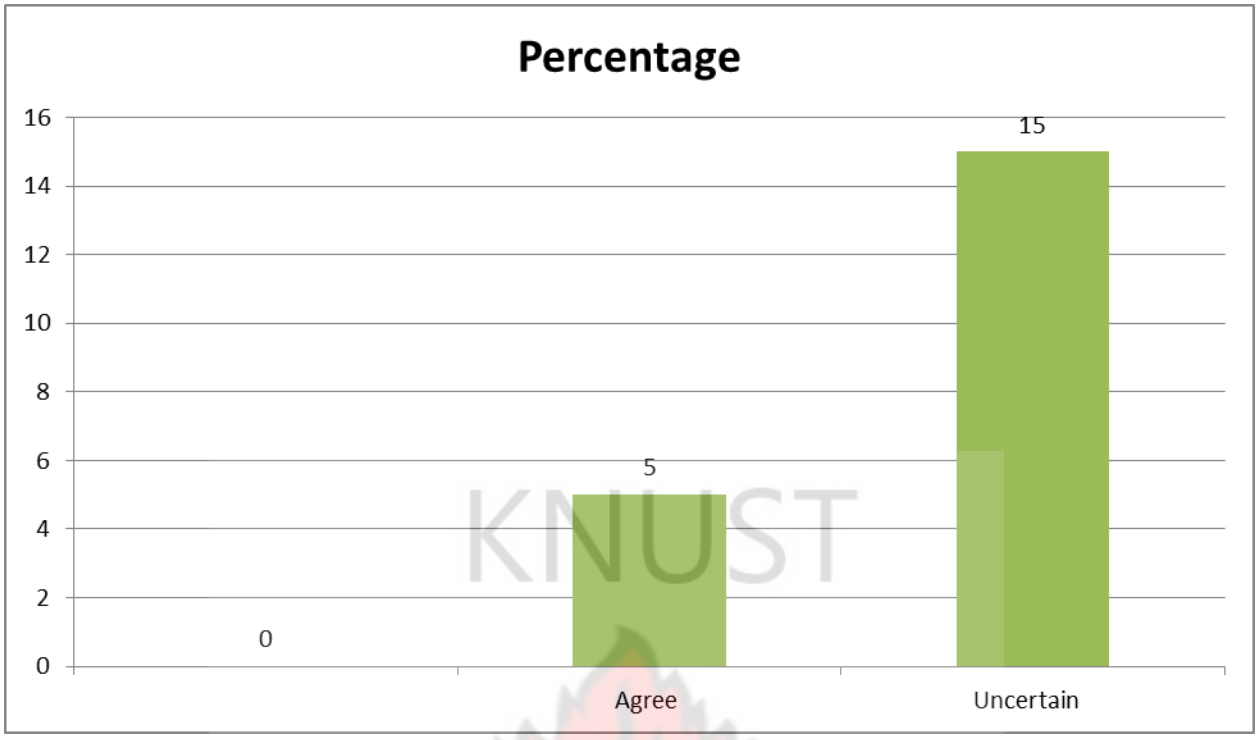


Figure 4.8: Effect of delay in payment to Suppliers affect the cost of materials and production cost

Source: Field Data, 2014

It was also revealed that the rampant power outages have called for more supply of diesel for powering their industrial generators and boilers and not forgetting the water supplier and other utility tariffs have also intensified the Company's cost of managing suppliers and stocks.

Figure 4.6 shows that more than 50% of the company's input materials are imported. Respondents revealed that congestion at the port results in the untimely delivery of imported inputs due to congestion at the Tema port (see Figure 4.9). This means regular review of stock levels and minimum stock levels should be increased and reordering at the right time to be able meet to production targets.

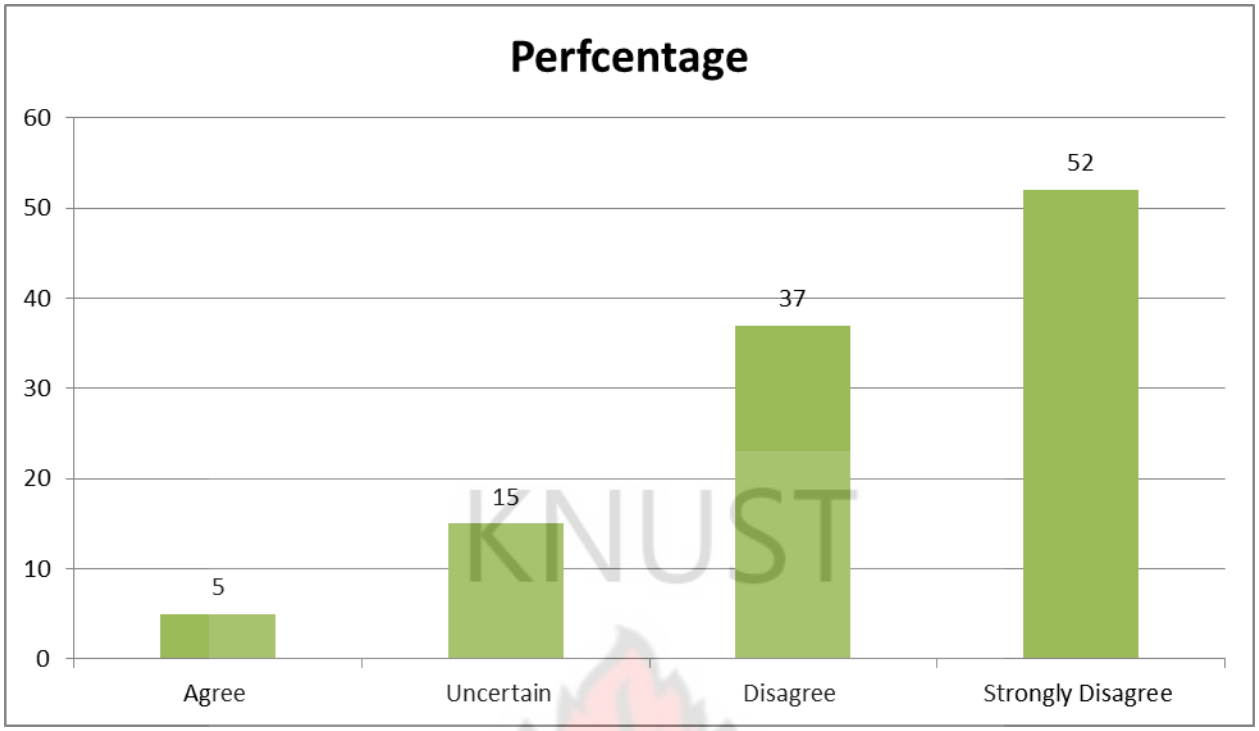


Figure 4.9: Do products received from suppliers arrive within the delivery dates

Source: Field Data, 2014

4.5 Documented for the future learned lessons

It was realised that lessons learnt were not documented, experience gained by redeployed staff to stores from accounts and assessment of all possible risks of managing Suppliers and stock were not communicated. This according to respondents was the problem of Store staff not given the opportunity to stay longer years on the job before redeloyed.

Figure 4.8 depicts that CPC Ltd sometimes or do not visit Suppliers with the indication of more than 60% respondents (Managers of Suppliers and their Stock) admitting to that fact. This is a bad indication of Supplier relationship and even to know of the existence of Suppliers. This is centrally to the findings of Mensah et al., (2014), that due to its strategic supplier partnership relationship and investment in suppliers, the supply of raw materials considered as critical to continuous operations is secured. In fact, their findings indicates that suppliers and the company have adopted an open book concept to continuously explore areas

of product and cost improvement, thereby selling product at competitive prices as compared to their competitors.

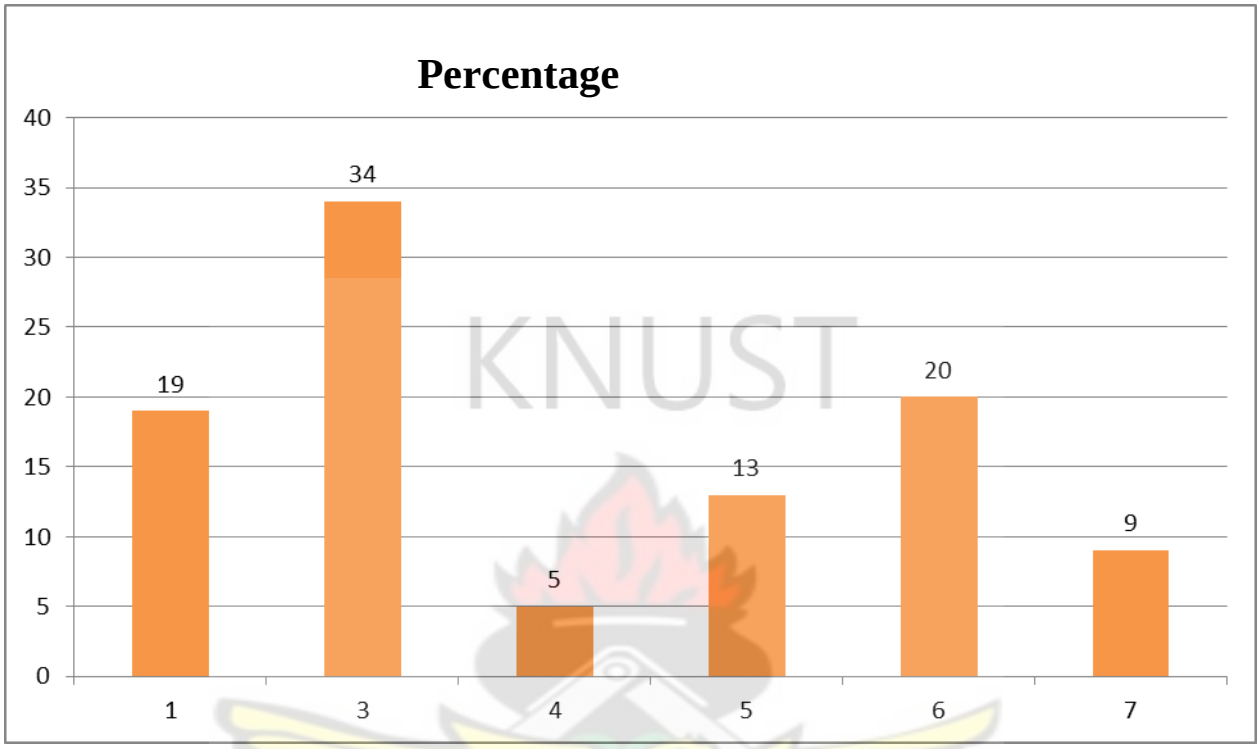


Figure 4.10: How often does CPC Ltd visit the supplier's premises to help to improve its performance

Source: Field Data, 2014

Chapman (1997) believes that an organisation needs to build a good people from within, ensure they have tools and training to take the task of projects. Approximately 66% of respondents believe in this as shown in Figure 4.9 below. The impact of equipping workers through training and development would be the enhancement of organisational memory ie. The storage and preservation of intellectual capital which would be seen in CPC Ltd's Human Resource capital (the knowledge that the employees possess and generates) and Structure capital (the knowledge captured in systems and structures). Knowledge acquisition and sharing would increase and CPC Ltd would be the ultimate winner.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The primary objective of this study (Chapter 1) was to assess the outline of Supplier and Stocks management as used at CPC Ltd, the challenges, and to come out with the best practices that are economical, efficient and effective as compared to other previous methods. In an attempt to deal with the objective of the study, a methodology was set in chapter three in which research tools like questionnaire and personal interview to elicit relevant data to advance the cause of answering the research questions. The findings of the study has been vividly analyzed and discussed in chapter four.

5.2 Conclusions

It is almost impossible to find an organization that does not use, transform, distribute or sell materials in one form or another. Research confirms that Suppliers management and inventory control is an essential part of organizations that is correlated to corporate success and failure.

5.2.1 From the study analysis of CPC Ltd, it is clearly established that there is a misconception between the Production Department who are the **end users** of stocks/inventory and the Stores who are the **custodians** of the stocks/inventory as to who is to raise purchase requisition (PR) to prompt the Procurement Department to start sourcing to have a good lead time for supply of stock for Production. The Accounts Department is in charge and operation of stores.

5.2.1 The Company policy has the stores (the custodians of the supplies and stocks level monitors) being managed by the Accounts Department who transfer their staff to man the stores. Answers from interview have it clearly that these staffs are not allowed to stay long at these positions before redeployed and from the analysis, 90% of these staff are not having the requisite qualifications for supplier and stocks management.

5.2.3 Most of the respondents believe Cocoa Processing Co. Ltd on the part of Supplier relationship rarely develops or visits Suppliers and delays their payments and thus locks up their capital. Faithful Suppliers are not motivated or rewarded

5.2.4 CPC Ltd do not rely on traditional Suppliers but on whether Supplier's sample meets sample test results and Suppliers not performing are sieved out during a bi-annual Supplier evaluation.

5.3 Recommendation

It was evident in the findings that majority of CPC Ltd's Supplier and inventory management are triggered by needs that are relevant to the business objectives. Ideally, as a listed Company on the Ghana Stock Exchange (GSE), one of CPC Ltd's major business objectives should be to safeguard the interest of her Shareholders. The interests are; the generating of appreciable profits that would make it possible for periodic declaring of dividend and also appreciating of their share value. In this vein, the following recommendations for improvement have been adapted from the findings for consideration and adoption.

5.3.1 CPC Management should put in place qualified personnel in charge of stores inventory control management to improve on stocks level control system accessibility through a software device. This software would be accessible for inputting information and prompting the Two hundred and sixty three (263) established population members involved in the management of Suppliers and inventory through their emails, intranet and smart phones

to ascertain economic order quantities (EOQ) on just – in – time basis considering lead times in order not to hamper productivity.

5.3.2 Management should consider engaging a Materials Manager to work closely with all the departments in handling all production stocks or materials management. Accounts department are to manage cash flows and the materials management section in charge of stores would manage materials flows. Technically, materials cannot be known by Accounts. Accountants getting involved in materials requisition and storage in cases where there is corruption in the finance and management of materials, it cannot be detected easily.

5.3.2 There should be a well planned Supplier repayment and motivation or development scheme in place for faithful and dedicated Suppliers to derive the fruitful benefits of the good supplier relationship including quick response in efficient delivery of quality supplies and logistics. The procurement activities in the various departments of CPC Ltd should be harmonized for the avoidance of delays associated with overlapping of responsibilities.

5.3.3 Management should consider appraising the Tender Review Committee (TRC) to be vibrant in order that it ensures international standards (ISO) in procurement transactions, effective and efficient periodic market surveys, stocks receipts and issues are treated in the stocks accounts and taking into account all lessons learnt and analyzing same for Management to take informed decisions.

5.3.4 There is the need for effective dissemination of information to entire staff relating to procurement processes and procedures to enhance employee understanding and appreciation of CPC Ltd's procurement needs.

5.3.5 With regard recommendation for future research, I believe a bigger sample size than the seventy three out of a population of Two hundred and sixty three (263) would provide an outcome of greater validation of the conclusions reached now. Although the sample size was quite small, it was carefully selected (as explained in chapter 3 of this study) and some findings in chapter 4 vividly agreed with reputable Managers' responses during personal interviews.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI.

SUPPLIER AND STOCKS MANAGEMENT PRACTICES AT COCOA PROCESSING COMPANY LIMITED

Dear Respondent,

This questionnaire is part of my MSc Procurement Management thesis. With this research, I intend to assess the outline of supplier and stocks management practices and the challenges faced at Cocoa Processing Company Limited, Tema. All your answers will be treated confidentially at all times.

The questionnaire has three to seven – likert scale answers. Please feel free to respond to all questions or possibly write down your opinion by the question.

You may please contact the Researcher for any enquiry or clarification pertaining to the questionnaire on **0207398658**

SECTION A : Demographic Information

Sex: Male Female

1. Age: 26-35years 36-45years 46-55years 56-65years
2. Recent qualification:……
3. Rank/Grade/Position and in which Department?

   ……

4. How long have you being working in this role?

   1-3years 4-7years 8-11years 12-15years 16-19years Over 20years

5. When was the last time you had a refresher training on suppliers and stocks control level management?

   1year 2years 3years 4years 5years Over 6years

SECTION B: General Questions

7. How effectively is CPC Ltd conforming to the Public Procurement Act 2003 (Act 663)?

Not important			**Neutral**			**Very important**

Using the following scale, answer the following questions:

1 = totally disagree, 4 = neutral, 7 = totally agree

8. There is an Internal Tender Review Committee who meets often on Procurement issues

1 2 3 4 5 6 7

9. CPC Ltd do not pay most Suppliers for stocks, works and services within 30days.

1 2 3 4 5 6 7

10. Effect of delay in payment to Suppliers affect the cost of materials and production cost

1 2 3 4 5 6 7

11. Are your suppliers easy to be replaced by others if found not to be performing in CPC Supplier evaluation?

1 2 3 4 5 6 7

12. If construction contracts are to be awarded, are bid and performance bonds considered?

1 2 3 4 5 6 7

13. Do products received from suppliers arrive within the delivery dates.

1 2 3 4 5 6 7

14. Stocks received at stores are computerized and accessible through a software

1 2 3 4 5 6 7

15. Do you have Acceptance committee of Audit, Stores, Security and Procurement for inbound logistics to ensure Suppliers products meets CPC's sample test results

1 2 3 4 5 6 7

16. Internal User departments who raise purchase requisitions are satisfied with the attention and dedication that purchasing shows for their problems with the supplier's products.

1 2 3 4 5 6 7

17. There is close, personal interaction between CPC Ltd and the suppliers at multiple levels.

1 2 3 4 5 6 7

18. There is careful allocation of bins in conformity with Tally software for easy receiving and issuing out of stocks for safety at stores

1 2 3 4 5 6 7

19. More than 50% of the Company's production inputs are imported

1 2 3 4 5 6 7

20. Due to Ghana's port congestion, challenges in internal funding and stock control monitoring system, Lead Times have always been a key factor the Company considers

1 2 3 4 5 6 7

21. When preparing Purchase Order (PO), do procedures exist to ensure that the best combination of quality, total price, value for money and on time delivery are obtained?

1 2 3 4 5 6 7

Please estimate how frequently the following practices are applied on suppliers.

Use the following scale:

1 = never, 4 = sometimes, 7 = always

22. Due to our efforts to achieve higher transparency, the Company shares relevant information with Suppliers (production costs, level of quality, accounting).

1 2 3 4 5 6 7

23. Do CPC Ltd deal promptly with Suppliers complaints with good communications skills

1 2 3 4 5 6 7

24. Does CPC Ltd provide suppliers with extensive feedback about its performance.

1 2 3 4 5 6 7

25. How often does CPC Ltd visit the supplier's premises to help to improve its performance?

1 2 3 4 5 6 7

26 . CPC Ltd involves the suppliers in her new product development process.

1 2 3 4 5 6 7

27. CPC Ltd recognizes and rewards these suppliers' achievements.

1 2 3 4 5 6 7

28. Price is only a minor consideration when negotiating with the supplier.

1 2 3 4 5 6 7

29. CPC Ltd workers empowerment through training, free hand to perform and access to ICT would greatly enhance or promote best supplier and stock control management

1 2 3 4 5 6 7

30. Is CPC Ltd ISO compliance?

1 2 3 4 5 6 7

Any suggestions as to how Cocoa Processing Company Limited can improve upon its supplier and stocks control management operations?

……

……t

Thank you for your time and opinions!

APPENDIX 2 Tables

Table 1

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	16	88.9	88.9	88.9
	female	2	11.1	11.1	100.0
	Total	18	100.0	100.0	

Table 2

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26-35 years	1	5.6	5.6	5.6
	36-45 years	5	27.8	27.8	33.3
	46-55 years	12	66.7	66.7	100.0
	Total	18	100.0	100.0	

Table 3

CPC Ltd do not pay most suppliers for stocks, works and services within 30days

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	5.6	5.6	5.6
	4	1	5.6	5.6	11.1
	5	4	22.2	22.2	33.3
	6	8	44.4	44.4	77.8
	7	4	22.2	22.2	100.0
	Total	18	100.0	100.0	

Table 4

Effect of delay in payment to Suppliers affect the cost of materials and production cost

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	5.6	5.6	5.6
	2	1	5.6	5.6	11.1
	4	4	22.2	22.2	33.3
	5	3	16.7	16.7	50.0
	6	6	33.3	33.3	83.3
	7	3	16.7	16.7	100.0
	Total	18	100.0	100.0	

Table 5

Internal user departments who raise purchase requisitions are satisfied with the attention and dedication that purchasing shows for their problems with the suppliers products.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	5.6	5.6	5.6
	3	1	5.6	5.6	11.1
	5	4	22.2	22.2	33.3
	6	6	33.3	33.3	66.7
	7	6	33.3	33.3	100.0
	Total	18	100.0	100.0	

Table 6

There is careful allocation of bins in conformity with tally software for easy receiving and issuing out of stocks for safety at stores

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	5.6	5.6	5.6
	4	2	11.1	11.1	16.7
	5	2	11.1	11.1	27.8
	6	6	33.3	33.3	61.1
	7	7	38.9	38.9	100.0
	Total	18	100.0	100.0	

Table 7

More than 50% of the company production inputs are imported

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	16.7	16.7	16.7
	3	2	11.1	11.1	27.8
	4	1	5.6	5.6	33.3
	5	4	22.2	22.2	55.6
	6	4	22.2	22.2	77.8
	7	4	22.2	22.2	100.0
	Total	18	100.0	100.0	

Table 8

How often does your company visit the suppliers' premises to help to improve its performance?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	5.6	5.6	5.6
	3	2	11.1	11.1	16.7
	4	11	61.1	61.1	77.8
	5	2	11.1	11.1	88.9
	6	2	11.1	11.1	100.0
	Total	18	100.0	100.0	

Table 9

CPC Ltd workers empowerment through training, free hand to perform and access to ICT would greatly enhance or promote best suppliers and stock control management

	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	5.6	5.6	5.6
4	3	16.7	16.7	22.2
5	2	11.1	11.1	33.3
6	5	27.8	27.8	61.1
7	7	38.9	38.9	100.0
Total	18	100.0	100.0	