

**LEAN PROCUREMENT AND SUPPLY CHAIN PERFORMANCE  
AT SAFARICOM LIMITED**

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FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF  
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## **DECLARATION**

This research project is my original work and has not been submitted for a degree in any other University.

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The research project is submitted for examination with my approval as the University Supervisor.

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## **DEDICATION**

I dedicate the project work to my entire family, for the support and especially for the encouragement and cheering me up throughout the period. The co-operation, inspiration and spiritual support from my workmates and to my supervisor for the understanding, patience and guidance. May God bless you all abundantly

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## **LIST OF ABBREVIATIONS**

<b>CAK:</b>	Communication Authority of Kenya
<b>CEO:</b>	Chief Executive Officer
<b>CIP:</b>	Continuous Improvement Programs
<b>DHL:</b>	Document Handling Ltd
<b>ICT:</b>	Information, Communication and Technology
<b>JIT:</b>	Just in Time
<b>MRP:</b>	Material Requirements Planning
<b>SET:</b>	Social Exchange Theory
<b>SPSS:</b>	Statistical Package for Social Sciences
<b>TQM:</b>	Total Quality Management
<b>USA:</b>	United States of America



## **ABSTRACT**

In various organizations, lean has not only improved procedure, reduced inventory and enhanced ergonomics, but it has also allowed the company to fine-tune its chemistry and keep pace with changes in demand. However, despite its many benefits and continued implementation Safaricom Limited, the company has many times experienced challenges in relation to their service delivery. The study therefore sought to establish the lean procurement practices used in Safaricom Limited; to establish the relationship between lean procurement and supply chain performance at Safaricom Limited and to determine the challenges facing lean procurement in Safaricom Limited. This research study used a case study design. The target population of this study comprised of the staffs working in Safaricom headquarters. This research study used stratified random sampling to select 20% of the target population and the sample size was 37 team leaders. The study used both primary data and secondary data. Secondary data was obtained from the Safaricom annual reports and financial statements. Primary data was collected using questionnaires. The quantitative data in this research was analyzed by descriptive and inferential statistics using Statistical Package for Social Sciences (SPSS version 20). Descriptive statistics includes mean, frequency, standard deviation and percentages. Data was then presented in tables, charts and graphs. Content analysis was used in processing of qualitative data results were presented in prose form. Regression analysis was also used to establish the relationship between lean procurement and supply chain performance at Safaricom Limited. The study established that there is a positive significant relationship between lean procurement and supply chain performance. The study also established that Safaricom was lean procurement practices like involvement and empowerment of employees, supplier-firm relationship, pull system, total quality management, continuous improvement, e-procurement and 5S. The study recommends that telecommunication companies in Nairobi should ensure that they engage services of qualified individuals who have the required expertise in the implementation of lean procurement practices that can assist in making informed lean procurement. In addition, the government of Kenya should also formulate policies to improve e-procurement.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Cost efficiency and better productivity has always been a major issue in procurement but in the hype of today's ever increasing competition in the market, Lean procurement has become indispensable area which invariably brings forth some semblance of efficiency in various companies. It is imperative to note that strategic procurement approaches in the contemporary business environment are susceptible to world class business options which are embraced by the successful companies in the market (Lyson, 2000).

The just-in-time (JIT) philosophy, pioneered by Toyota in the 1960s, is known by different names such as stockless production (Hewlett Packard); short cycle manufacturing (Motorola); and lean manufacturing (Boeing). It originated from a need to produce a greater variety of products in smaller batches in a repetitive manner with the same production facilities. Its secondary objectives were to eliminate: waste, inefficient activities, and work-in-process inventory at every stage of the value chain. The concepts of JIT and total quality management (TQM) have evolved into the lean and six sigma management paradigms (Bhasin & Burcher, 2006). The lean paradigm is built on the techniques and methodologies its JIT and TQM forerunners. This is particularly true for procurement and sourcing functions where JIT procurement or lean procurement is the dominant methodology.

Along with Toyota's success and the increasing awareness of lean, a global transformation was triggered in almost every industry to lean manufacturing and supply

chain philosophy methods (Liker, 2004). Lean has successfully been applied in other industries than the automobile, such as the service industry, healthcare and government, and continues to evolve and spread (Bowen & Youngdahl, 2006). For instance, Liker (2004) emphasizes that lean also efficiently can be applied in all business processes, including procurement. Additionally, supplier relationships are of high importance in lean for its success and generally, the supplier plays a vital part in order to survive in the increasingly competitive market place.

In turbulent times Safaricom Limited has to be kept lean, capable of taking strain to take up opportunity, and unless changed organization tends to be slack, and avoid unpleasantness. Change in the environment has necessitated Safaricom's continuous monitoring of its business, lest it falters, blurs, or becomes obsolete. While the other companies in the telecommunication industry companies have tried to be better competitors by undergoing many banners such as total quality management, reengineering, right sizing, restructuring, cultural change, and turnaround, to cope with a new and more challenging market environment, Safaricom has been adopting lean practices like Continuous Improvement (CIP)/Kaizen, six- sigma, Just in Time (JIT) and supplier relationship.

### **1.1.1 Lean Procurement**

Lean procurement is conceptualized differently amongst organizations. It can be considered a philosophy, a work culture, a technique, a management concept, a value, a methodology or an ethos (Lysons, 2000). Throughout, a common thread exists, that of continuous and forced learning within and between organizations. Like any inter-

organizational system, it requires high levels of commitment, discipline, reliability and support from a firm's supply chain partners to make it successful (Harland et al., 2007). Those organizations that implement lean procurement do so in their own unique ways, implying that no two lean procurement systems are exactly the same. These differences are attributable to each firm's different variables and problems.

According to Boyer and Sovilla (2003) some of the common lean procurement practices include; Kaizen, Kanban systems and Supplier development. A long term philosophy, processes, people and right culture are essential to convert an organization into a lean enterprise. Long term relationships with suppliers are important elements of lean supply (Handfield, 1993). According to Harland et al. (2007) today's demand driven supply chains require lean procurement methods whose goals are: to eliminate waste in all procurement cycles, prevent shortages, reduce inventory investment, reduce procurement lead time and cost, increase inventory turnover and ensure customers' satisfaction. These methods ensure greater efficiency and standardization of procedures. Thus, applying lean methods to procurement function and purchasing activities can dramatically increase a company's performance and profits.

However, companies may fail to effectively implement lean procurement practices due to lack of system thinking (Lysons, 2000). Employees may not be willing to adapt to new methods and may exhibit resistance to change. The organization may as well lack the internal capabilities to facilitate education and training, lack of clear responsibility in the supply chain, lack of management and suppliers' engagement, insufficient, planning monitoring and control may also inhibit the effective implementation of lean

procurement. Lack clarity over the supply chain and the struggle to localize and differentiate value from waste may hinder effective implementation of lean procurement methods. It may also be costly to implement lean procurement methodologies in an organization as it requires extra resources (Harland et al., 2007).

### **1.1.2 Supply Chain Performance**

A simple definition of good supply chain performance is to get the right product to the right place at the right time at the lowest cost. Those suppliers that develop the processes and systems to support that performance goal will be more highly valued and be treated as a premium partner in the network (Mertins & Jochem, 2001). To decide what actions to take to ensure service delivery, it is necessary to measure supply chain performance. Reliable and efficient supply chain is to have the right quality, in the right quantity available at the right place at the right time at the expected cost (Boyer & Sovilla, 2003). Supply Chain performance can be viewed as both quantitative and qualitative.

Many output performance measures are easily represented numerically such as number of items produced, time required to produce a particular item and number of on-time deliveries (orders) (Harland et al., 2007). However, there are also many output performance measures that are much more difficult to express numerically, such as, customer satisfaction, quality of training and product quality (Mertins & Jochem, 2001). A minimum level of output is often specified, although the relationship between the costs required to achieve different output levels is not generally considered. What is the added value or cost if the product is delivered early? Likewise, what are the costs if the product is delivered late? Additionally, output measures are based on short, finite time horizons.

Thus, resources affect the output of a supply chain, and the output of the supply chain is important in determining the flexibility of the system. Output performance measures must not only correspond to the organization's strategic goals, but must also correspond to the customers' goals and values, since strategic goals generally address meeting customer requirements (Bonavia & Marin, 2006).

In today's competitive business environment, customers require dependable on-time delivery from their suppliers for both goods and services. In the short term, delivery deviations and in particular late deliveries are disruptive to supply chains (Wilson & Roy, 2009). Lead times have serious effects on the coordination among supply chain partners. Therefore, lead time reduction can be viewed as a coordination enabler in supply chain. Lead time reduction has been viewed as an investment strategy (Shah & Ward, 2003).

According to Esben, Gjerdrum and Mahad (2011) improving supply chain performance is a continuous process that requires both an analytical performance measurement system. It also requires a mechanism to initiate steps in order to meet key performance indicators. Esben, Gjerdrum and Mahad (2011) also describe "key performance indicator accomplishment" as the ability to connect planning and execution, building steps for realization of performance goals into routine work. There are a number of set of variables that capture the impact of logistic supply chains on revenues and costs of the whole system when measuring supply chain performance. These variables seen as drivers of supply chain performance are derived from supply chain management practices. Managers need to identify and continuously improve them, through continuous planning, monitoring and execution. It is noted that in this performance management cycle, there

are many challenges, both in performance measurement and their improvement (Esben, Gjerdrum & Mahad, 2011).

Individual measures of supply chain performance have been classified into four categories: quality, time, cost and flexibility. In addition, they have also been grouped as quality and quantity, cost and non cost, strategic, operational, tactical focus and supply chain processes (Bhasin & Burcher, 2006). However, a lot of measurement systems still lack a strategic alignment, a balanced approach and systemic thinking. Managers find difficulty in systematically identifying the most appropriate metrics. To address this problem, the balanced scorecard and activity based costing methods have been used to evaluate supply chain performance.

### **1.1.3 Safaricom Limited**

Safaricom Ltd is a leading mobile network operator in Kenya. It was formed in 1997 as a fully owned subsidiary of Telkom Kenya. In May 2000, Vodafone Group Plc of the United Kingdom acquired a 40% stake and management responsibility for the company. Safaricom employs over 1500 people mainly stationed in Nairobi and other big cities like Mombasa, Kisumu, Nakuru and Eldoret in which it manages retail outlets. Currently, it has nationwide dealerships to ensure customers across the country have access to its products and services (Safaricom, 2014).

As of January 2010, Safaricom boasts a subscriber base of approximately 12 million, most of whom are in the major cities - Nairobi, Mombasa, Kisumu, Garissa and Nakuru. In addition, Safaricom Limited has 6500 employees working in Nairobi, Mombasa, Kisumu, Garissa and Nakuru. Its headquarters are located in Safaricom House, Waiyaki

Way in Westlands, Nairobi. It has other offices in the city center in I&M building, Kenyatta Avenue, on Kimathi Street and at Shankardass House - next to Kenya Cinema Moi Avenue (Safaricom, 2014).

Competitive strategy has given Safaricom Limited an advantage over its rivals in attracting customers and defending against competitive forces. Competitive advantage has been very important in Safaricom performance in emerging markets. Many communication companies in Kenya have lost sight of competitive advantage to grow and compete with domestic and global competitors.

In the year 2011, Safaricom CEO portrayed his quest to see that cartels which has been operating in the company dismantled. The CEO focused at cementing the presence of Safaricom in the hearts and minds of customers and hence he presented what he called “Safaricom 2.0”. It is a new leaner, meaner and more efficient Safaricom. However, at this time there were some investigations of corrupt practices on some senior employees, which led to the sacking of the Chief Technical Officer and the Chief Information Officer (Safaricom, 2014).

Safaricom has strengthened its leadership in the mobile market over the past five years, increasing its market share from 57% in 2002 to 80% as of December, 2008. In addition, Kenya Revenue Authority named Safaricom as the top tax payer for the 2011/2012 financial year. Over the years, the company's profits and sales have been increasing due to its innovation. The company was the first one to develop a mobile phone-based money transfer service, M-Pesa. In addition, the company has always been a pioneer in innovation in the telecommunication industry in Kenya. Further, the company pioneered



partnership with other organizations like banks in the use of mobile phone-based money transfer service, M-Pesa. Additionally, the company has implemented and has been using best practices in procurement. Safaricom operates 22 of its own retail stores located within high traffic areas all over the country including major international airports. Mobile handsets, connection packages, scratch cards, modems, routers and accessories are available for sale. Safaricom contracted DHL Worldwide Express Limited to effectively distribute its products and services countrywide safely and securely to the dealer network. This strategy assigns all aspects of shipping, tracking, and distributing handsets, connection packs and scratch cards to DHL. On the other hand, China's largest network and telecommunications equipment supplier, Huawei Technologies, in July 2008 signed a multi-million dollar shilling contract with Safaricom to provide 3G equipment (Safaricom, 2014).

## **1.2 Statement of the Problem**

Lean procurement aims at achieving perfect work flow, while minimizing waste and being flexible and able to change (Howard, 2004). Implementing lean procurement therefore will help; eliminate waste, reduce cycle and flow time., increase capacity, reduce inventories, increase customer satisfaction, eliminate bottlenecks, improve communications in general core activities of the organization and general improvement of efficiency and effectiveness in functional operations.

Studies have been done to show the role of lean production system. According to a case study of Kodak Canada Inc., Kodak's Director of Global Manufacturing and Logistics, steered the company towards adopting lean productions in 1998, by adopting Kodak

Operating System (KOS). Lean therefore has not only improved procedure, reduced inventory and enhanced ergonomics, but it allows the company to fine-tune its chemistry and keep pace with changes in demand Bhasin and Burcher (2006) note that less than 10 per cent of lean implementations in the UK are considered successful.

In Kenya, lean procurement has been used in the manufacturing industry and also in the service sector. A study conducted by Kabuga (2012) on Lean procurement methodologies used by large scale manufacturing firms in Nairobi established that the methodologies adopted by large scale manufacturing firms influenced lean procurement and positively aided manufacturing firms to possess competitive advantage. The methodologies adopted by large scale firms included lean thinking, e-procurement, good supplier relationship management and the control movement of materials using the Kanban system and the benefits of implementing lean procurement methodologies also include eliminating waste in all procurement cycles, reduce lead time, reduce inventory, reduce cost, improved customer satisfaction and improved demand management.

However, despite its continued implementation of lean thinking and procurement in Safaricom Limited, the company has many times experienced challenges in relation to their service delivery. These challenges include M-pesa delays, has run of stock, especially phones, in its retail outlets and poor network.

According to Wilson and Roy (2009), lean procurement implementations can suffer through lack of support from suppliers, carriers companies, engineering, top management and also through low product quality and lack of communication. Research has

highlighted that the most pressing issues are; the lack of support from suppliers, low levels of supplier sophistication and geographical distance (Achanga et al., 2006).

Various studies have been conducted in Kenya in relation to lean production and procurement. For instance Nyakagwa and Muthoni (2014) did a study on factors affecting implementation of lean procurement in multinational enterprises: a case study of British American Tobacco (Kenya) and established that integrating suppliers and creating mutual benefits by continuous improvements and development with suppliers give significant opportunities for lean procurement. On the other hand, Keitany and Riwo-Abudho (2014) did a study on the effects of lean production on organizational performance in the Flour Producing Company In Kenya and established that improving management style and involving all employees at all levels, as well as better inventory management leads to a more efficient practice of lean production. However, most of these studies have been conducted in the manufacturing study. This study therefore sought to answer the question: What are the lean procurement practices used in Safaricom Limited? What is the relationship between lean procurement and supply chain performance in Safaricom Limited? What are the challenges facing lean procurement in Safaricom Limited?

### **1.3 Objectives of the Study**

The objectives of the research were;

- i. To establish the lean procurement practices used in Safaricom Limited
- ii. To establish the relationship between lean procurement and supply chain performance at Safaricom Limited

iii. To determine the challenges facing lean procurement in Safaricom Limited

#### **1.4 Value of the Study**

This study was of benefit to various stakeholders the telecommunication industry, to the government of Kenya and policy makers ad to academicians and researchers.

To the management of Safaricom Limited as well as other companies in the telecommunication industry in Kenya, the study outlined how the use of lean procurement influences the supply chain performance.

To the government of Kenya, CAK and policymakers, the study provides information on the use of lean procurement in the telecommunication industry that can be used to formulate policies to improve lean procurement so as to enhance supply chain of companies in the telecommunication industry.

To future researchers and academicians, the study provides a basis upon which other studies can be conducted on lean procurement and supply chain performance. This was provided on the suggestions for further studies. The study also provides information that can be used as literature review to identify knowledge gaps in future studies.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter reviews literature in relation to the study research questions. The chapter begins with an overview of the concept of lean procurement, followed by a theoretical review, lean procurement practices, effect of lean procurement on supply performance, challenges facing lean procurement and summary of literature.

### **2.2 Lean procurement Practices**

Building an organization with leaner procurement practices is a continuous improvement which requires strong integration and synchronization across the supply chain blocks (Supplier, Logistics, customers) with the consumer demand and each organization must be equipped with right capabilities (people, methods, systems) (Bonavia & Marin, 2006). Lean procurement practices are often expressed as ideals to meet demand instantaneously with perfect quality and no waste. Some lean procurement methodologies are discussed below.

Involvement and empowerment of employees is an imperative requirement and important for success (Hines *et al.*, 2008). While implementing lean, it should be reinforced to the policy makers that lean is not just a set of tools and techniques but at its heart are the people (Shah & Ward, 2003). Achanga *et al.* (2006) state that if employees are to make any contribution which set them apart from competition, work needs to be stimulating and satisfying while providing an opportunity to develop their skills to perform well.

Continuous improvement is the continual pursuit of improvement in quality, cost delivery and design. It ensures organization achieve competitive advantage. Kaizen could be seen as a culture of sustained improvement aiming at eliminating waste in the entire organization and involves everyone in a common aim to improve work without huge capital investments (Mertins & Jochem, 2001). Efforts focused on the reduction of waste are pursued through continuous improvement or kaizen events, as well as small incremental improvements. The purpose of CIP is the identification, reduction, and elimination of suboptimal processes; its emphasis on incremental, continual steps rather than giant leaps; and the core principle of CIP is the, self-reflection of processes or feedback.

According to Harland et al. (2007) six-sigma has become a synonym for improving quality, reducing waste and improving customer loyalty and achieving bottom line results. It institutionalizes a rigorous, disciplined fact based way to deliver through process improvement and process design project. Six -sigma is the practice of building quality into the process rather than relying on inspection. It also refers to the theory of employees assuming responsibility for the quality of their own work eliminating any form of waste through ensuring zero defects. Six Sigma's goal is to define processes and manage those processes to obtain the lowest possible level of error (Handfield et al., 2009).

In lean procurement, JIT provides a cost effective delivery of only the necessary quantity of parts at the right quality, at the right time and place. This is accomplished through the application of elements which require total employee involvement and teamwork. This

approach is also interchangeably called lean (Bonavia & Marin, 2006). It is both a philosophy and a method of procurement planning and control.

The key to lean procurement is visibility. Suppliers must be able to "see" into their customers' operations and customers must be able to "see" into their suppliers' operations. In Porters model of competitive advantage, Porter has identified buyers and suppliers as two of the five forces. Porter (1986) says that suppliers are an essential part of the company, impacting the ability of the firm in achieving competitive advantage. The relationship between buyer and supplier is based on a long-term orientation incorporating trust and commitment, with the buyer helping financially and technologically to address some of the supplier's operational problems if required. Liker and Choi (2006) states that lean companies have more focus on increasing their supplier's capability in order to reduce cost and improve quality.

### **2.3 Lean Procurement and Supply Chain Performance**

Lean procurement is becoming a strategy method for gaining competitive advantage and even for survival, not just for manufacturers, but also for service companies since adding value and removing waste is no longer an option for companies.

Lead time is the time taken by the customers to place an order for the goods and paying for them. Since firms faces growing challenges around market volatility, long lead time and forecasting errors, lean improves the flow of information and material throughout the supply chain thereby reducing time taken for the product to flow (Axelsson, Rozemeijer & Wynstra, 2005). Lean procurement deliveries are flexible and lean in order to meet

changing demand in a demand driven supply chain. In addition to sheer cost of disrupting production, long lead times can damage the existing customer relationship and significantly weaken the firm's credibility (Bonavia & Marin, 2006). Reduced lead time is the key structural element of lean processes and can result to improved efficiency of supply chain processes. This in turn lowers the inventory cost making it more consistent and increases manufacturing flexibility. Lean methods also ensures quick push and pull in the firm's product supply chain enabling quick response to demand rather than anticipated forecast (Sohal & Egglestone, 2004).

Inventories should ebb and flow with the changes in customer demand. This leads to reduction in inventory carrying cost and administrative costs. High development and carrying costs are the result of this model. Lean helps to minimize new product development time and expense. This delivers the product to market faster, making it easier to incorporate current requirements into the product (Esben, Gjerdrum & Mahad, 2011). Lean also promotes the use of less capital-intensive machines, tools, and fixtures, which results in more flexibility and less initial cost to recover. As a result, product life cycles may be shorter. This contributes to smoother and more predictable earnings by reducing the variability of cost of goods. In the service industry, lean procurement reduces the cost of offering services.

Lean procurement practices helps develop flexible and responsive supply chain where when customers demand unexpectedly goes up, the supply chain meets the increase and when forecast go down, the firm is left with no level of inventory (Handfield et al., 2009). Lean procurement systems also allow a supply chain to not only to be more efficient, but



also faster and responsive. As the culture of lean takes over the entire supply chain, all links increase their velocity. A culture of rapid response and faster decisions becomes the expectation and the norm. This does not mean that decisions are made without careful thought. It simply means that a "bias for action" becomes the new corporate culture. Slow response or no response becomes the exception, rather than the rule (Womack & Jones, 2009).

The traditional procurement methods consist of the buyers managing MRP forecast and communicating the requirements to supplier via phone, fax and e-mail. These traditional methods are slow and cumbersome and cannot support today demand driven enterprises (Shah & Ward, 2003). A lean supply chain works to have products pulled through the channel using customer demand from point of sale systems in real time. This minimizes the need to forecast demand, given the actual and real demand for the product. One of the key principles of lean is moving to a pull system. That is, products or services are pulled when requested by the final customer. Clearly, the end-user requirement for the finished product will generally be meaningless to a third tier supplier, as they likely only provide a fraction of the materials for finished product and most probably do not understand how they contribute to the end-product structure (Hines & Found, 2008). Harland et al., (2007) implementation requires that all suppliers and processors everywhere in the supply chain process receive demand signals that come from the customer and turn those signals into components of the final saleable product for which they are responsible.

Mertins and Jochem (2001) suggest with empirical evidence that lean aids competitiveness. Polito and Watson (2006) insists that benchmarking studies of Japanese

companies demonstrated that true conversions to lean produced four fold productivity gains. Sohal and Eggleston (2004) suggest that two-thirds of the companies said that a strategic advantage had been generated through lean methods, with the greatest improvements stemming from market competitive positioning, customer relationships and quality constraints. A strong supply chain enables the member companies to align themselves with each other and to coordinate their continuous improvement efforts. This synthesis enables even small firms to participate in the results of lean efforts. Thought, commitment, planning, collaboration, and a path forward are required (Shah & Ward, 2003).

#### **2.4 Lean Procurement in the Telecommunication Industry**

The telecommunications industry provides data, voice services, graphics, television, and video at increasing speeds and through diverse channels. While landline telephonic communication is still the core service mode, wireless communication, internet, cable and satellite program distribution are increasing their share in overall industry earnings (Mertins & Jochem, 2001).

The industry is experiencing rapid deregulation and technology disruption in service offerings. In many markets across the globe, governments are revoking monopolistic policies, and older players face a new breed of competitors (Bonavia & Marin, 2006). The market of this industry includes residential customers, small businesses, and big corporate customers. In the residential customers market, competitors rely heavily on price to increase their customer base. Success depends on branding, reputation, and investment in agile order management and billing solutions. The corporate market has

different characteristics as compared to residential customers. Big corporate customers are ready to pay premium for the quality and reliability of their voice services and data delivery. They are less price-sensitive when special services like virtual private network, data security, and videoconferencing come into picture. Telecom operators also provide network connectivity services to other companies that need it. The players with far-reaching networks lend circuits to heavy network users like large corporations and internet services providers.

Sohal and Egglestone (2004) indicate that the telecommunications industry is characterized by new technologies, new services, and huge capital investments to make content accessible by any device anywhere. Market players are frequently coming up with new products, services, and tariffs to increase their market share in this fiercely competitive industry. With these exciting developments comes the realization that market players have to make their systems more effective, flexible, and scalable to efficiently manage an increasingly complex product portfolio. This is a multi-dimensional problem that requires optimized processes, accurate operational data, and integrated solutions. The very first critical business area to be addressed to achieve this goal is Order Management. This encompasses several critical touch points of direct customer experience with the organization, and, thus, its proper functioning is strategic in nature.

In addition, according to Bhasin and Burcher (2006), about 2 to 5 percent of all services delivered by the world's largest telecom providers are unbilled because of inefficient or misaligned processes. Despite significant investments in new and upgraded solutions, order-to-cash processes remain inefficient. Due to the above mentioned challenges, the

telecom industry is facing the following issues in its day to day operations: Labor intensive offline order conflict resolutions; Process delays and inaccuracies; Customer dissatisfaction; Billions of dollars in lost revenue and operational costs; Penalties for being out of compliance or unmet SLAs, Problems in accelerated roll out of new products/services; Spending on efficient order management solutions is exceeding billions of dollars per year; leading trends in telecom industry are impacting how market players manage their customer facing processes like order management solutions. Some of the key change drivers like continuous improvement, Just in Time supply, e-procurement, Six- Sigma and Supplier-firm relationship.

## **2.5 Challenges Facing Lean Procurement**

Lean procurement implementations can suffer through lack of support from suppliers, carriers companies, engineering, top management and also through low product quality and lack of communication. Research has highlighted that the most pressing issues are; the lack of support from suppliers, low levels of supplier sophistication, geographical distance, lack of system thinking, resistant to change, poor planning, lack of adequate resources, lack of skills and expertise, and lack of clarity of supply chain waste (Achanga et al., 2006).

Mertins and Jochem (2001) point out that that number of suppliers for each material or component should ideally be one. This would reinforce good buyer-supplier relationships. Some organizations would argue that sole sourcing increases the risk of supply disruption and non-competitive pricing. Single sourcing and inventory reduction can also be risky, this is why some maintain multiple supply arrangements where

practicable. A key issue for multi-sourcing is determining economic order quantities or lot sizes.

Lean procurement requires close geographic proximity with suppliers to achieve the desired performance levels (Bhasin & Burcher, 2006). Close proximity enhances the exchange of information, quality levels and facilitates cost reduction. Owing to distances, it is very difficult and time consuming for international vendors to incorporate design and volume changes as directed by the buyer in an expedient manner. Delays may also be caused by language, culture and time zones difficulties of international trade (Bonavia & Marin, 2006). Distance increases the complexity of the supply chain, and entails higher levels of buffering (Mason, 2007).

According to Bashin and Burcher (2006), many companies fail in implementing lean procurement because they fail to see lean as more of a process. Lack of system thinking hinders successful implementation (Mason, 2007). They state that lean is more than just a set of tools as it is about how you approach you job, customers, suppliers and processes. According to Liker (2004) lean is a system of 4P model, i.e. Philosophy, Process, People & partner and problem solving.

Resistance to change is also a problem in the implementation of lean, as in most change processes. Sohal and Egglestone (2004) indicate that resistance is represented in all functions of a company, including senior managers, middle managers and shop floor personnel. Liker and Choi (2006) state that resistance from individuals is a familiar problem for purchasing managers which inhibits lean implementation. He states that the primary reasons for resistance is often lack of clarity and uncertainty for change,

pressure, interference with interest, and challenges to learn something new. According to Bhasin and Burcher (2006), it is important for the implementation of lean to have a clear vision of what the organization will look like after the transformation and the goals are also communicated to the staffs.

Saurin *et al.*, (2011) state that implementation of lean procurement in the firms fail due the existing culture and lack of support of change by the management The literature dictates that nine of the top ten barriers to change are quoted as being people-related, including poor communications and employee opposition (Hines *et al.*,(2008). Another major difficulty when applying lean is lack of planning and project sequencing (Bhasin & Burcher, 2006). Knowledge of the tools and method is often not the problem, according to Bhasin and Burcher (2006), but rather difficulties of coordinating the work and making people believe in them.

Implementing lean procurement also requires extra resources which most of the firms are not willing to spend. Financial resources are needed for employee training programs, external consultants, ICT Integration and coordination etc. The managers would rather refuse unnecessary loss of resources especially if they do not anticipate immediate returns (Achanga *et al.*, 2008; Liker & Choi, 2006). Implementing lean practices require use of intellectual capital and ability to innovate and differentiate. Most companies experience difficulties after employing people with low skills levels, who do not foster the ideology of skill enhancement. Companies often lack clarity of differentiating value from waste in the supply chain (Langley *et al.*, 2008). Balancing procurement related activities that are “necessary waste” with those that create value presents an on-going struggle for

companies of all sizes. For instance, it might be difficult for firms to tell whether employees' movement within the firm adds value or not (Kotter, 2007).

Another challenge facing lean procurement is lack of enough research. Lack of enough research leads to understocking or overstocking. If demand is uncertain, then the imperfect ability to forecast demand can result in a mismatch between the inventory that is held by the retailer and the actual demand realization. In such a case there is inefficient production of the good leading to either understocking or overstocking of the good as compared to the realized demand. Both understocking and overstocking are undesirable; understocking leads to lost sales, dissatisfied customers, production lost. On the other hand, overstocking leads to tied up funds, physical holding cost, obsolescence.

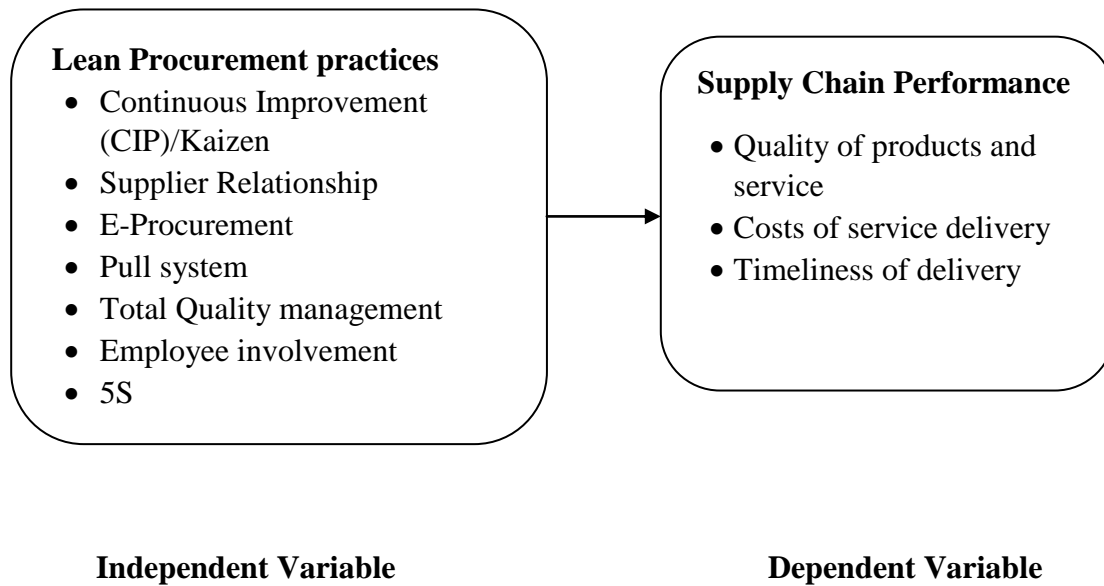
Shift of customers demand is also a challenge in lean procurement. Professionals and executives in the supply chain world strive continuously for innovations, leading practices, and new ideas that can improve how supply chains help businesses grow profitably. Because supply chains provide value to companies of all types, demand-driven value networks should be a prime objective. Developing a “demand-driven business” is an emerging goal of business leaders. Knowing what customers bought yesterday and what they want to buy today is not enough. Due to the increasingly global economy, shorter product cycles fueled by instantaneous information, and increasing specialized needs of global markets, the common views about supply and demand are no longer adequate.

## **2.6 Summary of the Literature**

From the literature, it is clear that lean procurement is conceptualized differently amongst organization. Organizations that implement lean therefore do so in their own unique way depending on the firm different variables and problems. Lean procurement practices include employee's involvement and respect for people, Continuous Improvement (CIP)/Kaizen, six- sigma, Just in Time (JIT), supplier relationship and e-procurement. Lean procurement influences organizational performance by reducing lead time, reducing cost, improving customer satisfaction, improving demand management an improving competitiveness. Literature also shows that the challenges that organizations face in implementing lean procurement include lack of support from suppliers, low levels of supplier sophistication, geographical distance, lack of system thinking, resistant to change, poor planning, lack of adequate resources and lack of skills and expertise.



## 2.7 Conceptual Model



**Figure 2. 1: Conceptual Framework**

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter highlights the research design, the study population, sample and sampling techniques, data collection, pilot test and data analysis.

### **3.2 Research design**

This study sought to establish the effect of lean procurement and supply chain performance within Safaricom Limited. This research study used a case study design. A case study is a descriptive, exploratory or explanatory analysis of a person, group or event. According to Cooper & Schindler (2003), case studies allow a lot of detail to be collected that would not normally be easily obtained by other research designs. The data collected is normally a lot richer and of greater depth than can be found through other research designs. A case study research design was adopted because the objectives of the study require an in depth understanding of the Company.

### **3.3 Population**

According to Kothari (2004), a population is a well-defined set of people, services, elements, events, group of things or households that are being investigated. This definition ensures that population of interest is homogeneous. The target population of this study comprised of the staffs working in Safaricom headquarters.

### 3.4 Sample and Sampling Technique

This research study used stratified random sampling to select 20% of the target population. According to Cooper and Schindler (2003), a sample size of 20% is a good representation of the target population. Stratified sampling is a probability sampling technique wherein the researcher divides the entire population into different subgroups or strata, then randomly selects the final subjects proportionally from the different strata. In addition, the researcher specifically picked on team leaders within the departments. The sample size of this study was therefore 37 team leaders.

**Table 3. 1: Sample Size**

<b>Department</b>	<b>Target population</b>	<b>Sample size (20%)</b>
Strategy and Innovation	35	7
Marketing	37	7
Procurement	31	6
Finance	27	5
Customer care	30	6
Technical and IT	25	5
<b>Total</b>	<b>185</b>	<b>37</b>

### 3.5 Data Collection

This study used primary data and secondary data. Secondary data was obtained from the Safaricom annual reports and financial statements. Primary data was collected using questionnaires; the questionnaires included structured and unstructured questions.

Questionnaires were used in this study as they are very economical in terms of time, energy and finances. The structured questions were used in an effort to conserve time and money as well as to facilitate an easier analysis as they are in immediate usable form; while the unstructured questions were used as they encourage the respondent to give an in-depth and felt response without feeling held back in revealing of any information. With unstructured questions, a respondent's response gives an insight to his or her feelings, background, hidden motivation, interests and decisions. The questionnaires were administered using a drop and pick later method to the sampled respondents.

### **3.6 Data Analysis**

Data analysis was done after data collection. This is a process used to make sense of the data. The type of data analysis tool used is dependent on the type of data, that is; is the data qualitative or quantitative. The quantitative data in this research was analyzed by descriptive and inferential statistics using Statistical Package for Social Sciences (SPSS version 20). Descriptive statistics includes mean, frequency, standard deviation and percentages to profile sample characteristics and major patterns emerging from the data (Babbie, 2002). Data was then presented in tables, charts and graphs. Content analysis was used in processing of qualitative data results were presented in prose form.

More specifically the first objective of this study was analyzed by use of descriptive statistics such as mean and standard deviation. The second objective was analyzed by use of descriptive statistics as well as regression analysis. In this objective the study was regression analysis to establish the relationship between lean procurement and supply chain performance at Safaricom Limited.

The regression model in this study was;

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Whereby  $Y$  = Supply chain performance

$\beta_0$  = constant

$\beta_1$  = Regression coefficient

$X_1$  = Lean procurement

The third objective of the study was analyzed by use of descriptive statistics such as mean and standard deviation

## **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter discusses the data analysis, results and interpretations sought from the research. The objectives of this study were to establish the lean procurement practices used in Safaricom Limited; to establish the relationship between lean procurement and supply chain performance at Safaricom Limited and to determine the challenges facing lean procurement in Safaricom Limited.

### **4.2 General Information**

The sample size of this study was 37 team leaders who were working in the Strategy and Innovation department, Marketing department, Procurement department, Finance department, Customer care department and Technical and IT department. Out of 37 team leaders, 35 comprehensively filled and returned their questionnaires. This represents a 94.59% response rate. This correlates with Mugenda and Mugenda (2003) argument that a response rate of 50% is sufficient for analysis and reporting; a response rate of 60% is good while a response rate of 70% and over is excellent. This evidently shows that the response rate in this study was excellent and hence the responses can be used to make inferences in relation to the relationship between lean procurement and supply chain performance.

The general information of the respondents in this study also comprised of their gender and the number of years they had been working in Safaricom Limited. From the findings,

54.3% of the respondents reported that they were male while 45.7% indicated that they were female. This shows that most of the respondents in this study were male.

In addition, 40% of the respondents indicated that they had been working in Safaricom Limited, 31.4% indicated that they had been working in Safaricom for between 6 and 9 years, 20% indicated that they had been working in Safaricom for less than 2 years and 8.6 indicated that they had been working in Safaricom for more than 10 years.

### **4.3 Lean Procurement Practices used by Safaricom**

The first objective of this study was to establish the lean procurement practices used in Safaricom Limited. The respondents were asked to indicate the extent to which their organization was using various lean procurement practices in a scale of 1 to 5 where 1 was no extent at all, 2 was low extent, 3 was moderate extent, 4 was great extent and 5 was very great extent. The results are shown in table 4.1 below.

**Table 4. 1: Lean Procurement Practices used by Safaricom**

	<b>Mean</b>	<b>Std. Deviation</b>
Involvement and empowerment of employees	4.414	0.832
Supplier-firm relationship	4.342	0.905
Pull system	4.257	1.010
Total Quality management	4.228	0.942
Continuous improvement	4.200	0.719
e-procurement	4.142	1.191
5S	3.942	0.937

From the findings, the respondents indicated with a mean of 4.414 and a standard deviation of 0.832 that their organization was using Involvement and empowerment of employees as a lean procurement practice to a great extent. These findings agree with Hines *et al.*, (2008) argument that involvement and empowerment of employees is an imperative requirement and important for success. The respondents also indicated with a mean of 4.342 and a standard deviation of 0.905 that supplier-firm relationship was used in the organization as a lean procurement practice to a great extent. . The key to lean procurement is visibility. Suppliers must be able to "see" into their customers' operations and customers must be able to "see" into their suppliers' operations.

Further, the respondents indicated with a mean 4.257 and a standard deviation of 1.010 that their organization was using pull system was used by their organization as a lean procurement practice to a great extent. These findings agree with Bonavia and Marin (2006) argument that JIT procurement provides a cost effective delivery of only the necessary quantity of parts at the right quality, at the right time and place. This is accomplished through the application of elements which require total employee involvement and teamwork. Further, the respondents indicated with a mean of 4.228 and a standard deviation of 0.942 that total quality management was used by their organization as lean procurement practice to a great extent. Additionally, the respondents indicated with a mean of 4.200 and a standard deviation of 0.719 that continuous improvement was used by their organization as a lean procurement practice to a great extent. These findings agree with Mertins and Jochem (2001) argument that continuous improvement is the continual pursuit of improvement in quality, cost delivery and design. Kaizen which is an aspects of continuous improvement can be seen as a culture of



sustained improvement aiming at eliminating waste in the entire organization and involves everyone in a common aim to improve work without huge capital investments. In addition, the respondents indicated with a mean of 4.142 and a standard deviation of 1.191 that their organization was using e-procurement as a lean procurement practice to a great extent. The traditional procurement methods consist of the buyers managing MRP forecast and communicating the requirements to supplier via phone, fax and e-mail. According to Shah and Ward (2003), these traditional methods are slow and cumbersome and cannot support today demand driven enterprises. Lastly, the respondents indicated with a mean of 3.942 and a standard deviation of 0.937 that their organization was using 5S (sort, straighten, shine, standardize, and sustain) as a lean procurement practice to a great extent.

This shows that the lean procurement practice that Safaricom was using most was involvement and empowerment of employees followed by supplier-firm relationship, pull system, total quality management, continuous improvement, e-procurement and 5S (sort, straighten, shine, standardize, and sustain).

#### **4.4 Relationship between Lean Procurement and supply Chain Performance**

The study also sought to establish the relationship between lean procurement and supply chain performance at Safaricom Limited. The respondents were asked to indicate their level of agreement with various statements on lean procurement and supply chain performance in Safaricom Limited in a scale of 1 to 5 where 1 was strongly disagree, 2 was disagree, 3 was neutral, 4 was agree and 5 was strongly agree. The findings are presented in table 4.2 below.

**Table 4. 2: Relationship between Lean Procurement and supply Chain Performance**

	<b>Mean</b>	<b>Std. Deviation</b>
Lean procurement deliveries are flexible and lean in order to meet changing demand in a demand driven supply chain	4.371	1.113
Lean helps to minimize new product development time and expense	4.371	1.190
Lean Procurement reduces lead time	4.314	1.345
Lean promotes the use of less capital-intensive machines, tools, and fixtures, which results in more flexibility and less initial cost to recover	4.257	1.120
Lean procurement sheers cost of disrupting production	4.200	.994
Lean Procurement reduces waste	4.114	1.182
Lean procurement systems allow a supply chain to not only be more efficient, but also faster and responsive	4.114	1.254

According to the findings, the respondents agreed with a mean of 4.371 and a standard deviation of 1.113 that lean procurement deliveries are flexible and lean is used in order to meet changing demand in a demand driven supply chain. These findings agree with Bonavia and Marin (2006) argument that lean procurement deliveries are flexible and lean in order to meet changing demand in a demand driven supply chain. The respondents also agreed with a mean of 4.371 and a standard deviation of 1.190 that lean helps to minimize new product development time and expense. These findings concur with Esben, Gjerdrum and Mahad (2011) argument that lean helps to minimize new product

development time and expense. This delivers the product to market faster, making it easier to incorporate current requirements into the product. Further, the respondents agreed with a mean of 4.314 and a standard deviation of 1.345 that lean procurement reduces lead time. Lead time is the time taken by the customers to place an order for the goods and paying for them. Axelsson, Rozemeijer and Wynstra (2005), argue that since firms faces growing challenges around market volatility, long lead time and forecasting errors, lean improves the flow of information and material throughout the supply chain thereby reducing time taken for the product to flow.

In addition, the respondents agreed with a mean of 4.257 and a standard deviation of 1.12 that lean promotes the use of less capital-intensive machines, tools, and fixtures, which results in more flexibility and less initial cost to recover. Esben, Gjerdrum and Mahad (2011) had earlier indicated that lean also promotes the use of less capital-intensive machines, tools, and fixtures, which results in more flexibility and less initial cost to recover. The respondents further agreed with a mean of 4.200 and a standard deviation of 0.994 that lean procurement sheers cost of disrupting production. According to Bonavia and Marin (2006), in addition to sheer cost of disrupting production, long lead times can damage the existing customer relationship and significantly weaken the firm's credibility. In addition, the respondents agreed with a mean of 4.114 and a standard deviation of 1.182 that lean Procurement reduces waste. Lastly, the respondents agreed with a mean of 4.114 and a standard deviation of 1.254 that lean procurement systems allow a supply chain to not only to be more efficient, but also faster and responsive.

This findings clearly show that lean procurement deliveries are flexible and lean is used in order to meet changing demand in a demand driven supply chain. In addition, lean helps to minimize new product development time and expense, reduces lead time and promotes the use of less capital-intensive machines, tools, and fixtures, which results in more flexibility and less initial cost to recover. Further, lean procurement sheers cost of disrupting production, reduces waste and lean procurement systems allow a supply chain to not only to be more efficient, but also faster and responsive.

#### **4.5 Challenges Facing Lean Procurement In Safaricom**

The study further sought to determine the challenges facing lean procurement in Safaricom Limited. The respondents were asked to indicate the extent to which their organizations was facing various challenges in lean procurement in a scale of 1 to 5 where 1 was no extent all, 2 was low extent, 3 was moderate extent, 4 was great extent and 5 was very great extent. The results are presented in table 4.3 below.

**Table 4. 3: Challenges Facing Lean Procurement In Safaricom**

	<b>Mean</b>	<b>Std. Deviation</b>
Lack of adequate resources	3.057	1.493
Lack of communication	2.857	1.115
Lack of enough research, which leads to understocking or overstocking	2.685	1.278
Lack of skills and expertise	2.657	1.625
Resistant to change	2.600	1.310
Poor planning	2.571	1.399
Lack of support from suppliers, carriers companies, engineering and top management	2.428	1.008
Shift of customers demand	2.400	1.116
Lack of clarity of supply chain waste	2.085	1.172

From the findings, the respondents indicated with a mean of 3.057 and a standard deviation 1.493 that Safaricom was facing the challenge of lack of adequate resources to a moderate extent. The respondents also indicated with a mean of 2.857 and a standard deviation of 1.115 that Safaricom was facing the challenge of lack of communication to a moderate extent. Further, the respondents indicated with a mean of 2.685 and a standard deviation of 1.278 that Safaricom was facing to challenge of lack of enough research, which leads to under-stocking or overstocking to a moderate extent. The respondents also indicated with a mean of 2.657 and a standard deviation of 1.625 that Safaricom was facing the challenge of lack of skills and expertise to a low extent. Further, the

respondents indicated with a mean of 2.600 and a standard deviation of 1.310 that their organization was facing resistant to change to a moderate extent. The respondents indicated with a mean of 2.571 and a standard deviation of 1.399 that their organization was facing poor planning to a low extent. According to Achanga *et al.* (2006), the most pressing issues in implementing lean are; the lack of support from suppliers, low levels of supplier sophistication, geographical distance, lack of system thinking, resistant to change, poor planning, lack of adequate resources, lack of skills and expertise, and lack of clarity of supply chain waste.

The respondents also indicated with a mean of 2.428 and a standard deviation of 1.008 that their organization was facing lack of support from suppliers, carriers companies, engineering and top management to a low extent. Achanga *et al.* (2006) had earlier indicated that lean procurement implementations can suffer through lack of support from suppliers, carriers companies, engineering, top management and also through low product quality and lack of communication. In addition, the respondents indicated with a mean of 2.400 and a standard deviation of 1.116 that their organization was facing Shift of customers demand to a low extent. Lastly, the respondents indicated with a mean of 2.085 and a standard deviation of 1.172 that their organization was facing lack of clarity of supply chain waste to a low extent.

These findings show that Safaricom was moderately facing the challenges of lack of adequate resources; lack of communication; lack of enough research, which leads to under-stocking or overstocking; lack of skills and expertise; resistant to change and poor planning. In addition, the findings show that Safaricom was facing lack of support from

suppliers, carriers companies, engineering and top management; shift of customers demand and lack of clarity of supply chain waste to a low extent.

#### 4.5 Supply Chain Performance

The team leaders were asked to rate various measures of supply chain performance in their organization in a scale of 1 to 5 where 1 was poor, 2 was bad, 3 was moderate, 4 was good and 5 was excellent. The findings are shown in table 4.4 below.

**Table 4. 4: Supply Chain Performance**

	<b>Mean</b>	<b>Std. Deviation</b>
customer satisfaction	4.142	1.191
cost and flexibility	4.257	1.093
lead time	4.314	1.157
waste reduction	4.228	1.262
product development time and expense	4.257	1.220

From the findings, the respondents rated lead time in their organization as good as shown by a mean of 4.314 and a standard deviation of 1.157. In addition, the respondents rated cost and flexibility in their organization as good as shown by a mean of 4.257 and a standard deviation of 1.093. Further, with a mean of 4.251 and a standard deviation of 1.220, the respondents rated product development time and expense in their organization as good. Additionally, the respondents rated waste reduction in their organization as good as shown by a mean of 4.228 and a standard deviation 1.262. Lastly, the respondents rated customer satisfaction in their organization as good as shown by a mean of 4.142 and

a standard deviation of 1.191. From the findings, cost and flexibility, product development time and expense, waste reduction and customer satisfaction were rated as good.

#### 4.6 Regression Analysis

The study also used multivariate regression analysis to establish the relationship between the dependent variable (supply chain performance) and dependent variables (lean procurement). The regression model in this study was;

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Whereby; Y = Supply chain performance,  $\beta_0$  = constant,  $\beta_1$  = Regression coefficient,  $X_1$  = Lean procurement and  $\epsilon$  = Error Term

**Table 4. 5: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.823 <sup>a</sup>	.678	.668	.65698

a. Predictors: (Constant), Lean Procurement

The independent variables (lean procurement) that were studied, explain 66.8% supply chain performance as represented by the  $R^2$ . This therefore means that other factors not studied in this research contribute 43.2% of supply chain performance in Safaricom Limited.



**Table 4. 6: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.980	1	29.980	69.459	.000 <sup>b</sup>
	Residual	14.244	33	.432		
	Total	44.224	34			

a. Dependent Variable: Supply chain performance

b. Predictors: (Constant), Lean Procurement

The significance value is 0.000 which is less than 0.05 thus the model is statistically significant in predicting how lean procurement influence supply chain performance in Safaricom. The F critical at 5% level of significance was 4.14. Since F calculated (69.459) is greater than the F critical, this shows that the overall model was significant.

**Table 4. 7: Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.228	.784		-2.842	.008
	Lean Procurement	1.539	.185	.823	8.334	.000

a. Dependent Variable: Supply chain performance

The regression equation was;

$$Y = 2.228 + 1.539 X_1 + 0.65698$$

The regression equation above has established that taking the independent variable (lean procurement) constant, supply chain performance in Safaricom will be 2.228 units. The findings presented also show that there is a positive significant relationship between lean procurement and supply chain performance at Safaricom Limited as shown by a coefficient of 1.539 (p-value=0.000). This shows that a unit improvement in lean procurement would lead to a 1.539 improvement in supply chain performance at Safaricom Limited.

# **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

## **5.1 Introduction**

This chapter presents a summary of the key findings, conclusion drawn from the findings, recommendation, limitations of the study and suggestions for further studies. The conclusions and recommendations drawn were focused on addressing the purpose of the study. The purpose of this study was to establish the relationship between lean procurement and supply chain performance.

## **5.2 Summary of the Findings**

This study established that involvement and empowerment of employees was used by Safaricom to a great extent. Involvement and empowerment of employees is an imperative requirement and important for success. The study also found that supplier-firm relationship was used in the organization, followed by pull system. JIT procurement provides a cost effective delivery of only the necessary quantity of parts at the right quality, at the right time and place. In addition, the study established that Safaricom Limited was using total quality management and continuous improvement. Kaizen which is an aspect of continuous improvement can be seen as a culture of sustained improvement aiming at eliminating waste in Safaricom Limited and involves everyone in a common aim to improve work without huge capital investments. In addition, the study found that Safaricom Limited was using e-procurement and 5S (sort, straighten, shine, standardize, and sustain) as a lean procurement practice.

This study established that lean procurement deliveries are flexible and lean is used in order to meet changing demand in a demand driven supply chain. The study also found that lean helps to minimize new product development time and expense. This delivers the product to market faster, making it easier to incorporate current requirements into the product. Further, the study established that lean procurement reduces lead time. Lead time is the time taken by the customers to place an order for the goods and paying for them. Since firms faces growing challenges around market volatility, long lead time and forecasting errors, lean improves the flow of information and material throughout the supply chain thereby reducing time taken for the product to flow. In addition, the study revealed that lean promotes the use of less capital-intensive machines, tools, and fixtures, which results in more flexibility and less initial cost to recover. The study also found that lean procurement sheers cost of disrupting production. In addition, the study established that lean procurement reduces waste. The study also revealed that lean procurement systems allow a supply chain to not only to be more efficient, but also faster and responsive.

The study found that Safaricom was facing the challenge of lack of adequate resources, lack of communication, lack of enough research, which leads to under-stocking or overstocking, lack of skills and expertise, resistant to change and poor planning though to a low extent. Further, the study found that Safaricom was facing to challenge of lack of enough research, which leads to under-stocking or overstocking to a moderate extent. The study established that Safaricom was facing the challenge of lack of support from suppliers, carriers companies, engineering and top management to a low extent. In

addition, the study found that Safaricom was facing shift of customers demand to a low extent.

### **5.3 Conclusions**

This study concludes that there is a positive significant relationship between lean procurement and supply chain performance. The study also established that Safaricom was lean procurement practices like involvement and empowerment of employees, supplier-firm relationship, pull system, total quality management, continuous improvement, e-procurement and 5S.

The study also concludes that lean procurement deliveries are flexible and lean is used in order to meet changing demand in a demand driven supply chain. In addition, lean helps to minimize new product development time and expense, reduces lead time and promotes the use of less capital-intensive machines, tools, and fixtures, which results in more flexibility and less initial cost to recover. Further, lean procurement sheers cost of disrupting production, reduces waste and lean procurement systems allow a supply chain to not only to be more efficient, but also faster and responsive.

### **5.4 Recommendations**

Telecommunication companies in Nairobi should ensure that they engage services of qualified individuals who have the required expertise in the implementation of lean procurement practices that can assist in making informed lean procurement. This will assist them to avoid making decisions which pose challenges to its operation.

The government of Kenya should formulate policies to improve lean procurement practices like just in time procurement. This can be achieved by improving infrastructure and increasing suppliers. The government of Kenya should also formulate policies to improve e-procurement. This can be done by improving Information, communication and technology.

Telecommunication firms should also consider and avoid those barriers which pose problems to the application of lean procurement practices in eliminating waste from all sector of the telecommunication industry.

### **5.5 Limitations of the Study**

The study findings were concluded on the basis of responses from team leaders in Safaricom limited only. The findings can therefore not be generalized to other organizations in Kenya, whether in the service industry or in the manufacturing industry.

Another challenge faced was the administration of the questionnaires. The fact that the intended mode of the data collection was to furnish the respondents with questionnaires and get them back immediately was not possible. Therefore, the questionnaires were dropped and picked after some days and this meant that the control to who filled the questionnaires could not be verified. Scarcity of funds was another limitation. The limitations therefore dictated the number of respondents and the duration of the study.

### **5.6 Suggestions for further research**

This study was only able to address the relationship between lean procurement and supply chain performance in Safaricom Limited. It will be necessary to carry out a study

featuring other organizations in other areas outside Nairobi in order to find out if there are any similarities and differences in the findings of this study.

It will also be important to do a comparative study with another country both in the sub-region, the developed and developing world to ascertain the similarities and differences in lean procurement practices. There is also a need to carry out a study on the relationship between lean procurement and supply chain performance in other industries in Kenya.

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## **Appendix I: Questionnaire**

Kindly answer the following questions as accurately as possible. Your individual responses are strictly confidential and anonymous. Your answers shall be used for academic purposes only. Please tick your answer against each question in the spaces provided.

### **General Information**

1. Gender

Male            [   ]            Female            [   ]

2. How many years have you been working in Safaricom?

Less than 2 years            [   ]            2 to 5 years            [   ]

6 to 9 years            [   ]            More than 10 years            [   ]

### **Lean Procurement practices used by Safaricom**

3. To what extent does your organization use the following lean procurement practices? (Key: 1= No extent all 2=Low extent, 3= Moderate extent, 4=Great extent, 5=Very great extent)

	1	2	3	4	5
Involvement and empowerment of employees					
Continuous improvement					
5S					
Pull system					
e-procurement					
Supplier-firm relationship					
Total Quality management					

4. Apart from the ones named above, which other lean procurement practices does your organization use?

.....

.....

## Relationship between Lean Procurement and supply Chain Performance

5. To what extent do you agree with the following statements in relation to lean procurement and supply chain performance in Safaricom Limited? (Key: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)

	1	2	3	4	5
Lean procurement deliveries are flexible and lean in order to meet changing demand in a demand driven supply chain					
Lean Procurement reduces waste					
Lean procurement sheers cost of disrupting production					
Lean Procurement reduces lead time					
Lean helps to minimize new product development time and expense					
Lean promotes the use of less capital-intensive machines, tools, and fixtures, which results in more flexibility and less initial cost to recover					
Lean procurement systems allow a supply chain to not only to be more efficient, but also faster and responsive					

### Challenges Facing Lean Procurement in Safaricom

6. To what extent does Safaricom face the following challenges in lean procurement o determine the challenges facing lean procurement in Safaricom Limited? (Key: 1= No extent all 2=Low extent, 3= Moderate extent, 4=Great extent, 5=Very great extent)

	1	2	3	4	5
Lack of support from suppliers, carriers companies, engineering and top management					
Resistant to change					
Poor planning					
Lack of adequate resources					
Lack of skills and expertise					
Lack of clarity of supply chain waste					
Lack of communication					
Lack of enough research, which leads to understocking or overstocking					
Shift of customers demand					

7. Apart from the ones named above, which other challenges is your organization facing in implementing lean procurement practices?

.....

.....

**Supply Chain Performance**

8. How do you rate the following measures of supply chain performance in your organization? (Key: 1= Poor 2=Bad, 3= Moderate, 4=Good, 5=Excellent)

	1	2	3	4	5
customer satisfaction					
cost and flexibility					
lead time					
waste reduction					
product development time and expense					