VALUE CHAIN AND COMPETITIVE ADVANTAGE OF FIRMS IN THE INFORMATION TECHNOLOGY INDUSTRY IN KENYA

BY

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DECLARATION

This project is my original work and has not been presented for examination in any other university.

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This research project has been submitted for examination with my approval as university supervisor.

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DEDICATION

This research project is dedicated to my parents for their unconditional support throughout my studies.

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ABSTRACT

The Information Technology industry in Kenya is highly competitive and in their desire to remain competitive, the information 'technology firms need to critically review value adding processes to eliminate unwanted costs in the industry and consequently stay competitive. The study sought to establish the relationship between value chain and competitive advantage of firms in the information technology industry in Kenya. A cross section survey was used in this study, The target population was the fifteen information technology firms. The study used census sampling technique while data collection was done using questionnaires. Data was analyzed using descriptive statistics and inferential statistics (correlation and linear regression). From the study findings, the study concluded that the information technology industry has strong competition thus the information technology firms in Kenya adopts various value chain activities to gain a competitive advantage in the industry. The quality and lead time were the most significant aspects of competitive strategies adopted by information technology firms in Kenya. The information technology firms in Kenya were established for profitability, growth (gain Market share) and survival in market respectively. On practicing of inbound logistics as a value chain activity, the study concluded that the process system of receiving inputs is capable of detecting counterfeits and poor quality inputs and that inputs are well serialized respectively. On practicing operations as a value chain activity the study concluded that operations conduct checks to ensure all operations conform to required quality management systems (QMS), operations transform goods into finished products in timely manner and that operations is able to take corrective actions on faulty goods beforehand respectively. On out bound logistics as a value chain activity, the research concluded that out bound logistics has an appropriate and secure system of storing its work in progress goods. On the practice of marketing and sales as a value chain activity, the research concluded that marketing and sales as a value chain activity has the capacity to identify the markets demand and that it attaches importance to having an advertising strategy respectively. From the correlation analysis the study concluded that there is a correlation between the value chain activities and the competitive advantage with marketing and sales having the highest value and infrastructure having the lowest correlation value. From the regression equation, the study concluded that marketing and sales contribute most to the competitive advantage followed by out bound logistics.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

As firms engage in their activities to discharge their mandate, within a business environment, they compete with other firms engaged in similar or substitute activities. In order for firms to survive the turbulent market they operate in, they need to gain competitive advantage. Competitive advantage is a very significant contributor to superior profitability. There are many routes to competitive advantage such as low costs, superior customer service, convenient geographic location, technological expertise, better supply chain management and better production techniques.

The basis of superior performance in the long run is sustainable competitive advantage. Michael Porter (1980, 1985 and 1998), identified two basic types of competitive advantage, that is, cost advantage and differentiation advantage. To analyze the specific activities through which firms can create a competitive advantage, it is useful to model the firm as a chain of value creating activities. The goal of value chain is to attain full and seamless interaction among all the activities of the chain. In doing so, the result is cost savings realized thanks to the lower transaction costs of each link of the chain. When a firm sustains profits in the long run over its rivals, it is able to possess competitive advantage (Porter, 1985).

The Top 100 mid-sized companies Survey is an initiative of KPMG East Africa and Nation Media Group. The Survey seeks to identify East Africa's fastest growing medium sized

Companies in order to showcase business excellence and highlight some of the most successful entrepreneurship stories. Essentially, a 'Top 100 Mid-sized Company' is one which ranks ahead of its peers in terms of revenue growth, profit growth, return to shareholders and cash generation/ liquidity.

The information technology industry in Kenya has been fragmented in the past. It has recently-become an important sector. In addition, the Government has identified it as an important pillar if Kenya as a nation is to advance rapidly going forward. The industry is continuously evolving at an ever increasing pace. In light of these activities within the industry, a closer assessment of the industry has been necessitated. A key motivating factor to study the industry has been to discover how value is created and sustained in the industry.

1.1.1 The Concept of Value Chain

The value chain for any firm in any business is the linked set of value creating activities all the way from basic raw material sources for component supplies through to the ultimate and use product delivered to the customer (Johnson and Scholes, 2002). A company is therefore a chain of activities for transforming inputs into outputs that customers value. According to Porter (1990), competitive advantage arises out of the way in which firms organize and perform these activities. By breaking up a company into its various value activities, we are able to understand the behavior of costs and the existing and potential sources of differentiation.

A company's value chain interacts with value chains of other companies, that is, supplier values chains, channel value chains, buyer value chains. Those other value chains influence the company's value chain. Consequently, the value chain is a tool for diagnosing competitive advantage and finding ways to enhance it.

Value chain was developed as a tool of strategy. Porter highlighted the place of competitive advantage in the economic chain and ideas of synergies across different businesses (economies of scope). Value chain categorizes the generic value adding activities of an organization, (Johnson Scholes and Whittington, 2000). The "primary activities" include: inbound logistics, operations (production). Outbound logistics, marketing and sales (demand), and services (maintenance). The "support activities" include administrative infrastructure management, human resource management, information technology and procurement. The costs and values drivers are identified for each activity. The value chain framework has quickly made its way to the forefront of management thought as a powerful analysis tool for strategic planning. Its ultimate goal is to maximize value creation while minimizing costs (Porter, 1985).

1.1.2 The Concept of Competitive Advantage

Competitive advantage can be defined as an edge over rivals in attracting customers and defending against competitive forces. One of the goals of crafting and implementing business strategy is to achieve a sustainable competitive advantage. Porter (1985) identified two basic types of competitive advantage being cost advantage and differentiation advantage.

A competitive advantage exists when the firm is able to deliver the same benefits as competitors but at a low cost (cost advantage), or deliver benefits that exceeds those of competitors products (differentiation advantage). Thus, a competitive advantage enables the firm to create superior value for its customers and superior profits for itself. Cost and differentiation advantage are known as positional advantage since they describe the firm's position in the industry or a leader in either cost or differentiation (Porter, 1985).

Competitive advantage is created by using resources and capabilities to achieve either a iower cost structure or a differentiation product. A firm positions itself in its industry through its choice of low cost or differentiation. The decision is a central component of the firm's competitive strategy. Another important decision is how broad or narrow a market significant to target. Porter (1985) formed a matrix using cost advantage, differentiation advantage and broad or narrow focus to identify cost of generic strategies the firm can pursue to create and sustain a competitive advantage.

As firms are faced with slower growth and stronger competition, competitive advantage becomes crucial to this maintenance of superior performance (Porter, 1985). Competitive advantage grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm's cost of creating it. Value is what buyers are willing to pay and superior value stems from offering lower prices than competitors for equivalent benefits or providing unique benefits that more than offset a higher price (Porter, 1985).

1.1.3 Value Chain and Competitive Advantage

A firm's activities are made up of a chain of processes in adding value to a service or goods and it is how well these activities are performed that creates long term competitive advantages. If it is necessary to disaggregate all the tasks that are conducted to add value (Hax and Maljuf 1991). These tasks are carried out in what Porter (1985) termed the value chain.

A company achieves competitive advantage whenever it has some type of edge over rivals in attracting buyers and coping with competitive forces. There are many routes to competitive advantage, but all involve giving buyers what they perceive as superior value compared to the offerings by rival sellers. Superior value can mean a good product at lower prices, a superior product or service that is worth paying more for, or a best value offering that represent an attractive combination of price, feature, quality, services and other appealing combination. Delivering superior value in service or product always requires performing the value chain differently and in a more superior way than rivals and building competences and resources capabilities that are not readily matched (Porter 1985).

Competitive advantages are more likely to be attained not by one element of the value chain but by several linkages within the value chain. A company that does a first rate job of managing its value chain activities relative to competitors stands a good chance of achieving sustainable competitive advantage (Thompson et al 2007).A competitor will find it easier to initiate a product, service or policy. However, it is more difficult for competitor to initiate

Value chain competences based on a multitude of compatible linked processes throughout a value chain. It therefore follows that competitive advantage grows mainly out of superior value a firm is able to create for its customers through these internal activities thai exceed the firms cost of creating it.

1.1.4 The Information Technology Industry in Kenya

Information Technology (IT) may be defined as computer hardware and software and telecommunications technology. Information Technology is the world's fastest growing economic activity; the sector has turned the globe into an increasingly interconnected network of individuals, firms, schools and government communicating and interacting with each other through a variety of channels and providing economic opportunities transcending borders, languages and cultures. Information Technology has opened new channels for service delivery in areas such as e-government, education, e-health and information dissemination (Murigi, 2010).

The Information Technology industry in Kenya is characterized by stiff competition. This competition is caused by higher entry barriers at the top of the industry and low entry barriers **at this lower** level. For the small scale enterprises all that is required to get into business is adequate capital and government licenses. On the other hand, entry at this top is coupled with **expensive** licenses to operate in addition to a host of regulations and controls (Waema, 2007).

The top players in this industry comprise the telecommunication players; these include Safaricom, Orange-telecom, Zain and Yu- Essar communications. These players are

engaged in stiff competition through tariff structures and other product offerings geared towards controlling the market. Of the four players, Safaricom which is partly state and public owned controls about 78% of the market share with the other players sharing out the 22% that is left. This domination by one of the players has precipitated strict controls and regulation by the government through Communications Commission of Kenya (CCK) so as to level the playing field. On the other hand, the small scale players are involved in reselling the products from the big player and other international software and hardware manufacturers. Also the medium enterprises are involved in provision of information technology solutions, software development and resale, hardware integration and support services. A majority of the medium enterprises are foreign franchise or are partially foreign owned. Others are appointed distribution channels of multi-national information technology firms such as Cisco, Microsoft, Hewlett-Packard, Oracle and IBM (Murigi, 2010).

The government has continued to liberalize the information technology sector. The sector has spurred economic growth in other sector of the economy in the country as a result of automating and injecting efficiency. With the government support of the sector as demonstrated by various tax incentives such as tax waivers on computers and regulatory controls coupled with the landing of the fiber optic cable, enormous investment opportunities have emerged. Entrepreneurs in the industry have therefore plunged into it and established such businesses as software development, infrastructure development and integration, information technology products distribution, internet service provision, hardware sales and support and offering outsourced services among others (Waema, 2007).

1.2 Research Problem

The value chain is a tool for diagnosing competitive advantage and finding ways to enhance it. The value chain for any firm in any business is the linked set of value creating activities all the way from basic raw materials sources or component supplies through to the ultimate end and use product delivered to the customer (Johnson and Scholes, 2000).The value chain disaggregates a firm into its strategically relevant activities in order to understand the behavior of the firm's costs and its existing or potential sources of differentiation. A firm gains competitive advantage by performing these strategically important activities more cheaply or better than its competitors (Porter 1985).

The Kenyan information technology industry has recently received attention as one of the key pillars that will grow Kenya in future. The industry has to deal with rapid product obsolescence, timely product orders and deliveries, foreign currency fluctuations, availability of competent and skilled workforce and turn around time to clear goods through customs.

In its desire to remain competitive, there is need to critically review value adding processes by examining the application of value chain activities in order to eliminate unwanted costs in the industry and consequently stay competitive. Application of key value chain activities is fundamental to determine how these activities will be capitalized on to reduce costs proactively and therefore add value for ultimate competitive advantage.

Several studies have been conducted on value chain management by organizations in Kenya. Among those recently done include Ouma (2008) who studied the Relationship between

Value Chain and Competitive Advantage in the Kenyan insurance industry. He found out that insurance firms use value chain analysis to develop competitive advantage over other competing firms thereby reporting better cost management and higher profits.

Also Munyao (2008) looked at the Application of Value Chain in developing Competitive Advantage at Deloitte- Kenya, a case study. Otieno (2010) analyzed the Value Chain in Telkom-Kenya. Furthermore, Marete (2010) assessed the application of the Hines Value Chain Model by the Kenya Medical Supplier Agency.

Despite the studies done, none has attempted to assess the value chain activities in information technology firms. The industry is dominated by highly competitive players and undercutting in pricing to retain clients resulting on reduced margins for the firms within the industry. The study therefore sought to fill the gap by providing answers to the research question: what is the relationship between value chain and competitive advantage of firms in the Kenyan information technology industry?

1.3 The Research Objective

The objective of the study was to establish the relationship between value chain and competitive advantage of firms in the information technology industry in Kenya.

1.4 Value of the study

This study may contribute to the existing literature and body of knowledge on value chain and competitive advantage. This study may also be beneficial to scholars who would like to study

The information technology industry in Kenya and how value is created within the industry. The results could possibly reveal areas of strengths which can be maximized to enhance profitability and meet customer needs. Similarly, weaknesses along the value chain would be improved upon after being identified.

Secondly, the study may help management of information technology firms in their strategic management processes. It may assist the management in appraising key activities and how they create a competitive advantage to the organization and in effect optimize cost of activities against benefits to customers. The study may also help clients evaluate the value propositions information technology firms have to offer in terms of product and after sale services.

Finally, the study will be helpful to managers and consultants working in information technology firms as it highlights the use of the value chain to achieve sustainable competitive advantage through aligning it with the organization's objectives. Findings may be used for further research into the industry, while practitioners can apply lessons in efficient operations management.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of some of the published sources of literature that is relevant to the study. It provides a critical review of scholarly work in value chain analysis and competitive advantage that will anchor this study. In this review, the research will focus on the concepts under investigation, the two most dominant vaiue chain models and lastly explain how value chain and competitive advantage are related.

2.2 The Concept of the Value Chain

The value chain is a tool for diagnosing competitive advantage and finding ways to enhance it (Porter, 1985). In essence, a value chain is a chain of activities. Product or services pass through all activities of the value chain in order and at each activity the product gains some value. Value Chain attempts to understand how a business creates customer value by-examining the contributions of different activities within the business to that value.

The chain of activities gives the products more added value than the sum of added values of all activities. According to Porter (1990), competitive advantage arises out of the way in which firms organize and perform these activities. Developing a sustainable competitive advantage requires an understanding of the company's value chain as well as the chains of those companies it interacts with. The value chain of companies in an industry differs due to a variety of reasons such as environment, strategies they adopt and much more.

The difference in value chain therefore does explain why performance of companies in a similar industry differs. The value chain as a concept has been extended beyond individual organizations. It can apply to whole supply chains and distribution networks. The delivery of a work of products and services to the end customers will mobilize different economic factors, each managing its own value chain. The industry wide synchronized interactions of those local value chains created an extended value chain, sometimes global in extent. Porter (1990) terms this larger interconnected system of value chains the "value systems".

A value system includes the value chain of a firms supplier (and their suppliers all the way back), the firm itself, the firm distribution channels, and the firm's buyers (and presumably extended to the buyers of their products and so on). The value chain framework has quickly made its way to the forefront of management thought as a powerful analysis tool for strategic planning. Its ultimate goal is to maximize value creation while minimizing costs, according to Porter (1985), identifying value activities that are technologically and strategically distinct.

2.3 Value Chain Models

In order to understand the activities through which a firm develops a competitive advantage and creates shareholder value, it is useful to separate the business system into a series of value generating activities referred to as the value chain. Every firm is a collection of activities that are performed to design, produce, market, deliver and support its products. All these activities can be represented using a value chain. Johnson and Scholes (2000) view value chain analysis as a valuable tool for understanding how value is lost or created in a business. Research has revealed that the .main goals of value chain are: to measure the value attributes and

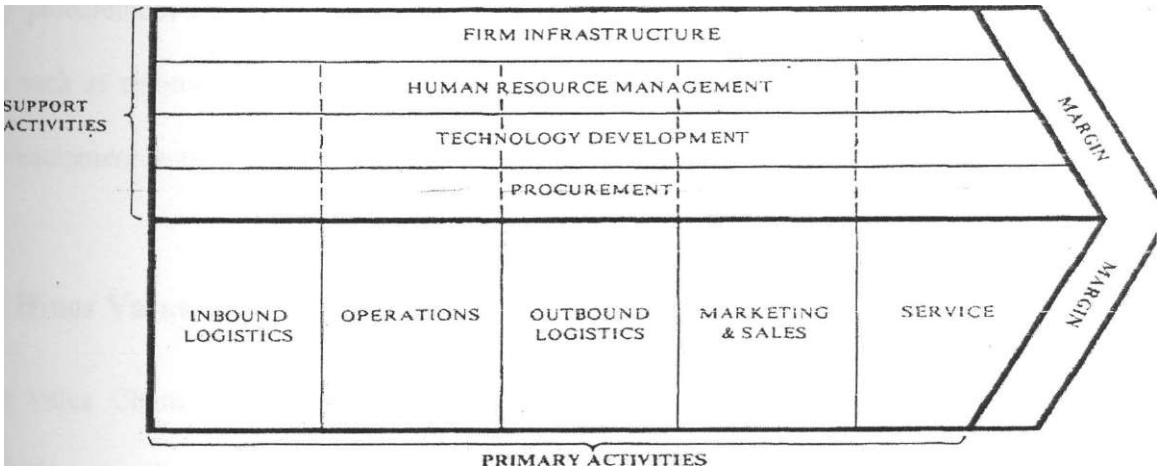
Appreciate how various functions or activities within supply chain add value. Secondly, it is to identify value attributes in services and products and thirdly, to understand customer requirements and communicate them to supplier. Important value chain models as developed by Porter and Hines are discussed below.

2.3.1 Porter's Value Chain iModel

According to porter (1985) there are five primary activities directly concerned with the creation or delivery of a product or service. On the other hand, the above activities propped up by support activities. Support activities assist the firm as a whole by providing infrastructure or inputs that allow the primary activities to take place on an ongoing basis.

The primary activities include logistics, operations (production), outbound logistics, marketing and sales (demand) and services (maintenance). Inbound logistics are all activities linked to receiving, handling, storing and distributing inputs into the production system. Operations are all activities involved in the transformation of input to outputs as the final products. Outbound logistics involve moving the output from operations to the end user.

Marketing and sales involves informing potential customers about the products, persuading them to buy and enabling them to do so throughout advertising, promotion and market research and distribution support. Lastly service activities are those involved in provision of services to buyers offered as part of the purchase agreement including installation, spare parts delivery, maintenance and repair, technical assistance, buyers inquiries and complains.



PRIMARY ACTIVITIES

Source adapted from Porter, M.E. (1985) Competitive advantage: Creating and sustaining superior performance, The Free Press USA.

Figure 2.1: Porter's Value Chain Model

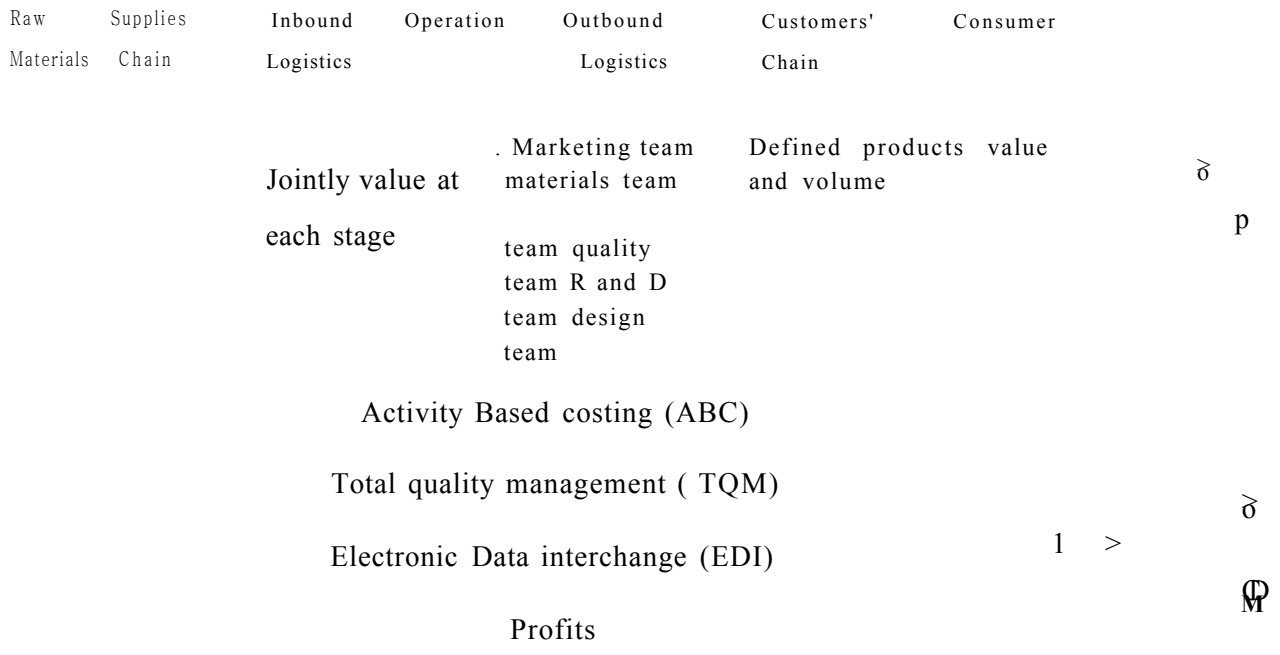
The support activities assist the firm as a whole by providing infrastructure or inputs that allows the primary activities to function .These includes firms infrastructure, human resources technology and procurements .Firm infrastructure also known as general administration includes costs and assets relating to general management, safety and security finance, accounting, legal affairs research and corporate planning. These usually support the entire chain .Human resource management includes recruitment, hiring training development and compensation of the staff. Technology relates to products design and improvement of production processes and resources and utilization of computerized support systems.

Lastly procurement involves acquiring resources inputs such as raw materials components assets such as resource input such as raw materials components, assets such as machinery, office equipment from vendors.

2.3.2 Mines Value Chain Model

In the Value Chain Redefined, Hines (1993) recognized that Porter made two valuable contributions to the understanding of value chain systems. First, porter places a major emphasis on the material management value-adding mechanisms raising the subject to a strategic level in the minds of serious executives and second he places the customer in an important position in the supply chain.

However, Hines (1993) presents a critique of Porter's model identifying three major problems. Neither Porter nor the firms discussed concedes that customers satisfactory not company profit should be their primary objectives. The focus of Porter's model is on the profit margin of each enterprise not the consumer's satisfaction. Secondly although Porter acknowledges the importance of integration his model shows a rather advised network both within the company and between the different organizations in the supply chair and lastly, Hines believes that the wrong functions are highlighted as being important in Porter's primary and support activities . Hines (1993) therefore proposed customers focused value chain approach that differs with porter's profit based approach.



Source: Lysons, K. Farrington, B (2006), purchasing and supply chain management. 7ih edition Pearson Education limited. Prentice Hall. Pg. 104

Figure 2.2: Hines Macro integrated materials value pipeline

As portrayed in figure 2 above, Hines primary activities concentrate strongly on focused value of the product or services in the different stages, suggesting that the main objective of the value chain is to add value for consumer and customer. As a result of this, the consumer and primary activities are based strongly on different teams, marketing team, materials from engineering team, quality team research and development team and design team all working together jointly to define product value at each stage and the value chain has been turned around to face the opposite direction to that in porter's model (Lynsons and Farrington, 2006)

Hines model emphasis that that the primary functions in each of the separate firms in the value chain must be integrated ail external barriers and internal decisions must be broken down and there should be collaboration rather just competition (Hines, 1994).

2.4 The Vaiue Chain and Competitive Advantage

Competitive Advantage grows fundamentally out of the value a firm is able to create for its buyers. It may take the form of prices lower than competitors' for equivalent benefits or the provision of unique benefits that more than offset a premium price.

According to Porter (1990), competitive advantage arises out of the way in which firms organize and perform value chain activities. Developing a sustainable competitive advantage requires an understanding of the company's value chain as well as the chains of those companies it interacts with. Value chains of companies vary due to various reasons including past histories, strategies they adopt and many more reasons. It is useful to separate the business system into a series of value generating activities referred to as value chain in order to better understand the activities through which a firm develops competitive advantage and creates shareholder value.

Every one of those activities can contribute to a firms relative cost position and create a basis for differentiation (Porter, 1985) .A Company may create cost advantage through reduction of costs of individual value chain activities or reconfiguring the value chain as a whole. A cost analysis assigning costs to value chain activities can be performed and relocated properly to value creating activities. This arises from uniqueness in the final product or services on

offer. Many drivers of differentiation also serve as cost drivers resulting in a trade off between cost and differentiation. Ultimately the firm may need to be creative in order to develop a novel value chain configuration that increases product differentiation.

To consistently make profits in excess of its costs of capital, a company must poses some form of sustainable competitive advantage. Competition advantage is attained by a firm when it has value creating processes and positions that cannot be duplicated or imitated by other firms that lead to the production of above normal economic rents (Porter, 1985).

Sustainability of competitive advantage depends on barriers to imitation, capability of competition and general by dynamism of the industry environment (Hill and Johnson, 2001)It is possible for some companies to temporarily make profits above the cost of capital without sustainable competitive advantage. A major difference between competitive advantage and sustainable competitive advantage is that the process and positions a firm may hold are non-duplicable and inimitable when a firm posses a sustainable competitive advantage.

Hence a sustainable competitive advantage is one that can be maintained for a significant amount of time even in the presence of competition. The power of value chain analysis is not so much listing the activities that should be performed and understanding which ones add value to the customer but it is more about understanding the linkages between the activities (Porter, 1985).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter introduces the research design that was used for this study, the methods of data collection and how the data collected was analyzed. It also gives a justification of the method selected under each methodology.

3.2 Research Design

A cross sectional survey was used in this study. It sought to establish the relationship between value chain and competitive advantage within the information technology industry in Kenya.

The chosen research design was appropriate for this study because it sought to assess several firms within the industry under investigation. It also provided broad information about the processes involved in the firms to be studied.

3.3 Population

Target population is the specific population from which information was collected for this study. The target population was the selected information technology firms within the industry. A number of fifteen firms were targeted for the study.

These firms were chosen from information technology firms that participated in the annual surveys done by KPMG and Nation Media Top 100 mid-sized companies in Kenya between the period 2009 and 2011 survey. The choice of these companies is preferred because they represent a list of companies that have registered growth within the industry.

3.4 Sampling

A census survey was used to collect data from the target firms in the study. The list of target firms is given in appendix II. The reason for using this method ensures that the target firms were adequately represented in the sample. In addition, it improves efficiency by gaining greater control on the composition of the sample.

3.5. Data Collection

Data collection was done through collection of primary data from questionnaires administered to respondents by a research assistant. The questionnaires were divided into two parts. A general information section and a detailed part.

Part A collected general data on the firm while part B contained questions aimed at assessing the value chain activities of the firm and lastly competitive advantage. The questions were based on a Likert scale. The questionnaires was administered by drop and pick method targeting a Manager of each of the firms.

3.6 Data Analysis

After responses have been received from the questionnaires, quantitative analysis was employed. Data was coded and thereafter analyzed using Statistical Package for Social Sciences (SPSS) program and presented using tables and pie charts to give a clear picture of the research findings of key value chain activities that would create competitive advantage for the firms. Data was analyzed using descriptive statistics such as frequency distribution means standard deviations and percentages which are a vital part of making sense of the data.

Results were presented in tables, charts, inferential statistics correlation and linear regression.

The model specification is as follows

$Y=a+PiXi+8.$

'Where;

Y= Competitive Advantage

XI = Value Chain

£= error term

P=coefficient

a= constant

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter presents the data that was found on value chain and competitive advantage of firms in the information technology industry in Kenya. The research was conducted on sample size of 15 information technology firms, 13 questioners were completed and returned the questionnaires duly filled in making a response rate of 86.6%. Mugenda and Mugenda (1999) stated that a response rate of 50% and above is sufficient for statistical reporting.

The study made use of frequencies (absolute and relative) on single response questions. On multiple response questions, the study used Likert scale in collecting and analyzing the data whereby a scale of 5 points were used in computing the means and standard deviations. These were then presented in tables, graphs and charts as appropriate with explanations being given in prose.

4.2 Genera! information

The study initially sought to inquire information on various aspects of respondents' background, i.e. the respondent's gender, age, academic background, and number of years while in the information technology industry.

This information aimed at testing the appropriateness of the respondent in answering the questions regarding value chain and competitive advantage of firms in the information technology industry.

4.2.1 Distribution of respondents by gender

The study sought to establish the respondent's gender distribution. The findings are as stipulated in table 4.3.

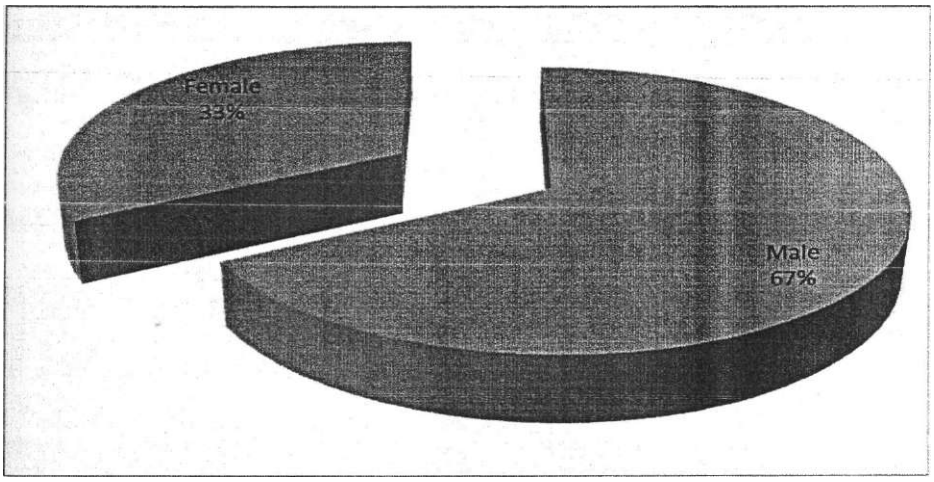


Figure 4.3 Distribution of respondents by gender

From the findings, 66% of the respondents who participated in the study from the sampled firms were male while the rest 33% were females.

4.2.2 Age Distribution of respondents

The study also sought to establish the age distribution of the respondents as shown in figure

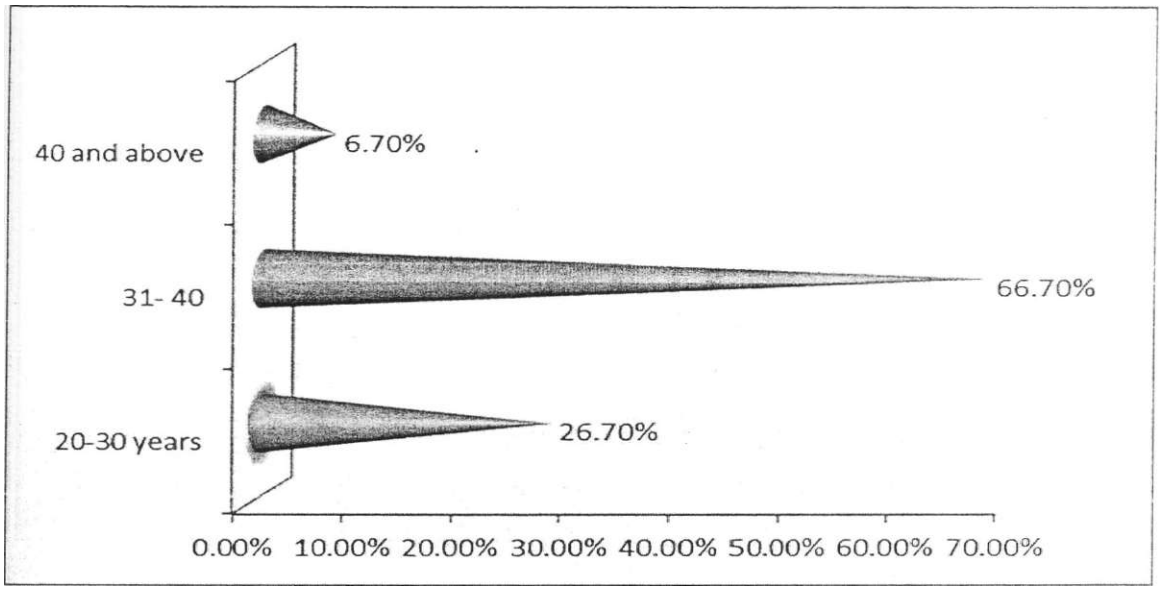


Figure 4.4 Age Distribution of respondents

According to the findings, majority of the respondents (66.7%) were 31-40 years of age, 26.7% were 20-30 years while 6.7% were aged 41 years and above years. This depicts that the respondents were youthful and energetic to manage their firms. It also depicts that are highly experienced owing to the accumulation of knowledge and skills throughout the working life of the respondents, majority of whom are 31- 40 years.

4.2.3 Academic background of the respondents

The study also sought to establish the highest level education of the respondents.

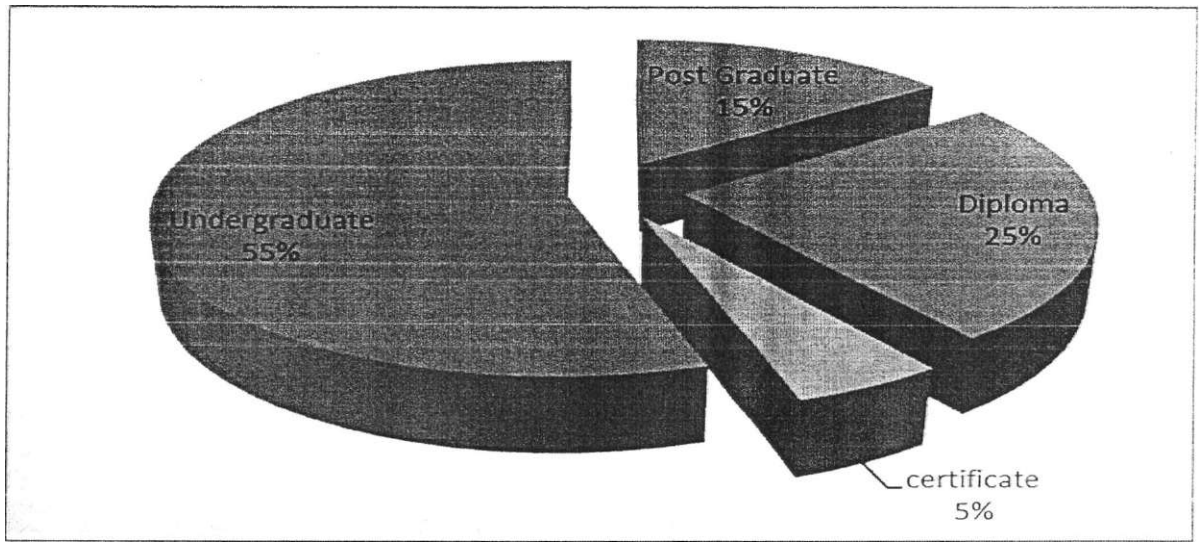


Figure 4.5 Academic background of the respondents

From the table, 55% of the respondents said they had undergraduate degree. 15% had postgraduate degree, 25% said that they were diploma holders while 5% said that they were certificate holders. These findings indicate that majority of the staff in the firm, have undergraduate degree.

4.2.4 Respondents level of experience based on number of years in the current position

The research sought to establish respondents' level of experience based on the number of years they have worked in their position as managers.

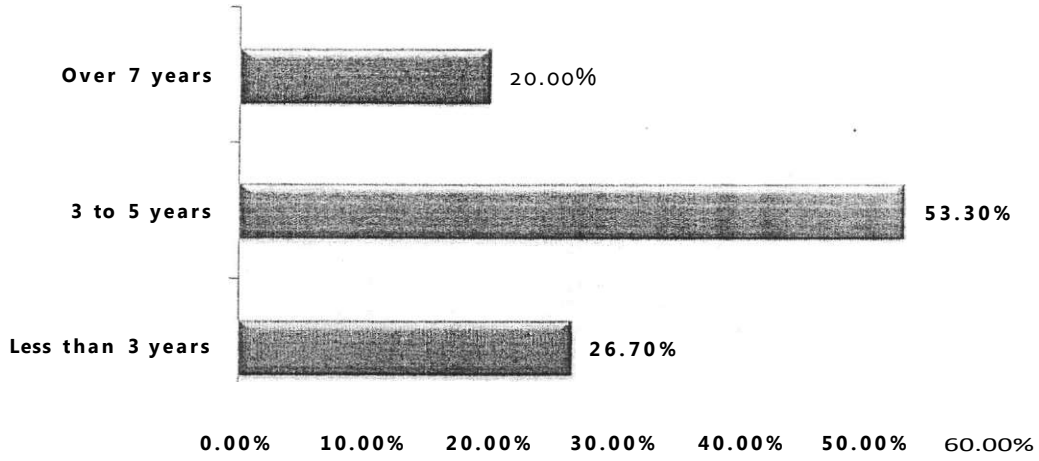


Figure 4.6 Respondents level of experience based on number of years in the current position

Figure 4.6 shows that majority of the respondents (53.3%) had worked in their current position for 3-5 years, 26.7% for less than 3 years while 20% had worked for over 7 years. This illustrates that the respondents had worked in the organization long enough to give credible information on the value chain and competitive advantage of firms in the information technology industry. It also depicts that the respondents were highly experienced owing to the many years they had worked in the organization.

4.2.5 Respondents' number of years working in the Information Technology industry

The respondents were required to indicate the number of years they had worked in the information technology industry.

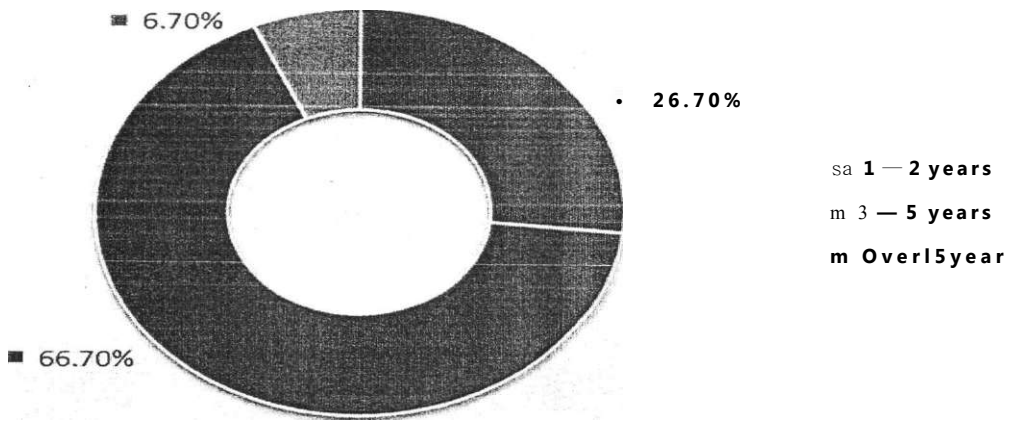


Figure 4.7 Respondents' number of years working in the Information Technology industry

From the findings, the majority of the respondents (66.70%) posited that they had worked in the information technology industry for 3-5 years, 26.7% for 1-2 years while 6.7% had worked in the information technology industry for over 15 years. This illustrates that the respondents had accrued a lot of skills owing to their many years of working in the information technology industry.

4.3 Competitive Advantage

The competitive advantage assessed the nature of competition among competing firms in the industry. It weighed this based on three key parameters that ranged from very strong level of competition to strong competition and lastly weak level of competition. The study sought to find out the various areas of competitive advantage in the information technology industry in Kenya.

4.3.1 Nature of competition in the Information Technology industry

The study also sought to establish the nature of competition in the information technology industry according to catchment area of the respondents.

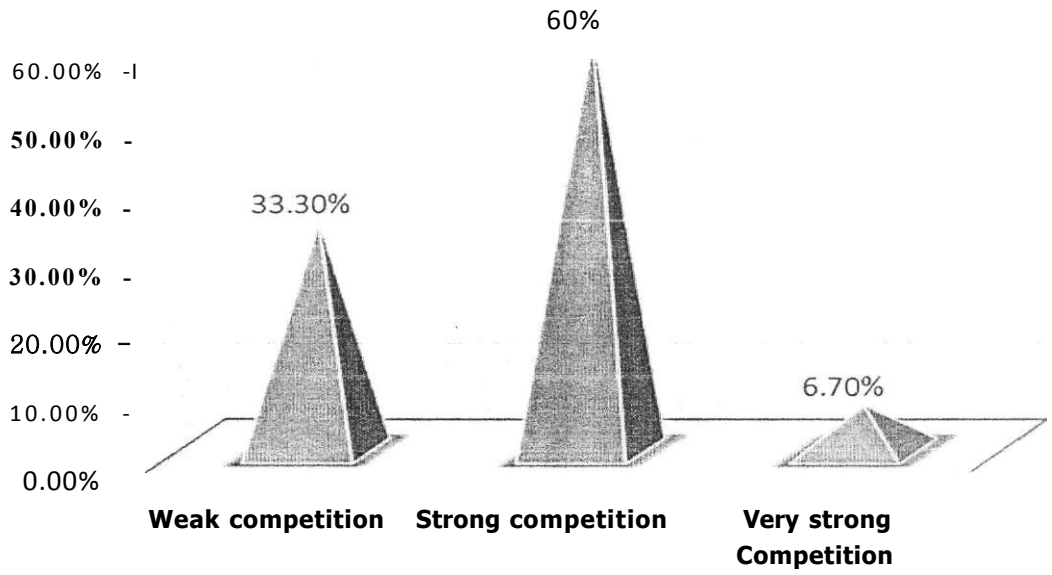


Figure 4.8 Nature of competition in the Information Technology industry

Figure 4.8 indicates that majority of the respondents (60.0%) indicated that the information technology industry has Strong competition, 33.3% described the information technology-industry to have weak competition while 6.7% described the information technology industry to have very strong competition. This illustrates that the information technology industry in Kenya has strong competition.

4.3.1 Various aspects of competitive strategies adopted by Information Technology firms in Kenya

The study sought to establish the various aspects of competitive strategies adopted by information technology firms in Kenya. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4.1 Various aspects of competitive strategies adopted by Information Technology firms in Kenya

Indicators of Competitive Strategies	**Mean**	**Std. Dev**
Quality	4.8000	0.41404
Lead Time	4.1333	0.63994
Cost	3.8000	0.94112
Flexibility	4.0667	0.70373

From the study findings in Table 4.1 above, quality and lead time were the most significant aspects of competitive strategies adopted by information technology firms in Kenya as shown by means of 4.8000 and 4.1333 respectively. Other aspects of competitive strategies adopted by information technology firms in Kenya were flexibility and cost as shown by means of 4.0667 and 3.8000 respectively.

4,3.2 Goals of Information Technology firms in Kenya

The study sought to establish the goals of information technology firms in Kenya. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4.2 Goals of Information Technology firms in Kenya

Indicators of Goals of Information Technology firms	**Mean**	**Std. Dev**
Survival in Market	4.3333	0.51640
Growth (Gain Market share)	4.4000	0.50709
Profitability	4.5333	0.72375
Product and Market differentiation	4.1333	0.63994
Market development	4.0667	0.45774
Diversification	3.8667	0.83381

As shown in table 4.2 the most significant goal for the establishment of the information technology firms in Kenya were profitability, growth (gain Market share) and survival in market as shown by means of 4.5333, 4.4000 and 4.3333 respectively. Other important reasons for the establishment of information technology firms were product and market differentiation, market development and diversification as shown by means of 4.1333, 4.0667 and 3.8667 respectively.

4.4 Value Chain Activities

To determine the extent of application of Porter's value chain model in information technology firms in Kenya, the questions were structured along primary and secondary activities of the firms identified. In essence, the research sought to establish the extent to which firms practiced various value chain activities. The details per activity are presented hereafter.

4.4.1 Inbound Logistics

The study sought to establish the extent to which department of the information technology firms in Kenya practiced inbound logistics as a value chain activity. The responses were rated on a five point Tikert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table

Table 4.3 Inbound logistics as a value chain activity

Indicators of Inbound Logistics	**Mean**	**Std. Dev**
Best inventory management practices are applied to input orders	3.9333	0.59362
The process system of receiving inputs is capable of detecting counterfeits and poor quality inputs	4.2667	0.88372
Inputs are well serialized	4.1333	0.51640

From the study findings in Table 4.3 above, majority of the of the firm managers agreed to a great extent that the process system of receiving inputs is capable of detecting counterfeits and poor quality inputs (M=4.2667) and that inputs are well serialized (M=4.1333) respectively. In addition, the majority of the firm directors agreed to a moderate extent that best inventory management practices are applied to input orders (M=3.9333).

4,4.2 Operations

The study sought to establish the extent to which department of the information technology firms in Kenya practiced operations as a value chain activity. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table

Table 4.4 Operations as a value chain activity

Indicators of Operations	**Mean**	Std. **Dev**
Conduct checks to ensure all operations conform to required quality management systems (QMS)	4.4667	0.16308
Transform goods into finished products in timely manner	4.2000	0.56061
Is able to take corrective actions on faulty goods beforehand	4.0667	0.45774

From the study findings in Table 4.4 above, majority of the of the firm managers agreed to a great extent that 'operations conduct checks to ensure all operations conform to required quality management systems (QMS) (M=4.4667), operations transform goods into finished products in timely manner (M=4.2000) and that operations is able to take corrective actions on faulty goods beforehand (M=4.0667) respectively.

4.43 Out bound Logistics

The study sought to establish the extent to which department of the information technology firms in Kenya practiced out bound logistics as a value chain activity. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4.5 Out bound logistics as a value chain activity

Indicators of Out bound logistics	**Mean**	**Std. Dev**
Has appropriate and secure systems of storing its work in progress goods	4.1333	0.51640
Has adequate capacity to effectively process goods	3.8667	0.74322
Has adequate capacity to ensure timely delivery of products to customers/customers can collect goods from centralized location	3.9333	0.45774

From the study findings in Table 4.5 above, majority of the of the firm managers agreed to a great extent that out bound logistics has appropriate and secure systems of storing its work in progress goods (M=4.1333). In addition, the majority of the firm managers agreed to a moderate extent that out bound logistics has adequate capacity to ensure timely delivery of products to customers/customers can collect goods from centralized location (M=3.9333) and that out bound logistics has adequate capacity to effectively process goods (M=3.8667) respectively.

4.4.4 Marketing and Sales

The study sought to establish the extent to which department of the information technology firms in Kenya practiced marketing and sales as a value chain activity. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4.6 Marketing and sales as a value chain activity

Indicators of Marketing and Sales	**Mean**	**Std. Dev**
Has ability to sensitize customers on variety of latest products available	3.8667	0.63994
Has the capacity to identify the markets demand	4.2000	0.67612
Attaches importance to having an advertising strategy	4.1333	0.74322

From the study findings in Table 4.6 above, majority of the firm managers agreed to a great extent that marketing and sales as a value chain activity has the capacity to identify the markets demand (M=4.2000) and that it attaches importance to having an advertising strategy (M=4.1333) respectively. In addition, the majority of the firm managers agreed to a moderate extent that marketing and sales as a value chain activity has ability to sensitize customers on variety of latest products available (M=3,8667).

4,4.5 Services

The study sought to establish the extent to which department of the information technology firms in Kenya practiced services delivery as a value chain activity. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4,7 Services delivery as a value chain activity

Indicators of service delivery	**Mean**	**Std. Dev**
Service delivery is excellent for all clients/customers	4.4200	0.50709
Promptly resolves client queries/complaints	4.4000	0.63246
Has a service agreement with clients	4.2000	0.56061

From the study findings in Table 4.7 above, majority of the of the firm managers agreed to a great extent that service delivery is excellent for all clients/customers (M=4.4200), services delivery promptly resolves client queries/complaints (M=4.4000) and that services delivery has a service agreement with clients (M=4.2000) respectively.

4.4.6 Procurement

The study sought to establish the extent to which department of the information technology firms in Kenya practiced procurement as a as a value chain activity. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4.8 Procurement as a as a value chain activity

Indicators of Procurement	**Mean**	Std. **Dev**
To what extent are products/services competitively procured to secure lowest possible prices for input purchases of highest quality	4.0000	0.65465
Employs best inventory management practices	4.1333	0.51640
Consolidates orders from all sales representatives so as to benefit from quality discounts offered on bulk orders	4.0667	0.59362

From the study findings in Table 4.8 above, majority of the of the firm managers agreed to a great extent that procurement as a value chain activity employs best inventory management practices (M=4.1333), procurement consolidates orders from all sales representatives so as to benefit from quality discounts offered on bulk orders (M=4.0667) and that through procurement products/services competitively procured to secure lowest possible prices for input purchases of highest quality (M=4.0000) respectively.

4.4.7 Technology

The study sought to establish the extent to which department of the information technology firms in Kenya adopted technology as a value chain activity. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5- To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4.9 Technology as a as a value chain activity

Indicators of Technology	**Mean**	Std. **Dev**
Timely supports all internal departments requirements	4.4667	.74322
Regularly upgrades its processes	3.9333	.45774
Widely used and integrated in all department	4.2000	.67612

From the study findings in Table 4.9, majority of the firm managers agreed to a great extent that technology timely supports all internal departments requirements (M=4,4667) and that technology is widely used and integrated in all department (M=4.2000) respectively. In addition, the majority of the firm managers agreed to a moderate extent that technology regularly upgrades its processes (M=3.9333) respectively.

4,4,8 Human Resource Management

The study sought to establish the extent to which department of the information technology firms in Kenya practiced human resource management as a value chain activity. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4.10 Human resource management as a value chain activity

Indicators of Human Resource Management	**Mean**	**Std. Dev**
Ensure there are adequate number of trained and skilled staff	3.8667	0.74322
Employees are continuously empowered through training to enhance service delivery and product knowledge	4.2000	0.56061
Ensure sufficiently stretched performance targets for itself	4.0667	0.96115

From the study findings in Table 4.10 above, majority of the firm managers agreed to a great extent that human resource management Employees are continuously empowered through training to enhance service delivery and product knowledge (M=4.2000) and that human resource management ensure sufficiently stretched performance targets for itself (M=4.0667) respectively. In addition, the majority of the firm managers agreed to a moderate extent that human resource management ensure there are adequate number of trained and skilled staff (M=3.8667).

4.4.9 Firm Infrastructure

The study sought to establish the extent to which department of the information technology

firms in Kenya used firm infrastructure as a value chain activity. The responses were rated on a five point Likert scale indicating to what extent respondents agree to the statements, where: 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great extent and 5-To a very great extent. The mean and standard deviations were generated from SPSS and are as illustrated in table.

Table 4.11 Firm infrastructure as a value chain activity

Indicators of Firm infrastructure	**Mean**	Std. **Dev**
The company is well organized/structured efficient delivery of its products/services	4.2667	0.45774
Administration protects all the organizations core business property, equipment, personnel and assets against any security threat.	4.1333	0.35187

All premises owned or related by the organization are in proper state ot repair and usable as office or warehouse facility for goods.	4.2000	0.41404

From the study findings in Table 4.11, majority of the of the firm managers agreed to a great extent that the company is well organized/structured efficient delivery of its products/services (M=4.2667), all premises owned or related by the organization are in proper state of repair and usable as office or warehouse facility for goods (M=4.2000) and that administration protects all the organizations core business property, equipment, personnel and assets against any **security** threat (M=4.1333) respectively.

4.5 Inferential Statistics

Pearson's product moment correlation analysis was used to assess the relationship between the variables while multiple regressions were used to determine the predictive power of the value chain and competitive advantage of firms in the information technology industry in Kenya.

4.5.1 Correlation Analysis

The data presented before on inbound logistics, operations, out bound logistics, marketing and sales, services delivery, procurement, technology, human resource management and firm infrastructure was computed into single variables per activity by obtaining the averages of each value chain activity. Pearson's correlations analysis was then conducted at 95%

confidence interval and 5% confidence level 2-tailed. The table below indicates the correlation matrix between the value chain activities (inbound logistics, operations, out bound logistics, marketing and sales, services delivery, procurement, technology, human resource management and firm infrastructure) and competitive advantage.

According to the table, there is a positive relationship between competitive advantage and value chain activities (inbound logistics, operations, out bound logistics, marketing and sales, services delivery, procurement, technology, human resource management and firm infrastructure of magnitude 0.429, 0.123, 0.134, 0.612, 0.272, 0.2, 0.371, 0.123 and 0.075 respectively. The positive relationship indicates that there is a correlation between the value chain activities and the competitive advantage with marketing and sales having the highest value and infrastructure having the lowest correlation value.

This notwithstanding, all the factors had a significant p-value ($p<0.05$) at 95% confidence level. The significance values for relationship between competitive advantage and inbound logistics, operations, out bound logistics, marketing and sales, services delivery, procurement, technology, human resource management and firm infrastructure were 0.11, 0.662, 0.635, 0.015, 0.326, 0.474, 0.173, 0.662, 0.789 respectively. This implies that marketing and sales was the most significant factor, followed by inbound logistics while country of infrastructure was the least significant.

Model	CA	Inbound logisties	Operations	Outbound logistics	Marketing and sales	Serv-ices delivery	Procurement	Technology	HRM	Infrastructure

CA	1.0									
Inbound logistics (r)	0.429	1.0								
(p) Sig. (2 tailed)	0.11									
Operations (r)	0.123	0.061	1.0							
(p) Sig. (2 tailed)	0.662	0.83								
Out bound logistics (r)	0.134	0.24	0.062	1.0						
(p) Sig. (2 tailed)	0.635	0.389	0.825							
Marketing and sales (r)	0.612	0.502	0.35	0.123	1.0					
(p) Sig. (2 tailed)	0.015	0.056	0.201	0.663						
Services delivery (r)	0.272	0.096	0.201	0.055	0.042	1.0				
(p) Sig. (2 tailed)	0.326	0.735	0.472	0.847	0.883					
Procurement (r)	0.2	0.23	0.474	0.339	0.327	0.055	1.0			
(p) Sig. (2 tailed)	0.474	0.41	0.075	0.216	0.234	0.847				
Technology (r)	0.371	0.341	-0.55	0.174	0.085	0.038	0.012	1.0		
(p) Sig. (2 tailed)	0.173	0.214	0.034	0.536	0.762	0.893	0.965			
HRM (r)	0.123	0.317	0.403	0.345	0.452	0.05	0.395	0.103	1.0	
(p) Sig. (2 tailed)	0.662	0.249	0.137	0.207	0.091	0.859	0.145	0.715		
Infrastructure (r)	0.075	0.012	0.164	0.463	0.185	0.431	0.161	0.182	0.056	1.0
(p) Sig. (2 tailed)	0.789	0.967	0.558	0.082	0.51	0.109	0.566	0.516	0.844	

Figure 4.9 Correlation Matrix

4.5.2 Regression Analysis

In addition, the researcher conducted a multiple regression analysis so as to test relationship among variables (independent) on the competitive advantage. The researcher applied the statistical package for social sciences (SPSS V 17.0) to code, enter and compute the measurements of the multiple regressions for the study.

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (competitive advantage) that is explained by all the independent variables (inbound logistics, operations, out bound logistics, marketing and sales, services delivery, procurement, technology, human resource management and firm infrastructure).

4.5.3 Model Summary

The nine independent variables that were studied, explain only 69.0% of the competitive advantage as represented by the R^2. This therefore means that other value chain activities not studied in this research contribute 31% of the competitive advantage. Therefore, further research should be conducted to investigate the value chain activities (31%) that affect competitive advantage of information technology firms in Kenya.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
_1	.831[a]	.690	.132	.38568

Figure 4.10: Model Summary

ANOVA Results

The significance value is .0179[a] which is less that 0.05 thus the model is statistically significance in predicting how inbound logistics, operations, out bound logistics, marketing and sales, services delivery, procurement, technology, human resource management and firm infrastructure affect the competitive advantage in the information technology firms in Kenya. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value = 9.475), this shows that the overall model was significant.

Table 4.12 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1 *	Regression	1.656	9	.184	9.475	.0179[a]
	Residual	.744	5	.149		
	Total	2.400	14			

Coefficient of determination

Multiple regression analysis was conducted as to determine the relationship between competitive advantage and the nine variables. As per the SPSS generated table above, the equation:

(Y = Bo + PiXi + p_2X_2 + P3X3 + p_4X_4 + P5X5+ P_5X_6+ p_5X_7+ p_5X_8+ p_5X_9 +s) becomes:

Y= 5.589+ 0.019Xi+ 0.006X_2+ 0.336X_3+ 0.548X_4+ 0.249X_5+ 0.031X_6+ 0.073X_7+ 0.229X_8+ 0.076 X_9+s

According to the regression equation established, taking all value chain activities into account (inbound logistics, operations, out bound logistics, marketing and sales, services delivery, procurement, technology, human resource management and firm infrastructure) constant at zero, competitive advantage will be 5,589.

The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in inbound logistics will lead to a 0.019 increase in competitive advantage; a unit increase in operations will lead to a 0.006 increase in competitive advantage, a unit increase in out bound logistics will lead to a 0.336 increase in competitive advantage, a unit increase in marketing and sales will lead to a 0.548 increase in competitive advantage, a unit increase in services delivery will lead to a 0.249 increase in competitive advantage, a unit increase in procurement will lead to a 0.031 increase in competitive advantage, a unit increase in technology will lead to a 0.073 increase in competitive advantage, a unit increase in human resource management will lead to a 0.229 increase in competitive advantage while a unit increase in firm infrastructure will lead to a 0.076 increase in competitive advantage.

This infers that marketing and sales contribute most to the competitive advantage followed by out bound logistics. At 5% level of significance and 95% level of confidence, inbound logistics had a 0.906 level of significance, Operations had a 0.690 level of significance, Operations had a 0.6 90 level of significance, Out bound logistics had a 0.398 level of significance, Marketing and sales had a 0.067 level of significance, Services delivery had a 0.407 level of significance, Procurement had a 0.920 level of significance,

Technology had a 0.774 level of significance, Human resource management had a 0.402 level of significance while Firm infrastructure had a 0.861 level of significance hence the most significant value chain activity is marketing and sales.

Table 4.13 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.589	3.593		1.556	.181
	Inbound logistics	0.019	.157	.042	.124	.906
	Operations	0.006	.015	.202	.423	,690
	Out bound logistics	0.336	.364	.419	.924	.398
	Marketing and sales	0.548	.235	-.894	-2.328	.067
	Services delivery	0.249	.276	-.306	-.904	.407
	Procurement	0.031	.296	.039	.105	.920
	Technology	0.073	.241	-.131	-.303	.774
	Human resource management	0.229	.250	.310	.916	.402
	Firm infrastructure	0.076	.413	.084	,185	.861
a. Dependent Variable: Quality						

4.6 Discussion of Findings

The study established that the information technology industry has strong competition. Thus the information technology firms in Kenya adopt various value chain activities to gain a competitive advantage in the industry. In addition, the study found out that quality and lead time were the most significant aspects of competitive strategies adopted by information technology firms in Kenya while other aspects of competitive strategies adopted by information technology firms in Kenya were flexibility and cost respectively.

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The study established that the most significant goal for the establishment of the information technology firms in Kenya were profitability, growth (gain Market share) and survival in market respectively. Other important reasons for the establishment of information technology firms were product and market differentiation, market development and diversification respectively.

©n the extent to which department of the information technology firms in Kenya practiced inbound logistics as a value chain activity the study established that the process system of receiving inputs is capable of detecting counterfeits and poor quality inputs and that inputs are well serialized respectively.

On the extent to which department of the information technology firms in Kenya practiced operations as a value chain activity the study established that 'operations conduct checks to ensure all operations conform to required quality management systems (QMS), operations transform goods into finished products in timely manner and that operations is able to take corrective actions on faulty goods beforehand respectively.

On the extent to which department of the information technology firms in Kenya practiced out bound logistics as a value chain aciivity, the research revealed ihat out bound logistics has

appropriate and secure systems of storing its work in progress goods. In addition, the majority of the firm directors agreed to a moderate extent that out bound logistics has adequate capacity to ensure timely delivery of products to customers/customers can collect goods from centralized location and that out bound logistics has adequate capacity to effectively process goods respectively.

On the extent to which department of the information technology firms in Kenya practiced marketing and sales as a value chain activity, the research revealed that marketing and sales as a value chain activity has the capacity to identify the markets demand and that it attaches importance to having an advertising strategy respectively. In addition, the majority of the firm directors agreed to a moderate extent that marketing and sales as a value chain activity has ability to sensitize customers on variety of latest products available. On the extent to which department of the information technology firms in Kenya practiced services delivery as a value chain activity.

The research revealed that service delivery is excellent for all clients/customers, services delivery promptly resolves client queries/complaints and that services delivery has a service agreement with clients respectively.

On the extent to which department of the information technology firms in Kenya practiced procurement as a as a value chain activity, the researcher found out that procurement as a as a value chain activity employs best inventory management practices, procurement consolidates orders from all sales representatives so as to benefit from quality discounts offered on bulk

orders and that through procurement products/services competitively procured to secure lowest possible prices for input purchases of highest quality respectively. On the extent to which department of the information technology firms in Kenya adopted technology as a as a value chain activity, the study revealed that technology timely supports all internal departments requirements and that technology is widely used and integrated in all department respectively. In addition, the majority of the firm directors agreed to a moderate extent that technology regularly upgrades its processes respectively

On the extent to which department of the information technology firms in Kenya practiced human resource management as a value chain activity, the study established that employees ar£' continuously empowered through training to enhance service delivery and product knowledge and that human resource management ensure sufficiently stretched performance targets for itself respectively. In addition, the majority of the firm directors agreed to a moderate extent that human resource management ensure there are adequate number of trained and skilled staff.

On the extent to which department of the information technology firms in Kenya used firm infrastructure as a value chain activity, the researcher found out that the company is well organized/structured efficient delivery of its products/services, all premises owned or related by the organization are in proper state of repair and usable as office or warehouse facility for goods and that administration protects all the organizations core business property, equipment, personnel and assets against any security threat respectively.

From the con-elation analysis the study established that there is a correlation between the value chain activities and the competitive advantage with marketing and sales having the highest value and infrastructure having the lowest correlation value. This implies that marketing and sales was the most significant factor, followed by inbound logistics while country of infrastructure was the least significant.

From the regression analysis the following regression equation was formulated;

$Y= 5.589+ 0.019Xi+ 0.006X_2+ 0.336X_3+ 0.548Xj + 0.249X_5+ 0.031X_6+ 0.073X_7+ 0.229X_8+$ 0.076 X9+S From the above regression equation, it can be deduced that marketing and sales contribute most to the competitive advantage followed by out bound logistics. At 5% level of significance and 95% level of confidence, the most significant value chain activity is marketing and sales.

The nine independent variables that were studied, explain only 69% of the competitive advantage as represented by the R^2. According to the regression equation established, taking all value chain activities (inbound logistics, operations, out bound logistics, marketing and sales, services delivery, procurement, technology, human resource management and firm infrastructure) constant at zero, competitive advantage will be 5.589.

The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in inbound logistics will lead to a 0.019 increase in competitive advantage; a unit increase in operations will lead to a 0.006 increase in competitive advantage, a unit increase in

out bound logistics will lead to a 0.336 increase in competitive advantage, a unit increase in marketing and sales will lead to a 0.548 increase in competitive advantage, a unit increase in services delivery will lead to a 0.249 increase in competitive advantage, a unit increase in procurement will lead to a 0.031 increase in competitive advantage, a unit increase in technology will lead to a 0.073 increase in competitive advantage, a unit increase in human resource management will lead to a 0.229 increase in competitive advantage while a unit increase in firm infrastructure will lead to a 0.076 increase in competitive advantage. This infers that marketing and sales contribute most to the competitive advantage followed by out bound logistics.

At 5% level of significance and 95% level of confidence, inbound logistics had a 0.906 level of significance, Operations had a 0.690 level of significance, Operations had a 0.6 90 level of significance, Out bound logistics had a 0.398 level of significance, Marketing and sales had a 0.067 level of significance, Services delivery had a 0.407 level of significance, Procurement had a 0.920 level of significance, Technology had a 0.774 level of significance, Human resource management had a 0.402 level of significance while Firm infrastructure had a 0.861 level of significance hence the most significant value chain activity is marketing and sales.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary, conclusion and recommendations of the study in line with the purpose of the study aimed at examining the value chain and competitive advantage of firms in the information technology industry in Kenya.

5.2 Summary of Findings

The findings indicate that indeed information technology firms in Kenya practice Porter's v&lue chain model as evidenced by categorization of its activities into both primary and secondary. Primary activities are the core activities of the firms, however these are heavily anchored on the support activities.

The support functions feel they individually perform well in their set of activities, however , this may not translate to the whole organization. The support functions must therefore offer more customer driven services to the primary activities which essentially add value to their core business.

The Human Resources function for example must take a proactive approach in the recruitment exercise, It must meet all the human resources demands of all the organizations, it must further continue to come up with modern staff development programs that sensitize employees about current technological innovation and products. Furthermore, it must ensure staff especially in the sales team are appropriately motivated and competitively remunerated.

Procurement and supplies function needs to improve on the inventory management system. It should improve the speed of processing procurement requests and reduce any bureaucracy. All the support functions must review their objectives and ensure that all services offered are tailor made to support the key business of the information technology firms. All the firms should therefore get rid of unnecessary processes that do not add value to their business. An understanding of how customers define value becomes the guiding force for determining what to improve.

5.3 Conclusion

The study concluded that the information technology industry has strong competition. Thus the information technology firms in Kenya adopt various value chain activities to gain a competitive advantage in the industry. In addition, the study concluded that quality and lead time were the most significant aspects of competitive strategies adopted by information technology firms in Kenya while other aspects of competitive strategies adopted by information technology firms in Kenya were flexibility and cost respectively.

The study concluded that the most significant goal for the establishment of the information technology firms in Kenya were profitability, growth (gain Market share) and survival in market respectively. Other important reasons for the establishment of information technology firms were product and market differentiation, market development and diversification respectively.

From the correlation analysis the study concluded that there is a correlation between the value chain activities and the competitive advantage with marketing and sales having the highest value and infrastructure having the lowest correlation value. Thus marketing and sales was the most significant factor, followed by inbound logistics while country of infrastructure was the least significant.

From the regression analysis the following regression equation was formulated;

$Y= 5.589+ 0.019Xi+ 0.006X_2+ 0.336X_3+ 0.548X_4 + 0.249X_5+ 0.031X_6+ 0.073X_7+ 0.229X_8+ 0{,}076\ X_9+s$

From the above regression equation, it can be concluded that marketing and sales contribute most to the competitive advantage followed by out bound logistics. At 5% level of significance and 95% level of confidence, the most significant value chain activity is marketing and sales. In addition, the researcher concluded that marketing and sales contribute most to the competitive advantage followed by out bound logistics. At 5% level of significance and 95% level of confidence, the most significant value chain activity is marketing and sales.

5.4 Recommendations for Policy and Practice

The study recommends that information technology firms in Kenya should review their marketing and sales strategies and bridge the existing gaps to gain a higher market share in the information technology industry in Kenya. The study also recommends that information technology firms in Kenya should adopt a hybrid of value chain activities to in order to remain profitable and competitive.

The study also recommends that the management of information technology firms in Kenya should offer continuous training to the firm employees on value chain activities to equip them with skills that will help them in their mandates. This will assist the firms' human resource to work more efficiently and increase their productivity thus increase the firms' competitiveness.

5.5 Limitations of the Study

The limitations of the study included restraint by some informers on openly giving certain areas of dissatisfaction which they felt was confidential. In terms of the concept. Small and Medium sized firms in the information technology industry are still at a growth stage and therefore their structures require strengthening.

In regards to contextual limitation, Small and Medium sized information technology firms are operating in an increasingly challenging environment. They are perennially exposed to new challenges related to high rate of product obsolesce.

Therefore they must be dynamic and adaptive to market changes.In relation to methodological limitations, the research was limited to the use of questionnaires. It would have been interesting to orally interview respondents within the information technology firms to acquire additional information, however due to time constraints, it would have taken an extended period of time. Lastly, given that Porter's value chain model application is **very** wide and involving and as such not all of its aspects, linkages were exhaustively covered by the study.

5.6 Suggestions for Further Studies

Since this study explored the value chain and competitive advantage of firms in the information technology industry in Kenya, the study recommends that similar study should be done in value chain and competitive advantage among the Small and Medium Enterprises in Kenya.

5.7 Implications of the Study on Policy, Theory and Practice

Porter's model observed that the use of value chain analysis leads to gaining competitive advantage in a given industry over a firm's competitors. The findings of this study indicate that a well executed value chain analysis extracts financial benefits across the value chain of an organization and thus having an impact on company profitability. Management needs to entrench an integrated value chain model and support with the relevant recourses to optimize the benefits.

It is important that all departments within the firm which perform both primary and secondary activities must operate in total coordination, cohesion and should share common organizational values to work efficiently. Work processes must be streamlined in line with customer expectations and should keep pace with changes in the operating environment.

In the final analysis, for firms in the information technology industry to be effective and efficient, re-alignment of value chain activities to meet customer requirements will have to be maintained. This can be done through customer focus, innovation and customer relations management. The benefits realized through this realignment will result in reduced cost of operations and achievement of organizational objectives and better understanding of the value chain.

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APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

UNIVERSITY OF NiUROBI
SCHOOL OF BUSINESS
MBA PR.OGRAMME

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Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

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DATE.....I Ojj/iC

TO WHOM IT MAY CONCERN

The bearer of this !$_e$Mer..£t>.C^S. AM^CICO S H I ^ ^ O .

Registration No ... t O

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

10 JUL 2012

IMMACULATE OMANO
'MBA ADMINISTRATOR
MBA OFFICE, AMBANK HOUSE

APPENDIX II: RESEARCH QUESTIONNAIRE

This questionnaire is designed to collect views on the effect of value chain based on Porters model and competitive advantage in the Kenyan information technology industry. Information given will be strictly used for academic purposes.

Section A: General information

1) Name of company_

2) What is your gender? (tick one)

Male [ ] Female [ ]

3) Age (tick one)

20 -30 [ ] 21 -30 [ ] 31- 40 [ ] 40 and above []

4) What is your academic background

Certificate [ ] diploma [ ] undergraduate [ ] postgraduate [ ]

5) Please indicate the type of product or services sold

6) Please indicate the position in the industry_

7) How long have you been in that position?

Less than 3 years [ ] 3 to 5 years [ ] 5 to 7 years [ ] Over 7 years [ ]

8) How long have you worked for the industry?

1 - 2 years [ ] 6 - 1 0 years [ ] Overl5year [ ]

3 - 5 years [ ] 10 - 15 years [ ]

Section B: VALUE CHAIN ACTIVITIES AND COMPETITIVE ADVANTAGE

Value chain consists of (a) the primary activities carried out directly by your department staff that directly adds value to the final product (b) this support activities given to your department by other department to facilitate the performance of these primary activities.

Competitive Advantage

9) How would you describe competition in the business industry in your catchment area?

Weak competition

Strong competition [ ]

* Very strong Competition [ ]

Hyper Competition [ ]

10) Who do you consider as your major competitor?

11) How do you rate the following when dealing with competitive strategies

5 Extremely Important 4. Very Important 3. Moderately Important 2. A little Important 1. Not Important

	5	**4**	**3**	**2**	**1**
Quality					
Lead Time					
Cost					
Flexibility					

12) How important are the following goals in your business? Please rate them in order of their importance using the following scale

5. Extremely Important 4. Very Important 3. Moderately Important
2. A little Important 1. Not Important

	5	4	3
Survival in Market	[ ]	[ ]	[J
Growth (Gain Market share)		L j	[ ]
Profitability	[ ]	[ ]	[ ]
Product & Market differentiation	[ ]	[3	[ ]
Market development	[ ]	[ ]	L j
Diversification		[ ]	[ ]

VALUE CHAIN ACTIVITIES

Please indicate the extent to which department practices the following value chain activities by ticking the appropriate column on a scale of 1-5 where:-

5 = To a very large extent 4 = To a large extent 3 = To some extent

2 = To a small extent 1 = Not at all

In bound logistic

Inbound Logistics	**5**	**4**	**3**	**2**	**1**
Best inventory management practices are applied to input orders					
The process system of receiving inputs is capable of detecting counterfeits and poor quality inputs.					

Ensure sufficiently stretched performance targets for itself					
Firm infrastructure	**5**	**4**	**3**	**2**	**1**
The company is well organized/structured efficient delivery of its products/services					
Administration protects all the organizations core business property, equipment, personnel and assets against any security threat.					
All premises owned or related by the organization are in proper state of repair and usable as office or warehouse facility for goods.					

*

APPENDIX III: LIST OF TOP 100 SMALL AND MEDIUM SIZED INFORMATION TECHNOLOGY FIRMS INTERVIEWED.

	COMPANY NAME
1.	Circuit Business Systems
2.	Com 21 Ltd
3.	Compulynx Ltd
4.	Computech Ltd
5.	Distributed Communications
6.	Isolutions Associates
7.	Lantech Africa Ltd
8,	Microskills Information Technologies Ltd
9.	Simba Technology Ltd
10.	Software Technology Ltd
11.	Specicom Technologies Ltd
12.	Telesoft Communications
13.	Trans Business Machines
14.	Technology Today
15.	Techbiz Ltd

Source: Kenya Top 100 mid-sized companies KPiMG 2009-2011