EFFECT OF VALUE CHAIN MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE OF TELECOMMUNICATION FIRMS IN KENYA

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DECLARATION

This Research Project is my original work and has not been presented for examination in any other University

Signature:…………………………. Date:.……………………………………………

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This Research Project has been submitted for examination with my approval as the University Supervisor

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DEDICATION

This study is dedicated to my family and friends for their motivation and unwavering support.

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ABSTRACT

The main aim of the research is to assess the effects of value chain management practices on operational performance. The study was governed by the following objectives: to establish the value chain practices and their influence on operational performance and to determine the challenges faced in adoption of value chain management practices in telecommunication firms in Kenya. The study applied correlational research design to assess effects of value chain on operational performance. The target population was 12,230 (cash transfer agents and outlet shops) in the telecommunication firms in Kenya. Simple random sampling technique was used to recruit 100 respondents. Semi-structured questionnaire was used to collect primary data. They were administered through drop and pick method. The data collected was then analysed and significance tested by use of inferential statistics using statistical package for social sciences (SPSS) version 23 and Microsoft office Excel. Reliability, validity and diagnostic tests were done on the data to determine its suitability. Linear regression analysis was used to examine the relationship between organizational performance and the independent variables. The findings showed that telecommunications firms carry out value chain management practices at different levels and that they have a positive effect on operational performance. It was established from the study that the main challenge of adoption of value chain management practices comprise cost reduction. The study recommends that value chain management practices be applied because they lead to positive results for various firms. Policy makers in the various levels should develop policies that incentivise adoption of value chain management practices at various levels thus ensuring telecommunication firms are more rewarding. Value chain management practices are vital for any organization and relationship to operational performance via other models is a recommendation for further research.

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ABBREVIATIONS AND ACRONYMS

CAK –   Communications Authority of Kenya

CEC –   Customer Experience Centres

HRM –   Human resource management

ICT –   Information and Communications Technology

IT –   Information Technology

RBV –   Resource Based View

R&D –   Research and Development

SPSS   Statistical Package for Social Sciences

VCA –   Value Chain Analysis

VCM –   Value Chain Management

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Value chain management is the increased cooperation and incorporation of communication amongst value chain members in order to diminish inventories, grow customer satisfaction and reduce delivery times (Business Dictionary, 2018). Firms flourish by focusing on the specific activities within the value chain that allow them to draw maximum value for their clients and the business (Aguko, 2014; Dhillon & Vachhrajani, 2012). The concept of value chain management has become an indispensable factor for the existence and the success of a large number of industries. Affirmative instances of its implementation can be found in banking, film, fashion, IT and pharmaceutical industries. The application of the VCM concept is necessary in order for strategic alliances to be competitive (Aguko, 2014).

The theoretical contribution of this work lies in the dissemination of notions on the applicability of the VCM concept in the telecommunication industry. Porter (1985) observed that value addition is multidisciplinary and connected to scientific and financial fields including telecommunications industry. Krumwiede, Lummus and Vokurka (2001) and Johnson, Scholes and Whittington (2008) posits that improved technologies influence large data amounts to give logistics companies a more accurate and clearer picture often in real-time of value chains. According to the Social network theory (Granovetter, 1973), firm performance is subject to the form of embeddedness of the firm in the network resulting in an extent of interaction the organization may have with others in the network. Dissimilar, resource based view contends that firms own resources, which gives them the power to achieve a reasonable lead, and a subclass of those that lead to greater long-term performance (J. B. Barney, 1986; Penrose, 1956).

There are 3 main telecommunication firms in Kenya all aiming towards attaining a higher income than their expenses and cost (Communications Authority of Kenya, 2018). The telecommunication industry has become much more complex than before, quite a lot of firms and industries are involved which include: operators of networks who do the network groundwork and lay necessities on mobile handsets, mobile platforms providers, mobile manufacturers and industry regulator like the Communications Authority of Kenya among other parties (Otieno, 2010). Subsequently, firms have entered the industry where they offer inventive services in varied levels of the value chain as they offer

technology-based solutions for mobile users that allow them to communicate efficiently and effectively. As an imperative division in the overall economic growth, the communication sector requires an ample investigation at industry and firm levels.

1.1.1 Value Chain Management Practices

Value chain management is an indispensable facet of carrying out business. Different authors have defined value chain management differently hence the problem of lack of a universally accepted definition. However, to comprehend better the meaning of value chain management, it is imperative to first define value chain. Simchi-Levi, Kaminsky and Simchi-Levi (2008) posits value chain as a system of service providers and manufacturers who coordinate to move goods from the place of production to the place of use linked through financial movements, information and physical aspects. Value chain management, then, is a set of ways used to efficiently link warehouses, manufacturers, stores and suppliers; so that commodities are distributed after production to the right localities, in the right amounts and in a timely manner, in order to satisfy service level necessities while lessen system wide costs (Ganeshan & Harrison, 1995).

Porter (1985) propagated the value chain management. Porter hypothesized that the investigation could be used by businesses to decrease costs and intensify the revenue margin of businesses. VCM primary activities are Outbound logistics, Service, Operations, Inbound logistics, Marketing and sales and Support activities which include Procurement (purchasing), Human resource management, Technological development and infrastructure (Porter, 1985).

Miller and Jones (2010) state that the notion of the value chain is of the opinion of the procedural view of organizations that stresses on perceiving a service system as a structure, composed of subsystems each with change process, inputs and outputs. On the contrary, resource based view contends that companies have resources, which is a subset that gives them the power to realize a competitive lead against competitors, and a subset of those that lead to better performance in the long run. That lead is sustainable over prolonged phases to the degree that the business can safeguard against resource allocation, substitution or imitation (J. B. Barney, 1986; Penrose, 1956; Porter, 2012).

1.1.2 Operational Performance

Organizational performance contains the particular results of a company as measured against its intended aims. Richard, Devinney, Yip and Johnson (2009) states that performance comprises of three precise areas of firm results: The performance of the Product in the market (sale, market share); The Financial performance of the products and services (profits, return on assets, return on investment); and Shareholder returns (total shareholder return, economic value added).

Many companies have tried to control structure performance through the victimization of the balanced record book methodology wherever performance is followed and computed in several ways to systemize the company's activities to the goals of the organization, to improve the firm's communications and monitor organizational performance against goals. It is a performance management technique that maps a firm's tactics into performance metrics in four ways, that is: customers, financial, growth and learning and internal processes. It adds strategic non-financial performance measures to normal financial metrics to offer managers more 'balanced' read of structure performance (Kaplan & Norton, 1992).

1.1.3 Telecommunication Firms in Kenya

The growth in telecommunications industry in Kenya and Africa at large has been phenomenal at best of times and steady at worst. These industry leaders see the African continent as the next battleground in the quest for global expansion, market share and domination by multinationals. Kenya's mobile phone company, Safaricom has progressively grown to become the most profitable company in Eastern Africa as well as the largest corporate taxpayer in Kenya. It currently has over 25 million subscribers and it is still growing. Thus, the contribution of the telecommunication sector to the economy cannot be overemphasized. Airtel and Telkom Kenya have continued to provide competition in the market for Safaricom with each striving to increase their 4G network coverage and mobile money agents.

The Communications Authority of Kenya (CAK) is the industry regulatory commission charged with the roles of issuing licenses to telecoms and postal operators, overseeing price regulation, establishment of interconnection principles, and management of radio frequency spectrum and type-approval of telecommunications equipment. According to

CAK the market structure is divided along fixed lines and mobile phone services; end user retail and interconnection wholesale service.

1.2 Research Problem

According to Porter (1985), the business value chain comprises of all the value adding activities along the entire business, beginning with the raw material and culmination to the after-sales services of the merchandise bought. The value chain of an organization includes the value making activities of that specific firm. Telecommunication firms have experienced dynamism in the recent past, caused by new entrants, technological improvements, segmenting, customer service development and differentiation of products. Each of the telecommunication firms need to stay ahead in terms of adopting competitive strategies. Contemporary examinations on comparable themes have focused fundamentally on investigating value chains in different industries. Locally, for example Changwony (2012) investigated on the value chain approach to stakeholder's examination and administration of tea exchange in Kenya. He presumed that Warehouse administrators were core stakeholders inside the supply chain with tea brokers being the minimum essential. Musau (2003) in his examinations on value chain administration hones in assembling firms in Kenya and uncovered that value chain administrators enable organizations to be more aggressive.

Ikundo (2007) in his investigations of pharmaceutical firms and end clients uncovered that wholesalers were very respected by the users and producers alike because of the parts played in disseminating products to the clients. Aguko (2014) examined the value chain analysis and organizational performance of beer manufacturing companies in Kenya. In his research, he observed how each facet of the value chain influenced the business performance. From the above investigations, it is evinced that researchers have not focused on value chain management practices in the telecommunications industry in Kenya and its connection to performance hence the need to fill the information gap and comprehend the study topic in connecting value chain management and performance, thus the motivation behind my examination. This research therefore, seeks to answer the question "What is the effect of value chain management on operational performance of telecommunication firms in Kenya"

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1.3 Research Objectives

The general objective of the study was to examine the value chain management practices and how they relate to performance of telecommunication firms.

The study was guided by the following specific objectives;

    i.   To establish the effect of value chain management practices on the performance of telecommunication firms in Kenya.

    ii.   To determine the challenges of practicing value chain management by telecommunication firms in Kenya.

1.4 Value of the Study

The results of the study will be invaluable to researchers in both academic and business, as a source of reference in forming their future research topics and studies. It provides supplementary insight to the current policies and new perceptions into managing the value chains in the telecommunications sector. The findings shall aid business proprietors in founding the right policies regarding the organizations' value chains.

The study will also seek to expose the management tactics that the industry actors should adopt to enhance or develop these performance indicators and create advantaged positions that improve their profitability and provide innovative services.

Finally, the project serves as a guideline for all those intending to participate in the telecommunication sector. The corporate proprietors can essentially integrate the management of the value chain into their business practices thus making the businesses more effective and efficient.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter is outlined as follows, introduction of the chapter, theoretical framework that forms the basis for this study, value chain management practices, summary of literature review, empirical studies, research gaps identified and the conceptual framework for this study.

2.2 Theoretical Review

Porter theorized that a business is a system intended to perform, deliver, market, produce, and support its outputs and observed that complete supervision of the several events of the value chain in a business can increase its revenue margin (Porter, 1985; Nyandiwa, 2016). Although the basic principle of the value chain is the same in all industries, it is significant to note that the application of the value chain varies from one industry to the next and at times from one firm to the next (Barney & Hesterly, 2006; Nyandiwa, 2016). A firm chooses which value chain activities to engage in and as such performance of different firms depends on how well the value chain is managed and which value chain activities the firm chooses to focus on (J. Barney & Hesterly, 2006).

2.2.1 Resource Based View

The Resource Based View (RBV) as progressed by Wernerfelt, (1984), investigates the significance of looking at the firm and optimizing its assets. Wernerfelt additionally portrays an asset as anything which could be thought of as a quality or shortcoming that is an unmistakable or impalpable resources that are fixed to a firm. The resources in a firm can be said to include efficient procedures, capital, technology, machinery, brand names and skilled personnel. Legitimate administration of the value chain model results in the best possible administration of the assets of the firm. A dominance of the assets controlled by the firm implies that assets can be utilized productively and successfully thus improving the overall performance.

The framework has limitations described by Barney (1991) in five ways: the task to achieve competitive advantage in an organization, competitive correspondence, hardly achievable tactics, socially multifaceted resources and the mandate of the organizations. These limitations are what gave rise to the use of Value Chain as a strategic tool for

diagnosing the firm's valuable capabilities and resources to improve performance and realize competitive advantage.

2.2.2 Porter's Model

Porter (1985) introduced a generic value chain model that forms the background of a production firm. As created by Porter, this approach of value chain is one to disaggregate the firm for internal examination reasons. As per Pearce II and Robinson (1997), the value chain disaggregates a firm into its deliberately critical activities with a goal to comprehend the conduct of the company's costs and differentiation levels. An organization increases competitive advantage through playing out these deliberate imperative actions more efficiently or superior to its rivals. Additionally, they stated that value chain examination depends on the presumption that a business's essential intention is to create value for clients. Their business is seen as a chain of value-making activities.

These activities comprise the primary activities of outbound logistics of the firm, company operations, inbound logistics of the firm, service, marketing and sales and support activities provided by the organization. It also includes the support activities of infrastructure of the firm, procurement, technology and human resource management. An advanced interpretation may integrate aspects by describing spatial and temporal aspects. That is, such processes may not be strictly lineal but may be iterative (with feedback, learning and flexibility) and may occur over some physical distance.

2.2.3 Social Network Model

As indicated by Granovetter (1973), Social network hypothesis creates another view, where the properties of people are less vital than their connections and ties. Inside value chain advancement, social networks can enlighten how elite or comprehensive a market is on the grounds that social networks can figure out who does what during the time spent moving an item from crude materials to end purchaser.

In this theory, associations are not only moulded by economic thoughts but other ideas like reputation, trust and power also have a key impact on the structure and duration of inter-company relations (Granovetter, 2005; Uzzi, 1997). These networks give approaches to organizations to assemble data, prevent rivalry, and even conspire in setting costs or arrangements (Biehl, Kim, & Wade, 2006; Granovetter, 1973). This approach looks at how organizations communicate with each other, describing the numerous casual

associations that connect officials together, and also affiliations and associations between singular workers at various organizations.

2.3 Value Chain Analysis

Value chain analysis (VCA) is the scrutiny of a value chain of a company. This investigation has a few points of interest. Firstly, VCA helps in recognizing the company's activities and which activities to centre around. A firm will have the capacity to deal with these activities and make them more proficient (Simister, 2011). Furthermore, VCA empowers a firm to make a dedicated edge over other industry players. It likewise enables partners to look at how each of the company's activities adds to its money related, physical, individual and organizational assets (Barney & Hesterly, 2006). VCA empowers key staff to guarantee effectiveness of the company's activities. Every action is explored and revised to guarantee productivity and adequacy. This is essential for the development and change of the association's exercises.

As delineated before, the value chain varies from one organization to another. The administration of the organization ought to have the capacity to figuring out what exercises ought to be incorporated into the value chain so as so carryout an appropriate VCA. To do a VCA, Donelan and Kaplan (1990) suggest that the administration should search for circumspect activities that make value in various ways. These exercises will have isolated costs and would require the ability of various staff for example production and advertising. Also, they suggest that basic, procedural and operational activities ought to be recognized. Structural activities decide the financial nature of the organization though procedural and operational activities including the everyday activities of the firm and the procedures in the firm. The third and last advance to a fruitful VCA as per Donelan and Kaplan (1990) involves concentrating on the structural and procedural exercises of the firm. This is rather than concentrating exclusively on the budgetary part of the firm. It is contended that money related achievement is a fleeting measure of execution and in this way not a genuine measure of progress.

Porter's value chain structure, (1985; 2012) is the most used model for analysing the reason of business-level value creation. Although Porter's manufacturing business (Five - Forces) competitive examination framework (Porter, 1980; 2012) is challenged in resource-based analyses (Barney, 1991; Wernerfelt, 1984), the value chain stands out with a dominant role as a model for the analysis of firm weaknesses and strengths. In

telecommunications, explicit activities are well established both at the micro level of peer-to-peer communications and at the industry level in describing actors. The support and primary activities of the value chain network in a telecoms firm are discussed below;

2.3.1 Inbound Logistics

All firms have raw materials and the process of bringing in of raw materials is referred to as inbound logistics. In inbound logistics, the dealings with suppliers is core to the adding of value to the final products. If the relations are great, then there is a likelihood to get the raw material at the right time and cost. The speed with which you are capable of acquiring the inputs from your supplier to your firm also increases the value addition to the process (Porter, 1985).

Inbound logistics in the value chain implies the associations with providers. Inbound logistics is a standout amongst the most neglected angles in logistics administration. By thinking about inbound logistics, organizations can spare huge amounts of cash yet in addition the dependability of the creation turns out to be stronger. (Harrington, 2008). All things considered, logistics administration can increase both value preferred standpoint and cost favourable point for the firm: with the final target being getting to that level, the territories of centre ought to be limit use, inventory decrease and there ought to be a closer connect to the providers concerning arranging (Christopher, 2005). By using ICT an organization picks up a superior control over the procedures, quicker correspondence, littler interchanges costs, and nonstop stream of data, institutionalized interchanges methods, coordinated procedures and less blunders (Koyyakka, 2010).

2.3.2 Operations

Operations includes manufacturing the crude material to the final product. The more optimal your tasks, the greater your yield speed and quality. Speed and quality are critical in Operations (Otieno, 2010). Eventually, the organization can't prevail, if their supply does not meet market demands. Without including genuine value at this stage, it is impossible that you will discover accomplishment as time goes on. Here work is changed over to benefit.

Operation tasks include machining, bundling together, hardware support, testing and all other value-making exercises that change the contributions to the final item. Effective

plant activities, incorporation of suitable process, innovation, productive plant format and work process structure (Otieno, 2010).

2.3.3 Outbound Logistics

This deals with distribution. Good distribution means greater opportunity created to offer your own items in the market. The more items offered in the correct way, the more the value made for you (Köykkä, 2010). Scattering physically moves items from where they are created to where they are required. This development crosswise over space or separation increases the value of items. This value is regularly alluded to as place utility. Scattering is additionally a factor in time utility, it decides how quickly and reliably an item moves starting with one point then onto the next (Lambert, Stock, & Ellram, 1998). It is imperative that scattering framework be overseen so that monies are accessible for upkeep and interest in limit needs.

Blanchard (2004) takes note of that, the essential capacity of a warehouse is the storage, movement and information transfer. A noteworthy target is to give a perfect flow of product and adequate level of service between the maker and the client by furnishing warehouses at assigned areas with different inventory levels dependent on neighbourhood demand. There is a pattern that organizations focus on their centre business and because of that capacities, similar to logistics, are redistributed. Outsourcing logistics implies moving activities like transportation, handling of materials and the IT that controls these capacities, in logistics value chain to an organization that is hard practical experience in delivering these services (Köykkä, 2010).

2.3.4 Marketing and Sales

Marketing and Sales exercises are related with rousing purchasers to acquire items including channel distribution determination, public awareness, estimating and retail. In telecommunication, we have CEC (Customer Experience Centres), online accomplice entries, among different channels for overseeing contracts between the firm and its clients (Otieno, 2010). This incorporates advertising, sale of terminal gear, service exercises which maintain and progress the item's esteem, including repair administrations, client bolster, establishment, preparing, save parts administration, overhauling. In telecommunication, benefit provisioning relies upon the idea of the intervention. It additionally incorporates invoicing, customer service and manual administrations. System infrastructure tasks comprises of exercises related with keeping up and running a physical

and data framework. The exercises keep the system in an alarm station prepared to benefit client demands. The particular system foundation task exercises rely upon the idea of utilized framework (Otieno, 2010).

2.3.5 Service

Service undertakings augment and preserve the products or services value and performance after purchase; undertakings in this case are repair, customer support services, availability of spare parts, management and training. Fast feedback to client needs and wants and the quality of service staff and ongoing training. According to Chase, Jacobs and Aquilano (2006) service operations can be alienated into 2 main parts which are Front office and Back office, where the uninterrupted contact and interaction with a customer takes place and activities which support factory processes respectively.

Johnston and Clark, (2008) say that service operations are classified according to the process, variety and volume, forming 4 types: Capability processes (high process variety and low volume) provide high flexibility and adaptability to each customer's request, aiming to fulfil each separate request in the best way; Commodity processes (low process variety and high volume) are characterized by the standardized processes, striving to achieve the consistent quality and the availability of service; Complexity processes (high process variety and volume) strive to deliver high volumes with a high flexibility, though at a reasonable price and Simplicity processes (low process variety and volume) are the most common to a small niche players, or pilot projects and start-ups, which then grow and transform to a commodity or capability types of service processes.

2.3.6 Firm Infrastructure/General Administration

It consists of numeral activities, costs and assets involving overall management, planning, accounting, finance, regulatory and legal matters, security and safety, management information systems, quality management and formation of strategic alliances. Infrastructure, dissimilar to other support activities, typically supports the entire chain and not individual undertakings. Moreover, depending on whether a company is varied or not, company infrastructure may be allocated to the parent corporation or self – contained or a business unit (Porter, 1985). In diversified companies, infrastructural undertakings are typically split amid the business unit and corporate.

2.3.7 Procurement

It might sound like inbound logistics, however where logistics predominantly controls the movement, procurement controls the whole process of getting crude materials, the optimum approach to get them and consulting with the sellers. It also looks into the total procedure of inbound logistics. These are exercises engaged with getting asset contributions to the essential exercises (Porter, 1985).

A given procurement action can ordinarily be connected to a particular value action or exercise which it underpins, however frequently a procuring office serves many value exercises and procuring approaches spread over the firm. It prompts the advancement of shared "win-win" associations with providers, examination, and choice of substitute wellsprings of contributions to limit reliance on one provider. The expense of procurement exercises themselves for the most part speaks to a little if not immaterial segment of total expenses, but rather regularly largely affects the company's general expense and differentiation (Porter, 1985).

2.3.8 Human Resource Management (HRM)

It entails activities, costs and assets involved in the hiring, recruiting, training, compensation and development of all types of labourers; development of knowledge-based skills, labour relations activities. As elucidated by Porter (1985), HRM supports both individual support activities and primary undertakings and the whole value chain. Consequently, HRM undertakings transpire in diverse parts of a company, just like other support activities and the distribution of these undertakings can lead to unpredictable guidelines. Furthermore, the snowballing expenditures of HRM are seldom well comprehended nor are the compromises in diverse HRM expenses, for example wage equated to the fee of training and recruiting because of turnover.

In any case, the asset based resources is that these sources are progressively open and easy to mirror. Along these lines they are less noteworthy particularly in contrast with a mind boggling social framework for example a business framework. Perchance that that is along these lines, HRM might be a particularly indispensable fountain of reinforced superiority (Jackson & Schuler, 1995).

2.3.9 Technology Development

Each value activity expresses technology, be it expertise, processes, or technology exemplified in procedure equipment. Technology improvement consists of a variety of activities relating procedures and supply use including research and development. Porter (1985) noted that technology improvement is related to the manufacture of goods and its features support the whole chain, while other technology improvement is associated with specific primary or support activities.

Improvement fuses both process advancements and item/administration. Item progressions are items that are believed to be new by either the customer or the producer; process headways joins end-customers to wholesalers. Process advancement suggests new methods which either diminish the expense of creation or enable the age of new things (Dasgupta, Sahay, & Gupta, 2009). Notwithstanding the growing importance of improvement and mechanical capacities in an organization's improvement bearing, little is known about how mechanical progression in dissimilar affiliations is run by their innovative systems, the game plan that assists in gathering and firm of mechanical resources and limits (Dasgupta, Sahay, and Gupta, 2009).

2.4 Value Chain Management and Operational Performance

Value chain management is a practise felt only by customers depending on the effects on final product delivery. That is, either scarcities leading to increase in price, delay in delivery of service, or manufacturers not meeting the needs of customers (Simister, 2011). This has consequences on value chain practices adopted by firms and therefore impacts on business-to-business transactions.

Each firm has precise activities, routines and procedures that add different levels of value and costs and allow their firms to provide services or produce products to customers. The assortment of all these undertakings that generate a final output is called value chain. Porter, (1985) where the core is to use it as an investigation tool for strategic planning, established the theory of value chain. Value chain makes it probable to evaluate the organization's ability to make customer value through work undertakings (Nyandiwa, 2016) The value chain performance is a methodical way of categorizing all of the establishment's useful activities that generate value and cost. Porter, (1985) also described the value chain framework as a symbiotic system or web of activities,

associated by linkages. When the system is carefully managed, the associations are a basis of competitive advantage (Pathania-Jain, 2001).

Effective and efficient value chains can get products to the hands of end user's faster, new business, happier customers and leading to increased capacity (Porter, 1985; Nyandiwa, 2016). A chain is only as good as its frailest link, and once that link finally goes, the chain is unusable. Analyzing wherever frail links are can prevent incompetence (Aguko, 2014). As per RBV, ability of the company also assists a few firms to include value in customer value chain, nurture new items or extend in new profitable centres (Penrose, 1956). Social network theory advanced by Granovetter (1973), shows a vital role played in influencing learning as well as the diffusion of technology, opinions and behaviours which is core for telecommunication firms.

2.5 Empirical Studies and Knowledge Gap

From the above investigation, the value chain system can be applied as an intense device for the strategic forecasting and for construction of the hierarchical structure assuring a successful confident implementation. Framing an effective and efficient product and services for the organization, it is important to increase value in every step that the product moves (Porter, 1985). The value added at every step in the chain influences the performance of the firm. Along these lines, organizations increase marginal value for the service or product. If these operations run effectively the organization is guaranteed an improved performance and thus a competitive edge. Any disturbances and mutilations along the chain distort the execution at the various prominences along the line, which at the tail end impacts production.

Changwony (2012) investigated on a value chain method to stakeholder's examination and administration of tea exchange in Kenya. Odero (2006) examined the value chain and the upper hand in the corporate banking industry in Kenya in which he investigated the competing factors in the banks value chain that drew out benefit. Musau (2003) in his examinations on value chain administration improvement in assembling firms in Kenya uncovered that value chain administrations enable organizations to be more aggressive. Ikundo (2007) in his investigations of the view of pharmaceutical makers and end clients towards the pretended by pharmaceutical clients utilizing value the chain idea in Kenya uncovered that wholesalers were very respected by the users and producers alike because of the parts played in disseminating products to the clients. Aguko (2014) examined the

"Value chain analysis and organizational performance of beer manufacturing companies in Kenya". In his research, he observed how each facet of the value chain influenced the business performance. The various studies done and some published do not give a comprehensive study of the management of value chain practices adopted by telecommunication firms with the target of improving performance. Based on the literature review the study bridges a gap in terms of the temporal arrangement when the analyses were done in comparison to the previous researches, thus providing information and foundation for more research.

2.6 Summary of Literature Review

The theories of value chain management reviewed in this chapter include; Porter's model (Porter, 1985), Social network model (Granovetter, 1973) and Resource based view (Wernerfelt, 1984). This chapter has also looked at the determinants of financial performance of firms. It has also looked at results obtained by other researchers who studied value chain management and its influence on operational performance. Many studies have exposed value chain practices to be of importance in the attainment of the desired firm performance. No research has been conclusive on the effect of value chain management practices on the telecommunication firms in Kenyan.

2.7 Conceptual Framework

The figure 2.1 shows that operations, logistics, human resource management (HRM), technology, firm infrastructure, service and marketing, sales and procurement affect operational performance.

Value Chain Management Practices
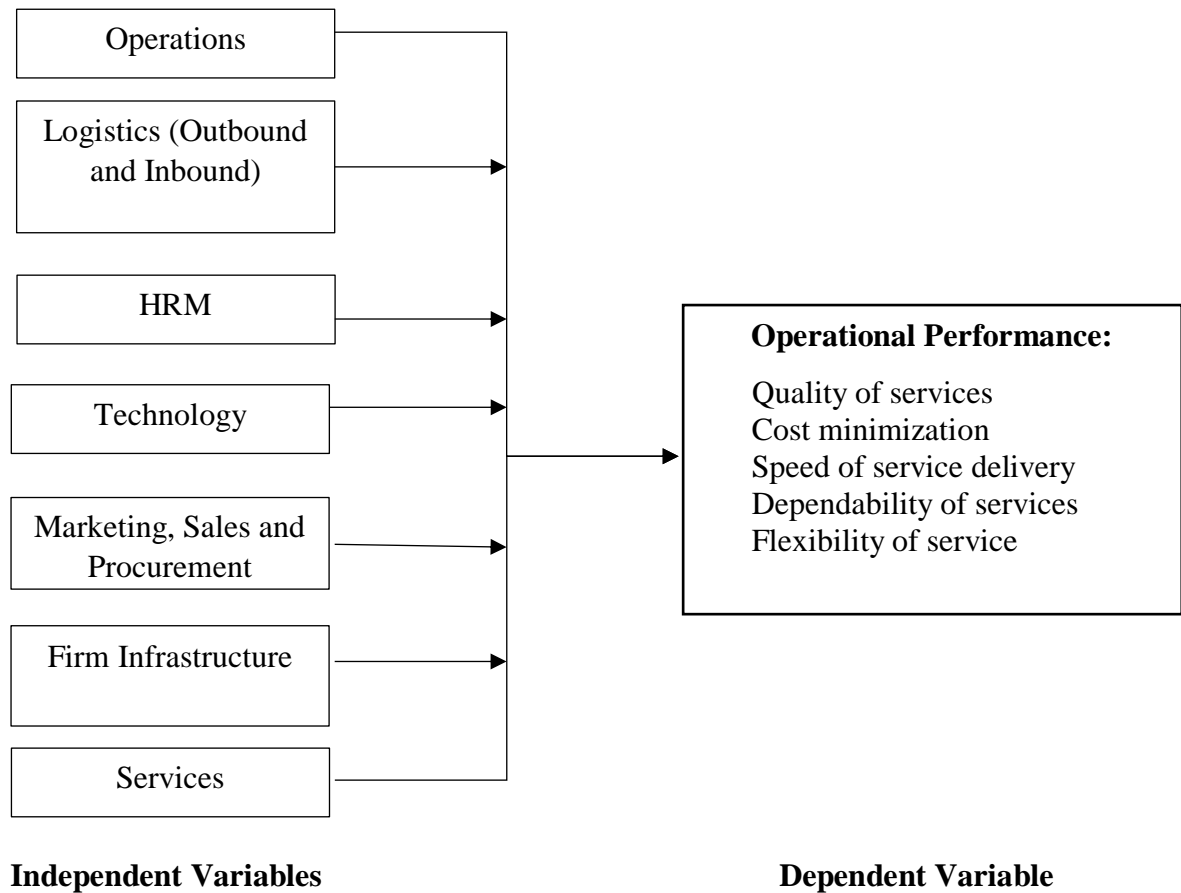
Independent Variables   **Dependent Variable**

Figure 2.1: **Conceptual framework**

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The resolve of this segment is to describe the methodology that was employed for this research. Encompassed in the section is an account of the proposed research design, population of interest, sample design, proposed data collection methods and analysis efforts.

3.2 Research Design

The study will employ a correlational research design. The design seeks to establish the relationship of a group to get the extent to which the characteristics vary along. It allows for determining direction and strength of the association between dependent (operational performance) and independent variables (value chain management practices) (Mertens, 1998).

3.3 Population of study

The target population for this study is 12,230 (cash transfer agents and outlet shops) in the telecommunication firms. Currently M-pesa and Airtel money agents in Nairobi are 10,000 and 2,000 respectively (Airtel Kenya, 2018a; Safaricom, 2017). There are 230 outlet shop: 152 Safaricom outlet shops (Safaricom, 2018), 52 outlets in Telkom Kenya Limited (Telkom Kenya, 2018) and 26 outlets in Airtel Kenya (Airtel Kenya, 2018b; "Bharti Airtel Ltd - Company History," 2016).

3.4 Sampling Design and Size

The sample was selected using proportionate simple random method for the cash transfer agents and to answer the questionnaires (Van Dalen, 1979). This method is appropriate, as it will ensure a greater representation in the sample of the population. The choice of respondents was on the basis of suitability sampling to allow the researcher to utilize accessibility and her judgment to select agents that best satisfied the research objectives. The sample size was arrived at using the following formula (Nassiuma, 2000).

Sample size $(n) = \{NCv^2\} / \{Cv^2 + (N-1) e^2\}$

Where:

e = tolerance at desired level of confidence (0.05) at 95% confidence level, Cv = coefficient of variation (0.5), N = target population.

Therefore: $n = (12, 230*0.5^2\} / \{0.5^2 + (12,229* 0.05^2\} = $ **100** respondents

100 respondents were computed as percentages of the firms' contribution to the total population.

3.5 Data Collection Procedure

Qualitative data was the main focus in the study. Primary data was collected using semi-structured questionnaires. It contained both closed ended and open-ended questions. The closed ended questions will use a 5 point Likert-type scale where 5- a great extent and 1- not at all showing the respondents understanding and perception of value chain activities. The questionnaire had two sections: section one for bio-data of the respondent and section two for value chain management practices and challenges faced by respondent's telecommunication firms. Secondary data was collected from journals and other literature sources. The instrument was distributed and dropped to be picked later to ensure that accurate data is collected and that all sectors of the target population are represented.

3.6 Data Analysis

The filled in questionnaires was reviewed for consistency and completeness and coded after removing errors and omissions. The coded data was entered into SPSS and analysed quantitatively and qualitatively using both SPSS and Microsoft office excel.

Qualitatively the data was sorted out into patterns, themes and categories to enable the researcher to make general declarations in terms of the observed characteristics hence conceptualization (Saunders, Lewis, & Thornhill, 2007). An in-depth qualitative analysis was carried out to find out the value chain management practices and their influence on performance and also to get relevant challenges faced in practicing value chain management. Tabulation involved calculating the number of cases that fall into various steps. Descriptive statistics like mean, standard deviation was produced in line with firm performance.

Standard deviation will signify the degree of variability in the feedback. The following multiple correlation analysis was used to determine the effect of the value chain activities on the organizational performance of telecommunication firms in Kenya:

$$Y = B_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon$$

Where:

Y= Operational performance;

B_0 = Constant;

ε = Standard Error

β_1 = Coefficient of Service; X_1 = Service,

β_2 = Coefficient of Logistics; X_2 = Logistics,

β_3 = Coefficient of Human resource management; X_3 = Human resource management,

β_4 = Coefficient of Technology; X_4 = Technology,

β_5 = Coefficient of Marketing, sales and procurement; X_5 = Marketing, sales and procurement,

β_6 = Coefficient of Operations; X_6 = Operations,

β_7 = Coefficient of Firm infrastructure; X_7 = Firm infrastructure

The multiple correlation coefficient R was used to test the strength of the relationship between the independent variables and the dependent variable. The coefficient of determination R^2 was used to indicate the proportion of the variance in operational performance that is explained by the linear model.

T-test was used where the P-values will define the importance of the independent variables in the regression model. Those variables with a p-value less than 0.05 were considered important in the equation. The choice of T-test was based on its simplicity of interpretation, robustness and ease of calculation making it a preferred choice in comparison to other tests.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the analysis, findings and discussions of the data collected. The results are categorized into six subsections: Response rate, Characteristics of respondents, reliability and validity tests, Diagnostic tests, Descriptive statistics of variable, Effect of value chain management on operational performance and Challenges faced in practicing value chain management practices.

4.2 Response rate

Out of the targeted one hundred questionnaires administered, only ninety-six were returned for data entry and analysis yielding a response rate of 96%. This shows that the data in this chapter is a good representation of the target population.

4.3 Characteristics of respondents

Most of respondents have been working in the telecommunications firms between five and ten years (66.67%) while those who had worked for less than five years composed 33.3%.
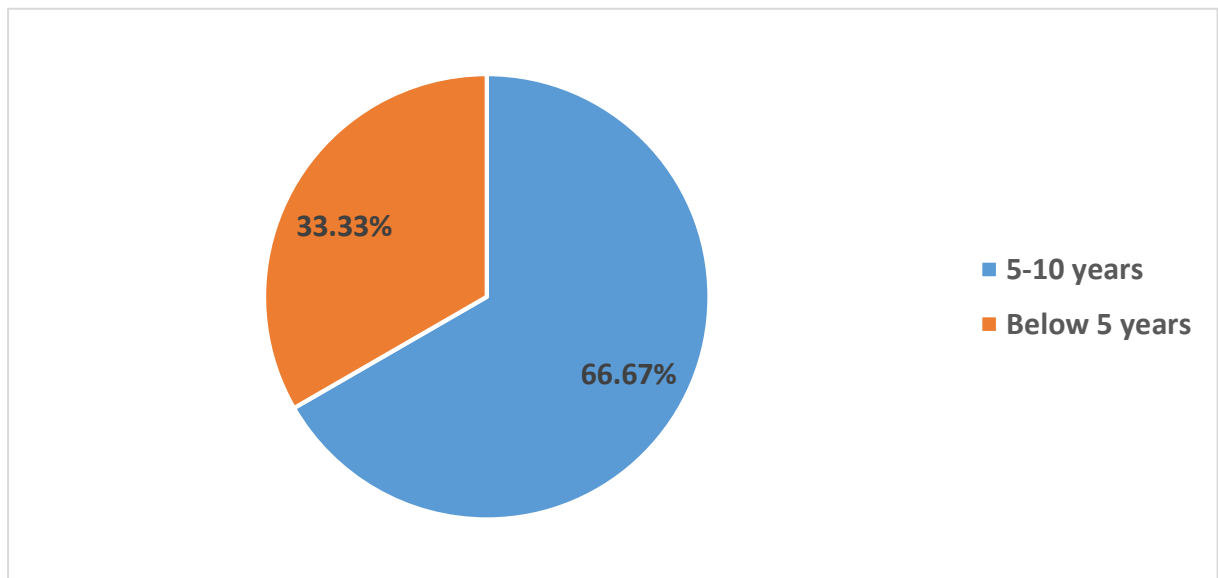
Figure 4.1: **Years of service**

The various stations that we visited were 2 categories: cash transfer (M-pesa and Airtel money) and outlet shops (customer care and calcare). Most cash transfer units had less than 10 employees (75%) which depended on the size of the facility and their requirements. In most cases there was only 1 person running the shop. The outlet shops

had varying number of employees also dependant on the location and size of the facility. Most had over 200 employees (16.67%) while a few had between 51 and 100 employees.

Table 4.1: Employee Type of Facility

Number of employees	Respondents	Type
<10	75.00%	Cash transfer
>200	16.67%	Outlet shops
51-100	8.33%	Outlet shops
Grand Total	**100.00%**	

The various customer care units had equal representation from the 3 firms; Safaricom, Telkom and Airtel. M-pesa had the highest number of respondents (41.67%) and the least was Airtel money (8.33%).
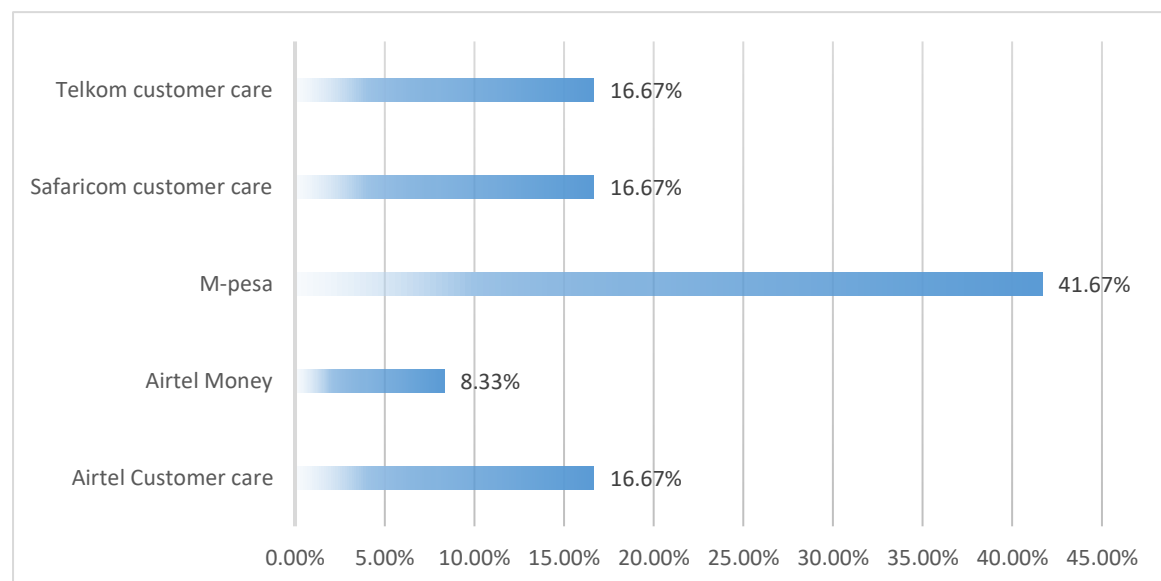
Figure 4.2: Telecommunications firm's representation

4.4 Reliability and Validity

Reliability and validity tests were conducted on the data to see whether reliable and valid conclusions could be drawn from the data collected.

4.4.1 Reliability Test

This was done to ensure that the instrument for collection had internal reliability. Cronbach's alpha was used on the Nine variables which include Services, Marketing, Sales and Procurement, Operations, Firm Infrastructure, HRM, Logistics, Operational performance and Challenges faced in practicing value chain management practices. The value of 0.835 (table 4.2) showed that there is adequate reliability on the instrument used.

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Table 4.2: Reliability Test

Cronbach's Alpha	N of Items
.835	9

4.4.2 Validity Test

Pearson correlation coefficient was used to determine the validity of the data. The Pearson coefficient in relation to Operational performance for Services, Marketing, Sales and Procurement, Operations, Firm Infrastructure, HRM, Technology and Logistics are 0.763 0.431, 0.335, 0.521, 0.505, 0.568 and 0.479 respectively. All the coefficient values are positive showing a correlation between independent and dependent variables of the study. From table 4.3, the p values for Services, Marketing, Sales and Procurement, Firm Infrastructure, HRM, Technology and Logistics are all 0.000 while Operations has a p value of 0.001. All these values are less than 0.05 hence they are all valid.

Table 4.3: Validity Test

		Service	Logistics	HRM	Technology	Marketing, sales and procurement	Operations	Firm infrastructure	Operational performance
Service	Pearson Correlation	1	.477**	.730**	.768**	.716**	.526**	.840**	.763**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
Logistics	Pearson Correlation	.477**	1	.393**	.579**	.458**	.906**	.443**	.479**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
HRM	Pearson Correlation	.730**	.393**	1	.343**	.164	.464**	.400**	.505**
	Sig. (2-tailed)	.000	.000		.001	.111	.000	.000	.000
Technology	Pearson Correlation	.768**	.579**	.343**	1	.906**	.655**	.950**	.568**
	Sig. (2-tailed)	.000	.000	.001		.000	.000	.000	.000
Marketing, sales and procurement	Pearson Correlation	.716**	.458**	.164	.906**	1	.595**	.954**	.431**
	Sig. (2-tailed)	.000	.000	.111	.000		.000	.000	.000
Operations	Pearson Correlation	.526**	.906**	.464**	.655**	.595**	1	.602**	.335**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.001
Firm infrastructure	Pearson Correlation	.840**	.443**	.400**	.950**	.954**	.602**	1	.521**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000

4.5 Diagnostic Tests

Several diagnostic tests were carried out. The tests included Autocorrelation, Multicollinearity test, Heteroscedasticity and Normality Test for the data collected.

4.5.1 Autocorrelation

Durbin Watson was employed to test autocorrelation. The residuals from the regression analysis were used as shown below. From Durbin-Watson and statistics in table 4.5, the maximum and minimum standardized residual values are -1.91616 and 1.42650 respectively. Durbin Watson value is 1.319 (table 4.4).

Table 4.4: Durbin- Watson

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.908[a]	.825	.811	.38971	1.319

From table 4.5, the Durbin Watson ranges between -2.549 and 1.875 indicating a linear relationship between variables.

Table 4.5: Durbin-Watson Residual

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.7735	4.7605	3.5750	.51901	96
Residual	-1.91616	1.42650	.00000	.73205	96
Std. Predicted Value	-1.544	2.284	.000	1.000	96
Std. Residual	-2.519	1.875	.000	.962	96

4.5.2 Multicollinearity Test

The multicollinearity test was done on the independent variables. The independent variables' collinearity was determined by use of Variance inflation factor. The results are shown below. From table 4.6 below the Variance Inflation Factor values indicated that there was no multicollinearity since all the VIF values for the independent variables were less than 10. Firm Infrastructure had a VIF value of 1.24, Operations had a VIF value of

4.725, Marketing, Sales and Procurement had a value of 8.563, Services had a value of 5.454, Logistics had a value of 2.539, HRM had a value of 3.095 and finally Technology had a value of 7.014. Since none of the independent variables was strongly related to the other as measured by VIF they were all used for the analysis of the study.

Table 4.6: Multicollinearity Test

	Collinearity Statistics	
Model	**Tolerance**	**VIF**
1 (Constant)		
Service	.183	5.454
Logistics	.394	2.539
HRM	.323	3.095
Technology	.143	7.014
Marketing, sales and procurement	.117	8.563
Operations	.212	4.725
Firm Infrastructure	.805	1.243

4.5.3 Heteroscedasticity

Glejser test was applied to determine heteroscedasticity. From the table 4.7, we can see that services, logistics, HRM, technology, marketing, sales and procurement, operations and firm infrastructure have p values of 0.818, 0.723, 0.220, 0.719, 0.392, 0.971 and 0.51 respectively. All these p values are greater than 0.05 hence we conclude that heteroscedasticity is not present in the data.

Table 4.7: Heteroscedasticity Test

Model		t	Sig.
1	(Constant)	1.939	.056
	Service	-.231	.818
	Logistics	.355	.723
	HRM	-1.236	.220
	Technology	.362	.719
	Marketing, sales and procurement	.860	.392
	Operations	.036	.971
	Firm Infrastructure	-1.985	.051

4.5.4 Normality Test

This test was done to test the hypothesis that the data is normally distributed. Kolmogorov- Smirnov is the test of greatest discrepancy between the Normal cumulative distribution and the sample cumulative distribution. From table 4.8, we see that the p value (0.157) is higher than 0.05 and therefore, we conclude that the data is normally distributed.

Table 4.8: Normality Test

	Kolmogorov-Smirnov[b]		
	Statistic	**df**	**Sig.**
Operational performance	.217	11	.157

4.6 Descriptive Analysis of the Study Variables

The researcher tries to find the degree to which the firms had embraced value chain management practices. Respondents were needed to specify the degree to which the different firms had adopted value chain management practices. The value chain management practices are implemented in the activities relating to logistics, services, firm infrastructure, technology, human resource, operations, marketing, sales and procurement. The following sections deliberate the outcomes. A Likert scale was used where 1= Not at all; 2 = Small Extent; 3 = Moderate Extent; 4 = Average Extent and 5 = Great Extent.

4.6.1 Services

The research wanted to establish the extent to which services has been taken up by the companies. From table 4.9 the most commonly practiced service aspect customer satisfaction score (3.75). Good call care services, reduced backlog of complaints received, short time taken to repair faults and few emails handled in a month had means of 3.42, 3.42, 3.17 and 3.0 respectively.

Table 4.9: **Services**

Statements	N	Mean	Std. Deviation
Short time to repair a fault	96	3.17	1.633
Few calls/emails handled in a month	96	3.00	1.881
Several complaints /customers waiting for service	96	3.42	1.665
Good call centre service level	96	3.42	1.262
Practice customer satisfaction score	96	3.75	1.369
Valid N (list wise)	**96**	**3.35**	**1.562**

4.6.2 Logistics

The research wanted to establish the extent to which logistical aspects has been adopted by the companies. From table 4.10 the most commonly practiced logistical activity is Bills processed correctly/Invoice-related customer questions (3.17). High number of orders, short delivery time per order and sharing of real time information with suppliers had means of 2.75, 2.50, and 2.0 respectively. The least was high percentage order-errors with a mean of 1.75.

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Table 4.10: Logistics

Statements	N	Mean	Std. Deviation
Bills processed correctly/Invoice-related customer questions	96	3.17	1.470
High number of orders	96	2.75	1.170
Short delivery time per order	96	2.50	1.451
We share real-time sales information with our suppliers	96	2.00	1.298
High percentage of order-errors	96	1.75	1.369
Valid N (list wise)	**96**	**2.43**	**1.352**

4.6.3 Human Resource Management

The research wanted to establish the extent to which good human resource practices has been adopted by the companies. From table 4.11, the most commonly practiced HRM activity is percentage of employees trained (4.0). Effectiveness of training, employee productivity ratio, rates of internal jobs hire, salary competitiveness ration and percentage cost of workforce had means of 3.33, 3.0, 2.83, 2.25and 2.0 respectively. The least was health care expense per Current employee with a mean of 1.83.

Table 4.11: **Human Resource Management**

Statements	N	Mean	Std. Deviation
Percentage of Cost of Workforce	96	2.00	1.231
Salary Competitiveness Ratio (SCR)	96	2.25	1.487
Health Care Expense per Current Employee	96	1.83	1.287
Rate of Internal Job Hires	96	2.83	1.873
Percentage of Employees Trained	96	4.00	1.480
Effectiveness of Training	96	3.33	1.554
Employee Productivity Rate	96	3.00	1.086
Valid N (list wise)	**96**	**2.75**	**1.428**

4.6.4 Technology

The research wanted to establish the extent to which technology has been adopted by the companies. From table 4.12, the most commonly adopted technology is organization strives to improve service delivery (2.83). Network services availability and high voice calls completion rate had means of 2.67 and 2.08. The company uses technology to drive business, we have an up-to-date and relevant ICT and We have integrated all our inventory management functions with information communication technology (ICT) had each a mean of 1.92.

Table 4.12: **Technology**

Statements	N	Mean	Std. Deviation
The organization strives to improve service delivery	96	2.83	1.918
The company uses technology to drive business	96	1.92	1.614
We have an up-to-date and relevant ICT policy in the organization	96	1.92	1.614
We have integrated all our inventory management functions with information communication technology (ICT)	96	1.92	1.614
Network service availability	96	2.67	1.659
High voice call completion rate	96	2.08	1.449
Valid N (list wise)	**96**	**2.22**	**1.644**

4.6.5 Marketing, Sales and Procurement

The research wanted to establish the extent to what sales and marketing strategies and procurement practices have been adopted by the companies. From table 4.13, the most commonly practiced marketing, sales and procurement activity is we have a huge number of opportunities (3.25). We have a high number of contacts made and Product's price and description are available to our customers' and printed on a receipt and thus Customers receive a fully-itemized receipt had a mean of 3.0 and 2.83 respectively. There is a high conversion from contact to lead, high number of deals won than lost and accurate, up-to-date and real-time sales analysis information is always available for managers and sales teams had means of 2.67, 2.58, and 2.42 respectively. We use electronic data inter-change (EDI) to update sales and inventory records and tracking new orders each had a mean of 2.0. We have high website visits per day and Ensure customers are visited/contracted had means of 1.67 each. The least was we use social media as our main marketing strategy with a mean of 1.58.

Table 4.13: **Marketing, Sales and Procurement**

Statements	N	Mean	Std. Deviation
We use social media as our main marketing strategy	96	1.58	1.121
We have high website visits per day	96	1.67	1.319
We have a huge number of opportunities	96	3.25	1.747
We have a high number of contacts made	96	3.00	1.642
There is a high conversion from contact to lead	96	2.67	1.554
High number of deals won than lost	96	2.58	1.665
Product's price and description are available to our customers' and printed on a receipt and thus Customers receive a fully-itemized receipt	96	2.83	1.918
Accurate, up-to-date and real-time sales analysis information is always available for managers and sales teams	96	2.42	1.763
We use electronic data inter-change(EDI) to update sales and inventory records	96	2.00	1.741
Track new orders	96	2.00	1.741
Ensure customers are visited/contracted	96	1.67	1.319
Valid N (list wise)	**96**	**2.33**	**1.594**

4.6.6 Operations

The research wanted to establish the extent to what kind of operations formed the companies' base. From table 4.14, we have an activity Standard Operating Procedure (SOP) on all tasks performed on services up until their sale and services offered are categorized into either group A, B, C in accordance with their demand/ shilling usage had means of 1.50 and 1.42 respectively. The least was pricing of our services takes into consideration all the tasks performed on the product until it is sold to the customer with a mean of 1.33.

Table 4.14: **Operations**

Statements	N	Mean	Std. Deviation
We have an activity Standard Operating Procedure (SOP) on all tasks performed on services up until their sale	96	1.50	1.196
Services offered are categorized into either group A, B, C in accordance with their demand/ shilling usage	96	1.42	.959
Pricing of our services takes into consideration all the tasks performed on the product until it is sold to the customer	96	1.33	1.111
Valid N (list wise)	**96**	**1.42**	**1.089**

4.6.7 Firm Infrastructure

The research wanted to establish the extent to what kind of infrastructure do the companies have. From table 4.15, the most commonly practiced firm infrastructure activity Compliance with regular inspection plans (2.33). Occupational health and safety policy is integrated in the company policy, improve programs and services for vulnerable workers and enhanced health/safety culture and meet mandatory health/safety training requirements had means of 2.0, 1.92, and 1.83 respectively. The least was providing guidance to researchers on compliance with all applicable relating legislation with a mean of 1.50.

Table 4.15: **Firm Infrastructure**

Statements	N	Mean	Std. Deviation
Providing guidance to researchers on compliance with all applicable relating legislation	96	1.50	1.196
Occupational health and safety policy is integrated in the company policy	96	2.00	1.741
Compliance with regular inspection plans	96	2.33	1.659
Enhanced health/safety culture and meet mandatory health/safety training requirements	96	1.83	1.526
Improve programs and services for vulnerable workers	96	1.92	1.614
Valid N (list wise)	**96**	**1.92**	**1.547**

4.6.8 Operational Performance

The research wanted to establish the various operational performance indicator practice. From table 4.16 the firm adapts well to external environment changes (4.17), Customers are satisfied with our firm's performance (4.08) and Employees are clear about firm's vision and strategy (4.08) were the leading indicators. Customers are satisfied with Value chain management Practices, the firm enjoys good reputation, Suppliers satisfied with Value chain management Practices, we evaluate the performance of the Value chain management practices, my company is pursuing best Value Chain Management Practices and We are successful in dealing with Value chain management Practices had a mean of 3.92, 3.67, 3.33, 3.33, 3.25 and 3.17 respectively. The lowest ranked was Over the years the firm has realized cost reduction with a mean of 2.75.

Table 4.16: **Operational Performance**

Statements	N	Mean	Std. Deviation
We evaluates the performance of the Value chain management practices	96	3.33	1.607
We are successful in dealing with Value chain management Practices	96	3.17	1.633
Customers are satisfied with Value chain management Practices	96	3.92	1.715
Suppliers satisfied with Value chain management Practices	96	3.33	1.851
My company is pursuing best Value Chain Management Practices	96	3.25	1.930
Customers are satisfied with our firm's performance	96	4.08	.867
The firm enjoys good reputation	96	3.67	1.441
The firm adapts well to external environment changes	96	4.17	.902
Employees are clear about firm's vision and strategy	96	4.08	1.121
Over the years the firm has realized cost reduction	96	2.75	1.648
Valid N (list wise)	**96**	**3.58**	**1.471**

4.7 Descriptive Statistics of Independent Variables

The researcher abridged the various value chain management practices in order to find out which was most important to the companies. The practices are services, HRM, logistics, technology, firm infrastructure, operation, marketing, sales and procurement. From table 4.17, the value chain management practices were analysed to determine which practices are vital to the firms. The results show that services with a mean of 3.35 is perceived as the most important practice. This is followed by HRM, logistics, marketing, sales and procurement, technology then firm infrastructure with a mean of 2.75, 2.433, 2.33, 2.22 and 1.916 respectively. The least implemented value chain management practice is operations with a mean of 1.4167.

Table 4.17: Descriptive statistics for independent variables

Variables	N	Mean	Std. Deviation
Service	96	3.3500	.82946
HRM	96	2.7500	1.13550
Logistics	96	2.4333	.89850
Marketing, sales and procurement	96	2.3333	1.34120
Technology	96	2.2222	1.43202
Firm infrastructure	96	1.9167	1.41084
Operations	96	1.4167	1.05187
Valid N (list wise)	**96**	**2.3460**	**1.15705**

4.8 Effect of Value Chain Management Practices On Operational Performance

This section outlines the regression analysis done to determine if value chain management practices had an effect on operational performance. The dependent variable in the regression analysis is operational performance. Independent variables are services, operations, HRM, technology, firm infrastructure, logistics and marketing, sales and procurement. The dependent and independent variable means were used to perform regression analysis as in table 4.15. From table 4.18, the coefficient of multiple determination is 0.811; therefore, about 81.1% of the variation in operational performance is clarified by firm infrastructure, human resource management (HRM), logistics, services, operations, technology, marketing, sales and procurements and 18.9% variation is from other external factors not in the model. The regression equation is therefore important for making predictions since the value of R^2 is closer to 1. A strong positive (0.908) correlation exists between the independent and dependant variables.

Table 4.18: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.908ᵃ	0.825	0.811	0.38971	0.825	59.386	7	88	0.00

In table 4.19, the significant value of the model is 0.000 which is less than 0.05 level of significance, thus there exists enough evidence to conclude that the predictor variables are useful for predicting operational performance; therefore, the model us useful. Regression summary is given in table 4.20.

Table 4.19: **Analysis of Variance**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	63.135	7	9.019	59.386	.000ᵇ
	Residual	13.365	88	0.152		
	Total	76.5	95			

 From the table 4.20 output, the regression equation is:

$Y = -1.544 + 2.753X_1 - 0.744X_2 - 0.661X_3 + 1.094X_4 - 0.151X_5 + 0.660X_6 - 1.819X_7$

A factor increase in services would result in an increase in operational performance by 2.753, unit change in operations would increase the operational performance by 0.660 and a unit decrease in technology would result in a decrease in operational performance. A unit increase in logistics would lead to a decrease in the operational performance by 0.744, increase in HRM would lead to a decrease in operational performance by 0.661 and a unit increase in marketing, sales and procurement would result in a reduction in operational performance by 0.15. The information shows that a positive relationship exists between operational performance and some of the independent variables.

Table 4.20: **Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	-1.544	0.49		-3.151	0.002
	Service	2.753	0.367	2.545	7.502	0
	Logistics	-0.744	0.426	-0.745	-1.746	0.084
	HRM	-0.661	0.198	-0.837	-3.345	0.001
	Technology	1.094	0.333	1.746	3.285	0.001
1	Marketing, sales and procurement	-0.151	0.421	-0.226	-0.359	0.72
	Operations	0.66	0.31	0.773	2.131	0.036
	Firm infrastructure	-1.819	0.769	-2.859	-2.366	0.02

4.9 Challenges of Practicing Value Chain Management

The respondents were tied to a list of challenges that face the practicing of value chain management practices. Table 4.18 below shows that the main challenge of adoption of value chain management practices comprise cost reduction, trailed by time to market cost-optimized platform with new technology through sales and marketing, excellent procurement processes and ability to get fair prices with suppliers by having more than one supplier with means of 2.58, 2.17, 1.83 and 1.75 respectively. This is closely trailed by ability to deliver time to market cost-optimize platforms with new technologies competent management team and R&D people that understand the mobile industry, excellent coordination with R&D and sourcing department to understand what buy or develop in-house, signed contracts with customers that generate high volumes to go hand-by-hand with standardization organizations and deliver a cost-optimize platform solution through the converged network stable and well tested product offering with a mean of 1.50, 1.50, 1.50 and 1.58 respectively. The least challenges are successfully managing to

define the boundaries in the value chain where it has the core competence and ability to develop, integrate and test complex technologies in short time with a "small" organization with a mean of 1.42.

Table 4.21: **Descriptive statistics for Challenges in practicing value chain management practices**

Practices	N	Mean	Std. Deviation
No cost-optimized platform with new technology through sales and marketing	96	2.17	1.684
Ability to get fair prices with suppliers by having more than one supplier	96	1.75	1.369
Deliver a cost-optimize platform solution through the converged network Stable and well tested product offering	96	1.58	1.194
Ability to develop, integrate and test complex technologies in short time with a "small" organization	96	1.42	1.121
Ability to deliver Time To Market Cost-optimize platforms with new technologies Competent Management Team and R&D people that understand the mobile industry	96	1.50	1.196
Successfully manage to define the boundaries in the value chain where it has the core competence	96	1.42	1.121
Signed contracts with customers that generate high volumes To go hand-by-hand with standardization organizations	96	1.50	1.196
Excellent coordination with R&D and sourcing department to understand what buy or develop in-house	96	1.50	1.196
Excellent procurement processes	96	1.83	1.526
Over the years the firm has realized cost reduction	96	2.58	1.506
Valid N (list wise)	**96**	**1.73**	**1.311**

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the research results, conclusions, recommendations made on the study and limitations of the study. The conclusions are drawn from the research findings and discussions. Further, the chapter also gives suggestions for further study in matters relating to value chain management practices.

5.2 Summary of Findings

The data in chapter four enabled the study to evaluate the effects of value chain management practices on operational performance and the challenges faced in practicing the value chain management in telecommunication firms in Kenya.

5.2.1 Effect of Value Chain Management Practices On Operational Performance

Pearson moment correlation was used to test for the validity of the data. The Pearson coefficient in relation to Operational performance for Services, Marketing, Sales and Procurement, Operations, Firm Infrastructure, HRM, Technology and Logistics are positive showing a correlation between independent and dependent variables of the study. From table 4.3, the p values for Services, Marketing, Sales and Procurement, Firm Infrastructure, HRM, Technology, Logistics and Operations are less than 0.05 hence they are all valid. Crochbach's alpha was used on the Nine variables which include Services, Marketing, Sales and Procurement, Operations, Firm Infrastructure, HRM, Logistics, Operational performance and Challenges faced in practicing value chain management practices. The value of 0.835 showed that there is adequate reliability on the instrument used. Diagnostics tests were done on the data. The results showed the Variance Inflation Factor values indicated that there was no multicollinearity since all the VIF values for the independent variables were less than 10. Firm Infrastructure had a VIF value of 1.24, Operations had a VIF value of 4.725, Marketing, Sales and Procurement had a value of 8.563, Services had a value of 5.454, Logistics had a value of 2.539, HRM had a value of 3.095 and finally Technology had a value of 7.014. Since none of the independent variables was strongly related to the other as measured by VIF they were all used for the analysis of the study. Durbin- Watson and statistics showed that the maximum and minimum standardized residual values are -1.91616 and 1.42650 respectively. Durbin

Watson value is 1.319. Therefore, the Durbin- Watson ranges between -2.549 and 1.875 indicating a linear relationship between variables. Glejser test was applied to determine heteroscedasticity. From table 4.7, all the p values are greater than 0.05 hence we concluded that heteroscedasticity was not present in the data. Kolmogorov- Smirnov was done to test normality of data. The p value (0.157) was higher than 0.05 and therefore, we concluded that the data was normally distributed.

Services statements (table 4.9) showed that the most commonly practiced service aspect customer satisfaction score (3.75). Good call care services, reduced backlog of complaints received, short time taken to repair faults and few emails handled in a month had means of 3.42, 3.42, 3.17 and 3.0 respectively. Logistics statements showed that the most commonly practiced logistical activity is Bills processed correctly/Invoice-related customer questions (3.17). High number of orders, short delivery time per order and sharing of real time information with suppliers had means of 2.75, 2.50, and 2.0 respectively. The least was high percentage order-errors with a mean of 1.75. From table 4.8 the most commonly practiced HRM activity is percentage of employees trained (4.0). Effectiveness of training, employee productivity ratio, rates of internal jobs hire, salary competitiveness ration and percentage cost of workforce had means of 3.33, 3.0, 2.83, 2.25and 2.0 respectively. The least was health care expense per Current employee with a mean of 1.83. HRM statements showed that the most commonly practiced HRM activity is percentage of employees trained (4.0). Effectiveness of training, employee productivity ratio, rates of internal jobs hire, salary competitiveness ration and percentage cost of workforce had means of 3.33, 3.0, 2.83, 2.25and 2.0 respectively. The least was health care expense per Current employee with a mean of 1.83. Technology statements showed that the most commonly adopted technology is organization strives to improve service delivery (2.83). Network services availability and high voice calls completion rate had means of 2.67 and 2.08. The company uses technology to drive business, we have an up-to-date and relevant ICT and we have integrated all our inventory management functions with information communication technology (ICT) had each a mean of 1.92.

Marketing, Sales and Procurement statements showed that the most commonly practiced marketing, sales and procurement activity is we have a huge number of opportunities (3.25). We have a high number of contacts made and Product's price and description are available to our customers' and printed on a receipt and thus Customers receive a fully-

itemized receipt had a mean of 3.0 and 2.83 respectively. There is a high conversion from contact to lead, high number of deals won than lost and accurate, up-to-date and real-time sales analysis information is always available for managers and sales teams had means of 2.67, 2.58, and 2.42 respectively. We use electronic data inter-change (EDI) to update sales and inventory records and tracking new orders each had a mean of 2.0. We have high website visits per day and Ensure customers are visited/contracted had means of 1.67 each. The least was we use social media as our main marketing strategy with a mean of 1.58. Operations statements showed that the we have an activity Standard Operating Procedure (SOP) on all tasks performed on services up until their sale and services offered are categorized into either group A, B, C in accordance with their demand/ shilling usage had means of 1.50 and 1.42 respectively. The least was pricing of our services takes into consideration all the tasks performed on the product until it is sold to the customer with a mean of 1.33. Firm Infrastructure statements showed that the most commonly practiced firm infrastructure activity Compliance with regular inspection plans (2.33). Occupational health and safety policy is integrated in the company policy, improve programs and services for vulnerable workers and enhanced health/safety culture and meet mandatory health/safety training requirements had means of 2.0, 1.92, and 1.83 respectively. The least was providing guidance to researchers on compliance with all applicable relating legislation with a mean of 1.50.

Operational Performance statements (table 4.16) showed that the firm adapts well to external environment changes (4.17), Customers are satisfied with our firm's performance (4.08) and Employees are clear about firm's vision and strategy (4.08) were the leading indicators. Customers are satisfied with Value chain management Practices, the firm enjoys good reputation, Suppliers satisfied with Value chain management Practices, we evaluate the performance of the Value chain management practices, my company is pursuing best Value Chain Management Practices and We are successful in dealing with Value chain management Practices had a mean of 3.92, 3.67, 3.33, 3.33, 3.25 and 3.17 respectively. The lowest ranked was over the years the firm has realized cost reduction with a mean of 2.75. From table 4.17, the value chain management practices were analysed to determine which practices are vital to the firms. The results show that services with a mean of 3.35 is perceived as the most important practice. This is followed by HRM, logistics, marketing, sales and procurement, technology then firm infrastructure

with a mean of 2.75, 2.433, 2.33, 2.22 and 1.916 respectively. The least implemented value chain management practice is operations with a mean of 1.4167.

The results show that a coefficient of correlation of 0.908 connoting that there is strong relationship between value chain management practices and operational performance. The equation shows that an increase in services would result in an increase in operational performance by 2.753, unit change in operations would increase the operational performance by 0.660 and a unit decrease in technology would result in a decrease in operational performance. A unit increase in logistics would lead to a decrease in the operational performance by 0.744, increase in HRM would lead to a decrease in operational performance by 0.661 and a unit increase in marketing, sales and procurement would result in a reduction in operational performance by 0.15. The coefficient of multiple determination is 0.811; therefore, about 81.1% of the variation in operational performance is explained by Independent variables and 18.9% variation is from other external factors not in the model.

5.2.2 Challenges Faced in Practicing Value Chain Management Practices

The results (Table 4.21) showed that the main challenge of adoption of value chain management practices comprise cost reduction, trailed by time to market cost-optimized platform with new technology through sales and marketing, excellent procurement processes and ability to get fair prices with suppliers by having more than one supplier with means of 2.58, 2.17, 1.83 and 1.75 respectively. This is closely trailed by ability to deliver time to market cost-optimize platforms with new technologies competent management team and R&D people that understand the mobile industry, excellent coordination with R&D and sourcing department to understand what buy or develop in-house, signed contracts with customers that generate high volumes to go hand-by-hand with standardization organizations and deliver a cost-optimize platform solution through the converged network stable and well tested product offering with a mean of 1.50, 1.50, 1.50 and 1.58 respectively. The least challenges are successfully managing to define the boundaries in the value chain where it has the core competence and ability to develop, integrate and test complex technologies in short time with a "small" organization with a mean of 1.42.

5.3 Study Conclusions

The study explored the effect of value chain management practices on operational performance in telecommunication firms in Kenya. The study objectives were to establish the effect of value chain management practices on the performance of telecommunication firms in Kenya and to determine the challenges of practicing value chain management by telecommunication firms in Kenya. The study found that telecommunications firm's carryout value chain management practices at different levels. The study shows that value chain management practices have a positive effect on operational performance. The study also concludes main challenge of adoption of value chain management practices comprise cost reduction, trailed by time to market cost-optimized platform with new technology through sales and marketing, excellent procurement processes and ability to get fair prices with suppliers by having more than one supplier with consistent with the study conducted on value chain analysis in Telkom Kenya.

5.4 Study Recommendations

The study has revealed the extent to which value chain management practices are applied in Telecommunication firms in Kenya. In light of the findings and conclusion of the study, the researcher vouches for the uptake of value chain management practices because there are positive results for various firms and the current status of value chain management practices can be improved further and challenges overcome. The following are the recommendations.

Good policies are a sign of good governance and thus encourage good practices. For policy makers in the various levels should develop policies that incentivises adoption of value chain management practices at various level thus ensuring telecommunication firms are more rewarding.

The various telecommunications firms can organize for interactive sessions with the consumers of their services to be able to receive a one on one open session for them to air their concerns and views for the betterment of services being offered.

5.5 Limitations of the Study

The study was conducted within the confines of limitations. The study covered only 3 telecommunications firms in Kenya yet there are other upcoming ones. Time and financial constraints we a hindrance in some cases for example, some respondents did not

have time to respond to the questionnaires. Finances affected commuting hence our setting was in urban settings and their outskirts.

5.6 Suggestions for Further Study

Further study can be done in the following areas: Firstly, value chain management practices are a vital for any organization and relationship to operational performance via other models can be explored. Secondly, the application of value chain management practices has been covered in this research. Study on customer satisfaction and supplier satisfaction with their interactions with telecommunications firms in primary and secondary activities in the value chain.

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APPENDICES

Appendix I: Questionnaire

Section I: General Information

Please answer all the questions honestly and exhaustively by putting a tick (√) in the appropriate answer that closely matches your view.

1. Name of your firm: …………………………
2. Number of years served at the firm:

[ ] below 5 years   [ ] 5-10 years   [ ] 15 years &above

3. Number of employees in your organization

   [ ] <10   [ ] 10-20   [ ] 21-30   [ ] 31-50

   [ ] 51-100   [ ] 101-200   [ ] >200

Section II: VALUE CHAIN MANAGEMENT PRACTICES

Kindly indicate on a scale of 1-5 by ticking appropriately, the extent to which the following strategic inventory management practices have been implemented in your firm (Where: 1= Not at all; 2 = Small Extent; 3 = Moderate Extent; 4 = Average Extent and 5 = Great Extent)

A: Services		1	2	3	4	5
i.	Short time to repair a fault					
ii.	Few calls/emails handled in a month					
iii.	Several complaints /customers waiting for service					
iv.	Good call centre service level					
v.	Practice customer satisfaction score					
B: Logistics						
i.	Bills processed correctly/Invoice-related customer questions					
ii.	High number of orders					
iii.	Short delivery time per order					
iv.	We share real-time sales information with our suppliers					
v.	High percentage of order-errors					

C: HRM		1	2	3	4	5
i.	Percentage of Cost of Workforce					
ii.	Salary Competitiveness Ratio (SCR)					
iii.	Health Care Expense per Current Employee					
iv.	Rate of Internal Job Hires					
v.	Percentage of Employees Trained					
vi.	Effectiveness of Training					
vii.	Employee Productivity Rate					
D: TECHNOLOGY						
i.	The organization strives to improve service delivery.					
ii. .	The company uses technology to drive business					
iii.	We have an up-to-date and relevant ICT policy in the organization					
iv.	We have integrated all our inventory management functions with information communication technology (ICT)					
v.	Network service availability					
vi.	High voice call completion rate					
E: Marketing, Sales and Procurement		1	2	3	4	5
i.	We use social media as our main marketing strategy					
ii.	We have high website visits per day					
iii.	We have a huge number of opportunities					
iv.	We have a high number of contacts made					
v.	There is a high conversion from contact to lead					
vi.	High number of deals won than lost					
vii.	Product's price and description are available to our customers' and printed on a receipt and thus Customers receive a fully-itemized receipt					
viii.	Accurate, up-to-date and real-time sales analysis information is always available for managers and sales teams					
ix.	We use electronic data inter-change(EDI) to update sales and inventory records					
x.	Track new orders					
xi.	Ensure customers are visited/contracted					

F: Operations			1	2	3	4	5
i.		We have an activity Standard Operating Procedure (SOP) on all tasks performed on services up until their sale					
ii.		Services offered are categorized into either group A, B, C in accordance with their demand/ shilling usage					
iii.		Pricing of our services takes into consideration all the tasks performed on the product until it is sold to the customer					
G: Firm infrastructure			1	2	3	4	5
i.		Providing guidance to researchers on compliance with all applicable relating legislation					
ii.		Occupational health and safety policy is integrated in the company policy					
iii.		Compliance with regular inspection plans					
iv.		Enhanced health/safety culture and meet mandatory health/safety training requirements					
v.		Improve programs and services for vulnerable workers					
Operational performance			1	2	3	4	5
i.		We evaluates the performance of the Value chain management practices					
ii.		We are successful in dealing with Value chain management Practices					
iii.		Customers are satisfied with Value chain management Practices					
iv.		Suppliers satisfied with Value chain management Practices					
v.		ompany is pursuing best Value Chain Management Practices					
vi.		mers are satisfied with our firm's performance					
vii.		im enjoys good reputation					
viii.		rm adapts well to external environment changes					
ix.		oyees are clear about firm's vision and strategy					
x.		he years the firm has realized cost reduction					
Challenges practicing value chain management			1	2	3	4	5
i.		No cost-optimized platform with new technology through sales and marketing					
ii.		Ability to get fair prices with suppliers by having more					

	than one supplier					
iii.	Deliver a cost-optimize platform solution through the converged network Stable and well tested product offering					
iv.	Ability to develop, integrate and test complex technologies in short time with a "small" organization					
v.	Ability to deliver Time To Market Cost-optimize platforms with new technologies Competent Management Team and R&D people that understand the mobile industry					
vi.	Successfully manage to define the boundaries in the value chain where it has the core competence					
vii.	Signed contracts with customers that generate high volumes To go hand-by-hand with standardization organizations					
viii.	Excellent coordination with R&D and sourcing department to understand what buy or develop in-house					
ix.	Excellent procurement processes					

Appendix II: Work plan

ACTIVITY	August 2018	September 2018	November 2018
Proposal writing	▓		
Questionnaires structuring and presentation		▓	
Presentation of Proposal			▓
Data collection			▓
Analysis of data			▓
Report writing			▓