INFORMATION AND COMMUNICATION TECHNOLOGY CHALLENGES AND SUSTAINABLE COMPETITIVE ADVANTAGE OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

This research project is my original work and has not been presented for any award in any other academic institution or university.

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

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DEDICATION

This thesis is dedicated to our children Lauren Gacheri Mwangi and Ben Mwangi Muraya.

ABSTRACT

The Kenyan banking industry has experienced tremendous growth in the past decade, which has led to increased competition as the banks strive to gain and retain their market share according to the Central Bank of Kenya's 2015 Annual report. Rapid advancement in ICT has had a profound effect on the banking industry and the wider financial sector. This study was aimed at determining the ICT challenges and strategies adopted to sustain competitive advantage in Kenyan commercial banks. The study adopted a descriptive survey of all commercial banks in Kenya. The population of the study comprised of the 43 licenced commercial banks. The data collection tool used to collect the primary data was the questionnaire, which was administered to the respondents though both electronic means and the drop and pick methods. Descriptive statistics was used to analyse the data because this study was modelled on a descriptive framework. The study concluded that ICT as much as being a mandatory factor of production, still offered a big degree of leverage towards the achievement of sustainable competitive advantage. Most of the respondents agreed that ICT made a great contribution to reduce operational costs, engage with more customers, and reach more customers through other channels made possible by the adoption of ICT. The study recommends that studies be conducted on the role of human capital in harnessing the optimum benefit of ICT solutions in the banking sector. This would aid in determining the influence employees have on the amount of benefit harnessed by adopting ICT in their respective organizations and achieving competitive advantage.

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ABBREVIATIONS AND ACRONYMS

ATM: Automatic Teller Machine

CAK: Communication Authority of Kenya

CBK: Central Bank of Kenya

CRB: Credit Reference Bureau

EDI: Electronic Data Interchange

ICT: Information and Communications Technology

IO: Industrial Organization

IT: Information Technology

KBA: Kenya Banker's Association

KCB: Kenya Commercial Bank Ltd

MFBs: Micro Finance Banks

MFC: Mortgage Finance Company

MRPs: Money Remittance Providers

SME: Small and Medium Enterprises

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Firms ought to understand the underlying sources of threats in its industry. These threats result from competitive pressure from other firms in the industry. Understanding these forces is imperative if the firm is to formulate appropriate strategies to respond; which boils down to the firm selecting products, or services to offer and the markets in which to offer them. This makes strategy a deliberate plan of action that the business will adopt in order to develop and grow its competitive advantage. There has been an increasing reliance on Information Communication Technology (ICT) systems for managing business processes as well as driving business strategy across the banking industry. Firms have no option but to comply with globalization trends and to find a fit between globalization and organization strategies.

The firms in the banking Sector continue to face a myriad of challenges, from globalization, competition, volatile market dynamics, competition from both bank and non-bank institutions all seeking more innovative ways to add value to their services. Birch & Young (1997) argues that consumers look for products and services that are convenient and efficient to attain. They also seek for a wide array of products to choose from at competitive rates and which offer maximum returns. Customers have become more sensitised to expect better customer service standards, better products and services as a result of the internet. Banks have to adopt strategies that would ensure their profitability and resilience against the forces that determine industry competition.

This study revolves around three theories, the first being the industrial organization (IO) theory which emphasizes the influence of the industry environment upon a firm. The second is theresource-based theory, which views performance primarily as a function of a firm's ability to utilize its resources. This theory focuses on the specific organization with respect to the competitive environment. The third is the innovation diffusion theory which is concerned with how an innovation adopter's perception of the characteristics of an innovation impacts his or her decision to adopt it. This affects all users of the innovation, from the employee adoption of the innovation to the customer.

In the past decade, there has been a monumental growth of the Kenyan banking industry, which has led to increased competition as the banks strive to gain and retain their market share, CBK Annual Report (2015). The banking industry and the wider financial sector have undergone tremendous changes as a result of ICT's rapid advancement. Increased competition, tighter budgets, regulatory requirements are some of the factors that put more pressure on the banking industry further adding to the hostility of the industry. Banks have had to come up with strategies that would give them a sustained competitive lead over their competitors. ICT as a strategy to achieve this has been adopted by majority of the banks in the quest to achieve lasting competitive advantage through differentiation of products and cost leadership.

1.1.1 Concept of strategy

Strategy has its origin from the Greek military generalship. It is a combination of the words *strategos* and *agos* which mean army and lead respectively. Therefore in strategy, a lot has been borrowed from the military, David (2003). Just like the military, businesses also aim to gain an edge over their competitors. Chandler (1962) defined strategy as the adoption of causes of action by an enterprise towards carrying out the long term goals which it will have determined prior to the fact, and subsequent allocation of resources towards carrying out of these goals. Most of the research conducted on strategic management focuses on business strategies, the environment and organizational performance suggests what business strategies will be adopted, (Pearce& Robinson, 2007).

Wheelen & Hunger (2006) a firm's strategy is its comprehensive plan which guides how it will endeavour to achieve its set objectives. There are three levels of strategy that firms usually consider; corporate, business and functional strategy. Therefore another definition of strategy is the business approaches and competitive moves adopted by an organization so as to produce successful performance. It is the approach used by the firm's management to run the business and strengthen its competitive position.

The types of strategies adopted may vary depending on the situation or the company policies adopted. Mintzberg (1985) classified these into the deliberate model strategy, emergent strategy, opportunistic strategy, imposed strategy, realized strategy and unrealized strategy based on the five Ps of strategy; Strategy as a plan, pattern, as a position, as perspective and for what purpose.

Strategy is classified into three main levels. The first is corporate strategy which describes and outlines the company's overall direction. Business\competitive strategy is the second which emphasizes the competitive position of the business entity's products and services in the market segment or industry where the business unit serves. The third is the functional strategy which is implemented by the functional area. It outlines the roadmap that the functional unit will use to achieve its business and functional area objectives, by maximizing resource productivity

1.1.2 Competitive Advantage

Competitive advantage is the superiority achieved over other contending organizations in the market with regard to the design and distribution of services and products. Sets of distinguished skills, capabilities and assets are required to gain competitive advantage for the company, Porter (1980). One of the keys to realizing sustainable competitive advantage is achieving competitive advantage. In order to exploit external opportunities, the organization has to utilize their internal resources and strengths optimally and therefore achieve sustainable competitive advantage over their rivals in the industry.

The level of competition determines the success or failure of the organizations in the industry. It determines the appropriate activities that the firm should engage in to positively impact on its performance. Innovations, good strategy implementation, positive corporate culture and image contribute to the organizations performance. Firms therefore strive to attain a favourable competitive position in their respective industries. They do this with the aim of establishing a sustainably profitable position against unfavourable industry conditions, (Porter, 1985).

Strategic management focuses on achieving and sustaining a competitive lead over other contending firms' rivals in an industry. Positioning determines where a firm's profitability will be relative to the industry average. Firms can earn high return rates regardless of unfavourable industry structure if they are able to properly position themselves making the average industry profitability modest, (Porter, 1985).

The period of time firms are able to sustain their competitive edges has decreased. This is as a result of other competing firms mimicking the actions or activities of the leading firm and undermining any advantage gained. It has become apparent to firms that it is not enough to merely attain competitive advantage; they must therefore endeavour to obtain sustainable competitive advantage by utilizing optimally their internal capacities and be agile enough to adjust to changes and events external to them, (David, 2011).

1.1.3 Organizational Strategies and Competitive Advantage

Competitive advantage is all about business strategy. Strategies are important in ensuring that the business resources are apportioned effectively and efficiently. The importance of strategy in the successful governance of organizations has been outlined by many studies conducted on the subject. The reason a company is in business is to create wealth for its shareholders, therefore the realization of sustainable competitive advantage is a means to an end, not the end in itself. The end game is to achieve superior long term performance, (Bharadwaj et.al, 1993).

When a firm sustains high profits and performance that transcends the industry average, it is said to hold competitive advantage over its competitors. If the firm is capable of generating value for its customers then it could gain competitive advantage.

Cost advantage can be gained through possession of proprietary technology, achievement of economies of scale, low production costs, differentiated products, cheap raw materials, having efficient delivery systems, and the marketing approach adopted, Porter (1987). The firm's management should determine which factors it would intensify to attain competitive advantage.

Barney (1991) stated that four requirements have to be fulfilled for resources to be considered to be a source of sustainable competitive advantage. The resources must be valuable, rare among firm's current and possible competitors, imperfectly imitable and finally there must not be any strategic equivalent substitute for the resource. A firm's corporate strategy should encompass elements of competitiveness in terms of capital, human and technological resources. The organization's mission and vision statements should articulately indicate how competitive its approach is to business.

1.1.4 Concept of Information and Communication Technology

Banking has always rallied on ICT to acquire, process, and deliver its services to all relevant users. ICT provides the banks with the ability to differentiate their services and products in addition to the acquisition and processing of information by providing convenient services, (Tan & Teo, 2000). This has led to the introduction of automated systems used to deliver both traditional and new banking services and products to its customers directly through interactive and electronic communication channels, enabling access to accounts by customers to conduct transactions.

ICT concepts applications, policies, implementation strategies and techniques, have become an issue of intrinsic importance for local and global competitiveness. Banks that overhaul the whole of their payment and delivery systems by applying ICT to their operations were more likely to survive and prosper in the new millennium, (Woherem, 2000). This has resulted in banks re-examining their service and delivery systems to properly position them within the framework of the dictates of dynamism of ICT, which has led to tremendous changes in the industry linked to the developments experienced in ICT.

1.1.5 Challenges of ICT

The competitiveness of the banks today has its origin in the strategies adopted and applied, in which risk management plays a key role. Banks were among the first to embrace ICT in the 1970s, but they are now handicapped by the costs of maintaining myriad legacy applications. ICT offers numerous opportunities for cutting costs and upgrading capabilities, it also exposes the institutions to risks which may lead to loss of revenue. These risks and strategies adopted to mitigate them will form the ICT challenges encountered in the attainment of competitive advantage.

The idea that ICT's strategic value has increased just as it has become ubiquitous is mistaken. Scarcity, rather than ubiquity is what makes a resource truly valuable. The availability of the core functions of ICT to all; data storage, processing and transport, has transformed it to a necessary commodity factor of production, from a strategic resource. Being a commodity factor of production, it does not provide any distinction to firms that adopt it, (Carr, 2003).

As more customers embrace e-banking and other internet accessed products they migrate away from traditional banking services. This reduces the extent of face-to-face interaction with bank personnel. Reduced switching costs ends up eroding the customers' sense of brand loyalty and commitment leading to their migration to competing brands, (Sarel & Mamorstein, 2003). For proper implementation of services offered though ICT, banks should ensure that all necessary infrastructure; trained workforce, internet access and banking functions are in place and working at maximum efficiency, which adds to the costs of inputs required to maintain these services at least in the short term. This limits the success of e-banking hence there is a need for banks to assess their readiness to offer e-banking services to their clients.

The increasing availability of even newer, more improved versions of ICT solutions in the financial sector contributes to the challenges in ICT as it swiftly erodes gains already achieved towards attaining sustainable competitive advantage. On other hand, consumers are expected to have basic ICT knowledge and internet availability which impacts on the willingness to use this facility. Internet penetration in Kenya is on the rise although there are still areas and populations without access to the internet or computers.

1.1.6 Commercial Banks in Kenya

Commercial Banks in Kenya like all business organizations exist to make profit by offering products and services that are of value to their customers. They operate in a competitive environment consisting of shareholders, competitors and regulators that impact their ability to do business either positively or negatively. The Banking sector in Kenya is dominated by local and foreign commercial banks and a small number of non-bank financial institutions.

Statistics by the CBK for the period ended June 2015 shows a total of 43 banks, 1 MFC, 8 representative offices of foreign banks, 12 MFBs, 3 CRBs, 1 MRP and 86 forex bureaus, (CBK Annual report, 2015). The 43 banks are all under the Kenya Bankers Association's (KBA) umbrella body, which caters for the interests of the member banks and ensures harmony in the industry.

Commercial banks have made significant investments in increasing their distribution channels in order to reach more customers by increasing the number of branches and ATMs. Mobile money networks have continued to grow as Telco's continue to build their cash-in cash-out points enabling their customers to convert cash to electronic money and vice versa. Banks and MFIs also provide agent banking services and have grown their networks significantly.

Strategic alliances in some instances, with other non-banking institutions is one of the strategic developments banks are resulting to enhance their edge in the industry. They are forming partnerships with local and foreign businesses from different sectors in order to increase their transaction base. This also has a major effect on customer reach through agency networks established by these partners. All these developments have seen an increase in the accessibility to banking services and increased competition, (Gubbins, 2015).

The developments in the sector do not come without challenges, as cases of malpractice and fraud are on the increase. Technologies like the block-chain technology (e.g. Bit Coin), a different kind of virtual currency which does not require banks is gaining traction both locally and globally as it gains acceptance from some of the leading global corporates.

The block-chain technology cuts out the distribution chain leaving only the transacting parties. It has no geographical boundaries and the transactions are instantaneous and much more affordable than bank transactions, (Redman, 2016).

1.2 Research Problem

Commercial banks have to come up with competitive strategies in search of favourable competitive positions in the industry in order to adapt to the changed environment and attain competitive advantage. "Electronic banking systems have become the main technology driven revolution in conducting financial transactions. Banks have made huge investments in telecommunication and electronic systems, users have also been validated to accept electronic banking system as useful and easy to use", (Adesina & Ayo, 2010).

Organizations encounter a myriad of challenges towards achieving competitive advantage through the use of ICT. Current research shows that organizations are not able to sustain a competitive edge for a long time, (Wiggins & Ruefli, 2005). Increasing global and domestic competition, economic downturns and volatile financial markets have all added to the pressure on organizations to come up with effective responses to survive to counter this. As a result, each bank is developing a strategy unique to its corporate culture, leading to the industry being in a state of constant change, (CBK annual report, 2015).

A number of researches have been undertaken in the banking sector. Gan et al. (2006) predicted that e-banking is necessary for banks to stay profitable in the future. However, the lack of trust by customers on the systems, or online processes remained a barrier to growth in the adoption of e-banking services. Nitsure (2003) conducted his research on the challenges and opportunities of e-banking and concluded that e-banking substantially lowered the costs of transaction and service delivery and could possibly revolutionize the business of banking. He further explained that developing economies faced similar challenges of poor infrastructure, low literacy levels and poor penetration of information.

Nzuki (2006) determined that most banks operations had been automated and therefore needed frequent ICT audits in his survey of Kenyan commercial banks. None of the studies conducted in Kenya have focused on ICT challenges faced by local commercial banks towards achieving sustainable competitive advantage as most Kenyan banks have adopted and use ICT in their operations.

According to Agboola (2006) the Nigerian banks' adoption of ICT exceedingly impacted on the quality and content of banking operations and therefore presented a notably high potential for business process engineering of Nigerian Banks. The banks' failure to invest in ICT products in order to facilitate the convenience, speed and accuracy of banking operations would result in the banks losing out to their competitors. Ahmed & Islam (2008) observed that banks in developing countries were forced to choose between the two strategic alternatives of the level of sophistication of products and services offered and the choice of delivery channel in adopting e-banking services.

Khan (2007) concluded in his study that the Bangladesh banking sector had reached a satisfactory level, in respect to development of e-banking products and services. This is not without its challenges as banks still experience challenges and problems in developing innovative e-banking products. The private owned banks however became IT savvy within a relatively short time as compared to state owned banks.

No study had been carried out with regard to the ICT challenges faced by Kenyan commercial banks in Kenya towards achieving sustainable competitive advantage. With all the developments in ICT and in the banking sector both positive and negative, how do the ICT challenges faced by Kenyan banks impact the achievement and sustenance of competitive advantage?

1.3 Research Objectives

The study was driven by the two objectives below:

(i) To establish the ICT challenges facing commercial banks in Kenya in achievement of sustainable competitive advantage.

(ii) To determine the strategies adopted by the commercial banks of Kenya to cope with these challenges.

1.4 Value of the Study

To scholars the research will open avenues for further research and analysis of various factors and challenges affecting the application of ICT enabled services in a developing economy. It will also enable researchers to adopt service oriented practices in understanding customer service delivery channels and satisfaction.

To the banking fraternity the study would assist in the understanding of the variables and effects of the ICT challenges and how they impact on the banks' success and performance. It will also enable the banks to draft possible policy guidelines in their institutions.

To the government, customers and stakeholders the study would pass on knowledge on the processes, especially the self-serving technologies and their impact to the industry and overall economy. The government can draft policy guidelines using the valuable information gathered. To the stakeholders, the study will reflect the image of the banking industry in terms of its responses to the challenges facing ICT.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section presents the literature review on the topic of the study. It focuses on the challenges and strategic responses banks adopt so as to remain competitive in the industry they are operating in.

2.2 Theoretical Foundation

This study is anchored on the following theories; the industrial organization theory, the resource based theory and the innovation diffusion theory.

2.2.1 Industrial Organization Theory

The Industrial Organization theory focuses on the influence of the Industry environment upon a firm's performance. "Recent research has supported the conviction that industry factors affect the performance of most firms, except for those that are the notable industry leaders or losers", (Hawawini et.al, 2003). This theory assumes that an organization's performance and survival depends on its ability to adapt to industry forces over which it has little or no control.

Strategic managers seek to understand the nature of the industry and contrive strategies that feed off the industry's characteristics. This forms the assumption that competitors in a given industry will have fairly similar strategies, resources and competencies. If a firm differentiates itself from other firms in the same industry through implementation of a new successful strategy apart from those perceived as the industry norm, other rival firms will seek to mimic this successful strategy by purchasing the resources and competencies that would have been adopted by the higher performing firm. This makes it possible for a firm to ultimately influence the industry.

2.2.2 The Resource Based Theory

Resource based theory focuses on both the internal and external analysis of the organization. "The theory entails an audit of both tangible and intangible assets of a company. The tangible assets may be physical, human and financial resources whereas the intangible could be assets such as brands and patents. Patents and proprietary knowledge serve to restrict entry into an industry. Ideas and knowledge that provide competitive advantages are treated as private property when patented, preventing others from using the knowledge and thus creating a barrier to entry", (Fahy, 2000).

Identifying the weaknesses and strength of an organization makes it easier for the management to discern what is and what isn't achievable. This is done during the internal analysis of the firm, which serves to identify a set of strategic options at the company's disposal. It also serves to identify which options that the company could consider and make informed choices. The strengths are the beneficial aspects of an organization used to develop competitive advantage. They could either be tangible or intangible. E.g. competent human resource, brand loyalty, financial resources, good system controls among others.

A company's weaknesses are qualities that hinder its accomplishment of the set mission and vision. The scarcity or lack of some strengths may serve as a weakness. These weaknesses affect negatively an organization's success and growth and are controllable. The organization should work to minimise or eliminate them if it aims to achieve and maintain a competitive edge above its competitors, (Barney, 1991).

2.2.3 Innovation Diffusion Theory

Innovation diffusion theory or as it is sometimes known diffusion of information theory (DOI) is focused on how members of a social construct adopt new innovations and how they make decisions towards them, (Rogers 2003). There are four main elements that influence the adoption of an innovation; these are the innovation itself, communication channel, time and the social system.

Different innovations tend to spread and get adopted at different rates based on these five characteristics; relative advantage, which is the degree to which the innovation is viewed to be superior to its predecessor by the potential adopter, compatibility, which is the degree to which its perceived to be consistent with existing belief values, its complexity is the degree to which it is sighted to be burdensome to understand, trialability, which describes how easily potential adopters can explore the innovation and observability, being the extent to which the benefit of using the innovation is visible to potential adopters, (Rogers,2003).

The means through which information gets from one person to the next is the communication channel. Most individuals evaluate a new innovation based on the opinion of their peers who may have earlier adopted the innovation. The decision to adopt the new innovation may not have any basis on any scientific research by experts. It will depend on the user's perceived benefit of the innovation to the earlier user, (Rogers, 2003).

The third element affecting the rate of adoption of new innovations is time. It takes time for a potential adopter to form a decision on whether to adopt a new innovation, from first getting knowledge of the innovation, forming an attitude towards it and finally making a decision to either adopt or reject it. How fast an innovation is adopted is usually measured by the number of people in population that adopt the given innovation over a period of time.

The third is the degree to which an individual or organization adopts new ideas or innovations earlier than members of its industry. This is where there seems to be differences in the degrees to which potential adopters are willing to adopt innovations. This applies to both customers and employees of the financial institutions in question. This willingness to adopt innovations is seen to be approximately normally distributed over a period of time, (Rogers, 2003). This normal distribution leads to the demarcation of individuals into five categories with regard to the individuals' innovativeness, from the earliest adopters to the latest adopters. Rogers (2003) classified them as the innovators; these are venturesome and educated with multiple information sources and are seen as the most likely first adopters of a technology, the early majority, late majority and the laggards. Laggards are the extreme opposite of the early adopters usually depending on their neighbours or friends to be their primary source of information about any new innovation.

The fourth element influencing the adoption of an innovation is the social system. Rogers (2003) defined it as "a set of interrelated units engaged in joint problem solving to accomplish a common goal. The social system constitutes the boundary within which an innovation may diffuse." Its structure ultimately affects how the innovation will be adopted.

2.3 Information and Communication Technology in Organizations

Communication technology has grown in its significance in organizations. It enables access to multiple communication channels through leveraging the internet. This has led to the expansion of the term Information Technology (IT) to Information and Communications Technology (ICT). "ICT combines telecommunications, computing and broadcasting and covers any product that will store, retrieve, manipulate, transmit or receive information electronically, including telephones, faxes, computers and televisions", (CCK, 2006). The list of products has increased since the last publication to include any smart devices; watches, cameras, etc. that can be used to transmit data.

A company's technical direction and framework for its technology based developments service is determined by its ICT strategy. It plays a part in supporting the strategic objectives of an organization involving development of new and improved products and service capabilities aimed at attaining a competitive edge over the competitive forces in its industry. Large investments in complex ICT systems that increase a firm's efficiency can lead to a firm creating entry barriers in the market. ICT can be used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers (McKeen & Smith, 2012). It could play a role in the improvement of a firm's products and services by the creation of new unique features enhancing the firm products and services differentiation. ICT creates opportunities that provide direct advantage to banks through the applications and services it can offer, by employing capabilities in ways that competing firms find difficult to match, or by creating new markets and market opportunities..

Strategic changes such as reengineering is supported by ICT, to enable efficient decentralization of operations by providing fast communication links thereby enhancing inter-bank communications through collaboration, e-mails, teleconferencing, video conferencing and the mobile platform though partnerships with telecommunication companies. Another ICT service which enhances performance in banks is the Electronic Data Interchange (EDI) which banks use to digitally connect and communicate with all their branches. It enables transfer of information to and from computers interconnected via either a telecommunication link, electromagnet technology or the most recent chip card technology.

2.4 Competitive Strategies

The process of collecting, storing and analyzing data or information about a company's competitive arena is conducting its competitive intelligence investigation. It results in the actionable output of intelligence ascertained by the needs prescribed by an organization. Its function is the early identification of risks and opportunities in the market before they become obvious, according to (Comai & Joaquin, 2007).The primary basis for all above average performance of organizations is their sustenance of competitive advantage. Organizations can have multiple weaknesses and strengths compared to their competitors.

Cost leadership, the first strategy focuses on the firm setting out to be the low cost producer in its industry. The cost advantage sources will vary depending on the industry structure. Some of these include possession of proprietary technology or knowledge, pursuit of economies of scale, preferential access to raw materials etc. An organization aiming to apply the low cost producer strategy strives to exploit all sources of cost advantage.

Banks have introduced alternative methods to offer their services including online banking, ATMs with varied features and functions, agents, internet banking etc. reducing their need to expand their branch network which is a costly endeavour. This has enabled access to services on a 24/7 scale with minimal human resource involved further reducing on production costs. Banks pursuing this strategy emphasize on the employment of highly experienced staff, development and refining of existing products and investment in organizational learning.

Differentiation is the second differentiation strategy where, "A firm seeks to be unique in its industry. Selecting one or more attributes that many customers perceive as important and positioning them meet those needs. The firm's reward for its uniqueness is the premium price it can charge for its unique products or services", (Porter, 1985).

The focus strategy is the third and rests on the choice of a narrow competitive scope within an industry. The firm tailors its strategic activities to selected segments of the industry, enabling it to achieve competitive advantage on these targeted segments even when it does not possess overall competitive advantage. According to Porter, (1985), "The focus strategy has two variants; in cost focus a firm seeks cost advantage in its target segment, while in differentiation focus a firm seeks differentiation in its target segment".

The focus strategy rest on the differences between a focusers target segment and other segments in the industry. The younger demographic may prefer electronic means of communication e.g. online chats and text messaging. while career professionals' preference would be the use of emails in the commercial banking sector. The older demographic will opt for more personalized face-to-face interaction. The design and delivery of financial services should be customised to these particular segments.

The firm’s reputation has been described as a source of competitive advantage (Porter, 1980). It breeds brand loyalty as customers tend to cross over between markets as a result of reputation and brand identification. Informal social relations between an organization and its stakeholders could be a source of good firm reputation. These relationships and a good reputation are thought to be unique, complex and inimitable, and may be a source of competitive advantage.

Firms should always seek and commit to seeking feedback and using it for development, which is the cardinal quality of the learning organization. Members of learning organizations continue to learn and develop as a result of the organization working to improve their personal skills and qualities. The positive and negative experiences that other members experience serves as a benefit to the entry level personnel. Engagement in continual learning by members of an organization breeds an atmosphere where valid, (Garvin, 1993). This kind of company policy and culture forms an environment where innovation is rife, and give the organization the ability to adapt to changes in the state of technology, competition and industry.. This adaptation to the dynamic nature of business environment, keeps a firm in the forefront thus a source of competitive advantage.

2.5 Empirical Studies and Research Gaps

There has been a great deal of research conducted on strategy in the banking sector, and on the role of ICT in strategy and competitive advantage in organizations. Otieno, (2010) studied the Kenya banking sector’s application of strategy in heightening competitive advantage. The study uncovered that ICT was the principle driving force of competition in the sector and had been widely adopted as a strategy to strengthen competitive advantage. In her conclusion on her study on the strategies adopted by Kenyan commercial banks to build up competitive advantage, Ogori (2010) intimated that competitive advantage succeeded adoption of unique non imitable strategies, or better execution of strategies already adopted by competitors. Ouma & Munyoki, (2010) launched an investigation into the Kenyan banks' marketing strategy to address the service breakdown among SME customers. Their results concurred with Ongori (2010) that competitive advantage was only achievable where the firms' capabilities were valuable, rare and non-substitutable.

Warucu (2001) in his research on the Kenyan commercial banks and the competitive strategies they employed. He discovered that focus and product differentiation are some of the major strategies that banks have employed in order to outdo each other. Proactive, rather than reactive strategies such as research on changing customer needs and preferences should form the basis of strategic planning. Kiptugen, (2003) ascertained this in a case study on "KCB's strategic responses to changing competitive environment".

A study on "The relationship between competitive strategies and firm performance in the Kenyan telecommunication industry" by Arasa & Gathinji (2014 revealed that the telecommunications industry in Kenya is highly competitive. This has driven companies to adopt competitive strategies like service and product differentiation, strategic alliances, low cost leadership and market focus strategies to a great extent in order to gain a competitive edge. Arasa & Gathinji (2014) concluded that all the strategies employed had a positive impact, and that market focus strategies contributed most significantly to the firm's performance.

Awuah (2011) conducted a case study on Ghana Commercial Bank Limited evaluating its strategies for achieving competitive advantage in its industry. The goal of his study was to analyse the bank's current competitive strategies being pursued at the time of study, diagnose reasons for its success or failure, determine the impact on the banks performance and make recommendations to better the bank's competitive advantage in the industry. Bezniki (2012) intimated that ICT represented a critical success factor in knowledge management in her paper on whether ICT can be a source of competitive advantage and that it played an important role in decision making. She however indicated that ICT alone would not improve performance or achieve, let alone sustain competitive advantage.

Basweti et al. (2013) studied the impact and challenges of ICT adopted on in the Tanzanian banking sector. Many of the respondents in his study agreed that ICT had a major impact on banking. However being a developing technology, it required the banking professionals to enhance their skills due to ICT's dynamicity and the banks put more effort on customer awareness.

Many studies have been done on strategies and competitive advantage, and the impact of ICT in improving performance and gaining competitive advantage in the banking sector. None have been carried out on the ICT challenges and sustainable competitive advantage in the Kenyan Banking Industry, thus forming my research gap. What are these ICT challenges experienced by banks and how do they impact achievement of sustainable competitive advantage? What strategies are the banks employing to counter them?

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the method and procedure that was used to carry out the study. It describes the research design, the target population, sampling strategy, data collection, analysis and presentation procedures and methods.

3.2 Research Design

The research design can be defined as, "A blueprint for conducting a study with maximum control over the factors that may interfere with the validity of the findings. It is a plan for collecting and utilizing data so that desired information can be obtained with sufficient precision, (Burns & Grove, 2003).

This study adopted a descriptive survey of all commercial banks in Kenya. Gay (1981) defines a survey as, "An attempt to collect data from members of a population in order to determine the population's current status, with respect to one or more variables". A descriptive study assesses and reports the way things are and commonly involves appraising opinions and attitudes of the respondents towards procedures, individuals and organizations. This research design was selected as it would be more effective in collecting many different kinds of information, and is quick.

3.3 Population of the Study

Mugenda (1999) defines population as "Entire group of individuals, events or objects having common observable characteristics". This study targeted all the commercial banks licenced by the Central Bank of Kenya, all headquartered or with major branches within the city.

The population of the study encompassed all the 43 licenced commercial banks according to the Central Bank of Kenya website, (CBK, 2015). A census approach was adopted. The respondents of the survey were the Branch Managers, Chief Operations Officers, and the heads of the ICT departments of the banks. They were concerned with the corporate strategies the banks adopted, and the business or competitive strategy adopted at the business unit level.

3.5 Data Collection

The data collection tool used to collect the primary data was the questionnaire. The questionnaires were distributed through both drop and pick method and electronic means. The questionnaire was divided into 3 parts. The first section covered general information, the second section covered ICT challenges and the third section covered the strategies adopted. The responses was rated on a 5-point Likert scale, where 1 represented Not at all, 2-little extent, 3-Moderate extent, 4-great extent and 5-very great extent.

Secondary data was obtained from Central Bank of Kenya's annual supervision reports on the banks performance. In addition, other audited bank reports were also used to supplement the data.

3.6 Data Analysis

Descriptive statistics were used to analyse the data since this study was modelled on a descriptive framework. Data in part A of the questionnaire was analysed using frequency distributions and percentages to determine the profile of respondents.

Part B of the questionnaire was analysed using mean scores and standard deviations to determine strategies employed by commercial banks in Kenya. The differences in competitive strategies between the banks was analysed by comparing mean scores and standard deviations of the banks. The mean scores of the likert scale were used to determine impact of competitive strategies employed by commercial banks in Kenya.

CHAPTER FOUR

DATA ANALYSIS, PRESENATION AND DISCUSSION

4.1 Introduction

This chapter presents the results of the data collected on the ICT challenges commercial banks experience and the strategies adopted to address these challenges. A total 129 respondents, 3 from each bank were presented with the questionnaires. This resulted in a response rate of 72%, deemed very well for statistical reporting. A response rate above 50% is deemed adequate while a rate above 70% is deemed very well for statistical reporting, (Mugenda & Mugenda, 2003).

The study made use of both absolute and relative frequencies on the single response questions posed. The 5-point Liker scale was used in the multiple response questions whereby data collected was analyzed by computing the means and standard deviations. The results were then exhibited in relevant tables with explanations given in prose.

4.2 Demographic Information

The study sought to inquire information on the period the respondent had been with their respective bank at the time the data was being collected. This information was aimed at analysing the suitability of the respondents involved in responding to the questions posed by the questionnaires regarding ICT challenges faced by banks and the strategies adopted to achieve and sustain competitive advantage.

The study used open ended questions on evaluating the organisational profiles of the different banks. The study established that all the banks were in operations for more than nine years. It further established that each of the banks had more than three branches and more than 100 employees. This implies that the banks are already established.

4.2.1 Bank Ownership

The study sought to establish the ownership of the banks based on the responses from the respondents. The findings are as shown in table 4.2 below.

Table 4.2: Bank Ownership

Ownership	**Frequency (N)**	**Percent (%)**
Private	8	8.5
Public	11	11.7
Both Local and Foreign	29	30.9
Local	20	21.3
Foreign	26	27.7
Total	**94**	**100.0**

Source: Research data

From table 4.2, 30.9% of the respondents indicated that their banks had both local and foreign ownership, 27.7% of the respondents indicated that their banks were foreign owned, 21.3% indicated that theirs were locally owned. 11.7% and 8.5% of the respondents indicated that the banks they worked for were public owned and privately owned respectively.

4.2.2 Period worked with Current Bank

The respondents were requested to indicate the period of time they had worked with their current bank at the time of filling in the questionnaire. The findings are as presented in the table 4.3 below.

Table 4.3 Periods Worked with Current Bank

	Frequency (N)	Percent (%)
1 year and below	9	9.6
2-5 years	40	42.6
6-10 years	41	43.6
over 10 years	4	4.3
Total	**94**	**100.0**

Source: Research data

Findings in table 4.3 above indicate that 43.6% of the respondents had worked for 6-10 years in their respective banks, while 42.6% had worked for 2-5 years. Those that worked for less than on1 year constituted 9.6% of the respondents. Lastly, 4.3% of the respondents had worked in their current banks for more than 10 years.

4.3 ICT Challenges Faced

The study sought to find out from the respondents the extent to which their respective banks faced ICT challenges as a barrier to achieving sustainable competitive advantage. The responses were placed on a 5- point likert scale ranging from 1 (Not at all) to 5 (very great extent). Standard deviation was used to indicate the variation or "dispersion" from the "average" (mean). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data is spread out over a large range of values. The study findings are tabulated in table 4.4 below.

Table 4.4 ICT Challenges

	Mean	**Std. Dev**
Increased competition from financial technology companies.	3.7660	.75385
High maintenance and support costs.	3.1702	1.05380
Increasing customer expectations.	3.1383	1.12260
Impact of the Social Media on the Bank's reputation.	3.0532	.89643
Costs of improvements on existing ICT systems and infrastructure to match Industry regulations and competitors	2.9043	.84331
Changes in compliance regulations eroding gains achieved leveraging ICT.	2.8830	1.05603
Customers being able to switch banks with minimum costs to themselves.	2.8617	.66561
Increase in ICT related fraud from external sources.	2.7766	.74997
High costs of acquisition of the ICT technology.	2.7553	1.18853
Adoption of ICT having no impact the growth of the bank.	2.7340	.97469
Adopted technologies becoming obsolete as a result of upgrades.	2.7021	.81425
Diminishing customer loyalty.	2.5532	.75658
Adoption of ICT having no impact on operational efficiency.	2.4362	.97890
Change in organizational structures of the Bank	2.3936	1.11893
Customers shunning ICT related services due to security	2.3830	.34485

concerns.		
Poor or lack of infrastructure to support ICT related services and products e.g. in the rural areas.	2.3617	.97110
Impact of the alternative global virtual currencies gaining traction globally that exist autonomously from the banking infrastructure. E.g. Bitcoin.	2.3617	1.12500
System failures/downtimes.	2.3511	.81263
Increase in ICT related fraud within the bank	2.2660	.86975
Unavailability of skilled ICT personnel	2.1383	.94586
Technology being unreliable to provide access to bank's services and products.	2.1277	.93019
Service providers not being able to meet their Service Level Agreements	2.1064	.94434
Customer's inability technology use.	2.0426	.96068
The banking institution not having any ICT system installed.	1.4362	1.77533

Source: Research data

From the findings in table 4.4 above majority of the respondents to a great extent agreed that Increased competition from financial technology companies was one of the major ICT challenges encountered as an impediment to achieving competitive advantage, (Mean=3.7660). Further the respondents agreed to a moderate extent agreed that high maintenance and support costs were a challenge as was the impact of social media on the bank's reputation.

Costs of improvements on existing ICT systems and infrastructure to match industry regulations and competitors affected the banks to a moderate extent, (Mean=2.9043) whereas changes in compliance regulations were seen to a moderate extent to be eroding gains achieved leveraging ICT with a mean of 2.8830.

Majority of the respondents agreed that their banks had ICT systems installed; which meant that this was not a major challenge faced. They also agreed that their customers' inability to use technology had little impact as a challenge and was felt to a little extent, (Mean=2.0426). The banks' service providers were able to meet their agreed upon service level agreements as most respondents viewed this as a challenge faced to a little extent, mean-2.1064. According to the respondents ICT personnel are not scarce and that adopted technologies were reliable in providing the banks services and products. Most of the respondents agreed that ICT adoption had a moderate impact on operational efficiency (2.4362), as was the impact of the alternative global virtual currencies, for example Bitcoin, gaining traction globally that exist autonomously from the banking infrastructure (Mean=2.3617)

4.4 Strategies Adopted

The respondents were asked to indicate the extent to which they agreed with the strategies adopted to deal with ICT challenges to achieve sustainable competitive advantage of commercial banks in Kenya. The responses were placed on a 5-Likert scale ranging from 1 (Not at all) to 5 (very great extent). Standard deviation was used to indicate the variation or "dispersion" from the "average" (mean). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data is spread out over a large range of values.

The study findings are tabulated in table 4.5 below;

Table 4.5 Strategies Adopted

	Mean	**Std. Dev**
Maintenance of good company reputation.	3.9681	.80925
Adopting the innovation strategy, coming up with unique products for different markets.	3.7447	.87910
Offering unique products and services to customers	3.7021	.82735
ICT systems adopted are able to reduce costs of production and subsequently lower prices of services.	3.5532	1.00126
Investments in ICT security infrastructure, audits.	3.4255	1.14994
Customers having access to banking services and products through a wide network of banking halls.	3.3617	1.35083
Leveraging the internet and social media to reach more customers for support.	3.3085	1.07790
Performing ICT audits and customer education and awareness on security	3.2128	.89048
Ensuring that customers can access banking services through all the channels; ATMs, online banking, mobile USSD, agency banking etc. (multi-channel access)	3.1064	.82264
Increased bank-customer interaction on-line.	3.0213	1.03673
Customer education and awareness on banking products.	2.9894	.64749
Partnerships with Telecommunication companies to widen the reach to customers.	2.9834	.84871
Customers having online access to banking services and	2.9468	.78105

products.		
Increased bank-customer interaction in person.	2.9149	.78507
Investments in up to date ICT security infrastructure.	2.8298	1.01217
Using the over 90% mobile phone penetration in Kenya to reach more customers even where the bank has no physical presence.	2.8298	.74254
Customers having access to banking services and products through their mobile phone lines (USSD).	2.7766	.83156
Increasing the number of branches to reach more customers.	2.7128	1.16971
Strategic alliances, leveraging ICT strengths of partners for mutual benefit.	2.6809	.81929
Use of traditional product awareness campaigns. E.g. Television, radio, print media etc.	2.6489	.98054
Use of digital product awareness campaigns, digital marketing.	2.6170	.68950
Bank's agility to adapt to changes in the market	2.5106	.94749
Customers having access to banking services and products through a wide network of agents.	2.3723	.98356
Customers having access to banking services and products through a wide network of ATMs	2.2872	1.16048

Source: Research data

From the findings in table 4.5 above majority of the respondents to a great extent agreed that the was maintenance of good company reputation (Mean=3.9681), adopting the innovation strategy, coming up with unique products for different markets with a mean of3.7447 and offering unique products and services to customers as strategies that the banks adopted to a great extent.

ICT systems adopted were found to a moderate extent to reduce costs of production and subsequently lower prices of services with a mean of 3.5532. Further the findings indicate that the respondents moderately agreed that investment in ICT security infrastructure and audits was an effective strategy to overcome some of the ICT challenges with a mean of 3.4255. Respondents indicated that ensuring customers could access banking services through a wide network of branches worked as a strategy to a moderate extent with a mean 3.3617.

Leveraging the internet and social media to reach more customers for support was found to have a moderate impact on the banks strategy to achieve sustainable competitive advantage with a mean of 3.3085. Increased bank-customer interaction on-line was effective to a moderate extent with a mean of 3.0213. The study found that customers having access to banking products and services had little effect on the challenges facing ICT with a mean of 2.2872. The findings revealed that banks were rigid to changes in the market, and were not as adaptable to them. This as a strategy was adopted to a little extent basing on the findings, mean-2.5106.

4.5 Discussion

This sector provides a discussion of the findings from the study. The objective of the study was to determine ICT challenges faced by the commercial banks in Kenya and the strategies they employed to counter them in order to achieve sustainable competitive advantage.

The study revealed that banks in Kenya leveraged superior customer service, highly trained and competent personnel and a good reputation to achieve sustainable competitive advantage. It also revealed that ICT was used to create more ways for customers to access the banks services worked to boost their competitiveness. As much as non-bank financial technology firms posed as a threat to the banks' competitiveness, partnerships and liaisons with these companies served to expand their transaction base.

Customers have become more aware of the kinds of services and products they expect to get from the banks. This heightened sensitivity to quality products and services determines the customer's loyalty. Therefore competing banks need to work to out serve their opponents by exceeding their customer's expectations through delivering on the brand promise and being the customer's right partner. Customers expect fast and accurate services, convenient availability of services, and a good relationship with the bank which makes it pleasant to engage with. This breeds loyalty.

The commercial banks' inflexibility to adapt to the industry forces, as was made evident when most respondents indicated that most banks took too long to respond to abrupt changes in the industry. This made it possible for the few that were more reactive to industry disruptions to gain competitive advantage. The banks that were very innovative in terms of the services they offered or their unique strategies ended up influencing the industry, leaving the less flexible one to trail and try to mimic the more successful ones.

This study presents findings similar to other studies. Otieno (2010) in his study on the Kenyan banking sector's application of ICT in heightening competitive advantage uncovered that ICT was the principle driving force in the sector, and had been adopted to a great extent as a strategy to strengthen competitive advantage. This study also agreed with the findings from the research conducted by Warucu (2001), on the Kenyan commercial banks and the competitive strategies they employed. He discovered that focus and product differentiation were some of the major strategies that banks had employed in order to outdo each other. Proactive, rather than reactive strategies such as research on changing customer needs and preferences should form the basis of strategic planning.

The Resource based theory, according to Barney (1991), argues that an organization needs to perform an internal audit of its strengths and weaknesses. To achieve a competitive edge over its rivals it needs to minimise or eliminate these weaknesses and utilize to the maximum its strengths. Notably, the essence of business is to create competitive advantage. For instance, having a low-cost of production leveraging ICT e.g. one employee is able to serve many more customers per day today than in the past when ICT had not been widely embraced, just like banks today are able to serve more clients through self-service channels that are available 24/7.

All the respondents agreed that their banks had ICT systems installed. The differentiating factor was to what extent the banks have adopted ICT and the kind of strategies adopted to leverage it to achieve sustainable competitive advantage. This is on line with the resource based theory where the organization assesses its capacity and inadequacies, and works to exploit its strengths and mitigate its risks. Some of the banks have made efforts to increase their customer base by building agency networks making their banking services available to their customers outside normal bank open hours and even where the banks have no branches, through the utilization of ICT.

Other banks have partnered with telecommunications companies in order to offer their services and products through the telecommunication company's' subscription base, innovative products like mini-loans have been embraced by the customers and the industry at large. Proper identification of customers, base of customer loyalty and proper training of employees on customer service is very important. Carrying out of market intelligence is required so as to know what the competitor is currently planning to do or has already done in order to take the right action on time.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter presents summary of findings on ICT challenges and sustainable competitive advantage of commercial banks in Kenya. The chapter also presents the conclusions drawn from the findings and the recommendations made thereon.

5.2 Summary of Findings

The study found that some of the ICT challenges experienced by the commercial affected the bank to a more than moderate extent. These were increased competition from financial technology companies, high maintenance and support costs of the ICT system, increased customer expectations and the social media also had a great impact as one of the ICT challenges. Further on ICT challenges in banks there were high costs of improvements on existing ICT systems and infrastructure to match Industry regulations and competitors. Also the study found that there was Increased ICT related fraud from external sources. In addition the study found that adoption of some ICT systems had no impact on the growth of the banks and some of the adopted technologies becoming obsolete as a result of upgrades and the availability of many options led to diminishing customer loyalty.

Further the study found that Adoption of ICT not having any impact on operational efficiency was not a challenge experienced by most of the banks, as most respondents agreed that ICT adoption had a positive impact on operational efficiency. Change in organizational structures of the Banks. In some cases Customers were shunning ICT related services due to security concerns and that there were Poor or lack of infrastructures to support ICT related services and products. Further the study found that there System failures/downtimes and that Increased ICT related fraud within the bank was a challenge for the banks. Unavailability or inadequate skilled ICT personnel were also a challenge but had no much impact. Mostly the Service providers were not able to meet their Service Level Agreements, there was Customer's inability technology use and that the banking institutions had ICT systems installed.

Further the study found that Maintenance of good company reputation was a common strategy, coming up with unique products for different markets. Offering unique products and services to customers, ICT systems adopted were able to reduce costs of production and subsequently lower prices of services. Further the study found that further strategies such as Investments in ICT security infrastructure audits, Customers had access to banking services and products through a wide network of banking halls, Leveraging the internet and social media to reach more customers for support, Performing ICT audits and customer education and awareness on security, Ensuring that customers can access banking services through all the channels; ATMs, online banking, mobile USSD, agency banking and Increased bank-customer interaction on-line.

In addition further strategies included Customer education and awareness on banking products, partnerships with telecommunication companies to widen the reach to customers, online access to banking services and products, increased face-to-face bank-customer interaction. Investments in continuous upgrades to the ICT systems and infrastructure adopted, has been seen to be one of the strategies used by the banks, in order to keep up with new security and functional features. The use of mobile phones to the access banking services and products was also cited as one of the strategies employed by the respondents. Partnerships forged to leverage the ICT strengths of partners for mutual benefit and the use of digital product awareness campaigns, digital marketing were also strategies widely embraced.

5.3 Conclusion

The study concludes that banks were faced by many ICT related challenges as seen in the result of the survey. It also concludes that ICT as much as being a mandatory factor of production, still offers a big degree of leverage towards the achievement of sustainable competitive advantage. Most of the respondents agreed that ICT made a great contribution to reduce operational costs, engage with more customers, and reach more customers through other channels made possible by the adoption of ICT.

High maintenance costs, increased customer expectations, poor infrastructure to support ICT initiatives and requirements by both the industry and regulators to comply with set standards still continue to be a major challenge facing ICT in being a source of sustainable competitive advantage. Most banks have taken measures to address most of the challenges facing ICT. ICT infrastructure audits are carried out so as to seal any weakness found and improve on the security of the financial systems. Customer awareness campaigns on security and frau also have been found to play a big role in addressing the security concern. Giving customers multi-channel access to banking products and services, in addition to giving customers 24 hour access to banking products has to great extent increased accessibility to banking products and services as opposed to the traditional over-the-counter service channel as evidenced by the CBK Annual Report, (2015). There is an increase in efficiency as one employee served an average of 770 customers in 2014 as compared to 992 customers in 2015.

5.4 Recommendations

Further the study recommends that software updates, regular ICT infrastructure audits and customer awareness campaigns should take place regularly. Banks that have embraced partnerships with other non-bank institutions e.g. telecom companies have seen a great increase in their customer base and even in some cases have carved a new niche of customers for their products. Such partnerships have proved to be beneficial to both parties. This study also recommends banks embracing innovation of new products and services to reach or even create new market niches.

Leveraging ICT has been seen to access even the previously unreachable population that was located in areas where bank infrastructure could not reach. Kenya has a mobile penetration of 88.1% with 37.8 million subscribers, up from 36.1 million in the previous quarter according to the Communications Authority Quarter 1 report (2015/16). Mobile penetration is still growing as more of the population embraces mobile phones and as the mobile infrastructure penetrates the previously inaccessible regions. This means that the market is still growing and banks need to reorganize their activities to tap into this potential.

5.5 Limitations of the study

While conducting the study the researcher encountered a number of challenges. Securing appointments with the respondents some of whom were unwilling to participate was one of them. This was countered by hiring qualified assistants to professionally handle some of the problems pertaining the respondents. In some of the organizations company policies against participation in academic research surveys had been passed.

Confidentiality being a major concern of some of the respondents, the respondents were in some instances not truthful as they felt the need to tell the researcher what they thought the researcher wanted to hear. Some participants refused to provide answers to questions they viewed to be too personal or sensitive.

5.6 Suggestions For Future Study

During the study the researcher came across areas that would be interesting for further investigation. The study recommends that studies be conducted on the role of human capital in harnessing the optimum benefit of ICT solutions in the banking sector. This would aid in determining the influence employees have on the amount of benefit harnessed by adopting ICT in their respective organizations and achieving competitive advantage.

Studies could also be conducted on the trends of consumer adoption of specific ICT products based on the Innovation Diffusion Theory. This would offer a great service to marketing managers on how to design and deploy specific products to different target markets. This will give insight to more efficient ways to carry out different marketing campaigns for different target markets.

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APPENDICES

Appendix I: Questionnaire

Questionnaire guide for the research on ICT challenges and sustainable competitive advantage in the banking sector.

SECTION A: GENERAL INFORMATION

Name of Bank:……………………………………………………………………….

Duration the Bank has been in operation…………………………………………

Size of the Bank:

Number of branches………………………

No. of employees………………………..

Ownership: Private ( ) Public ( ) both Local and Foreign ( )

Local ( ) Foreign( )

How long have you worked with your current bank?

1 year and below ( ) 2-5 years ( ) 6-10 years ( ) over 10 years ( )

SECTION B: ICT CHALLENGES FACED

To what extent do you encounter each of the following ICT challenges as an impediment to the achievement of sustainable competitive advantage in your bank? Rate on a 5-Point scale, where 1= Not at all, 2= Little extent, 3= Moderate extent, 4= Great extent and 5= Very great extent.

ICT CHALLENGES	1	2	3	4	5
The banking institution not having any ICT system installed.					
Customer’s inability technology use.					
Technology being unreliable to provide access to bank’s services and products.					
System failures/downtimes.					

Customers shunning ICT related services due to security concerns.					
Poor or lack of infrastructure to support ICT related services and products e.g. in the rural areas.					
High costs of acquisition of the ICT technology.					
High maintenance and support costs.					
Lowered switching costs. Customers being able to switch banks with minimum costs to themselves.					
Diminishing customer loyalty.					
Increasing customer expectations.					
Increase in ICT related fraud within the bank					
Increase in ICT related fraud from external sources.					
Increased competition from financial technology companies.					
Service providers not being able to meet their Service Level Agreements					
Unavailability of skilled ICT personnel					
Costs of improvements on existing ICT systems and infrastructure to match Industry regulations and competitors					
Adoption of ICT having no impact on operational efficiency.					
Adoption of ICT having no impact the growth of the bank.					
Changes in compliance regulations eroding gains achieved leveraging ICT.					
Change in organizational structures of the Bank					

Adopted technologies becoming obsolete as a result of upgrades.					
Impact of the Social Media on the Bank's reputation.					
Impact of the alternative global virtual currencies gaining traction globally that exist autonomously from the banking infrastructure. E.g Bitcoin.					

Other ICT challenges experienced? Please specify ……………….........................

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SECTION C: STRATEGIES ADOPTED

To what extent do you apply each of the following strategies to cope with the ICT challenges encountered in ICT.

Rate on a 5-Point scale, where 1= Not at all, 2= Little extent, 3= Moderate extent, 4= Great extent and 5= Very great extent.

STRATEGIES ADOPTED	1	2	3	4	5
Increased bank-customer interaction on-line.					
Increased bank-customer interaction in person.					
ICT systems adopted are able to reduce costs of production and subsequently lower prices of services.					
Use of traditional product awareness campaigns. E.g. Television, radio, print media etc.					
Use of digital product awareness campaigns, digital marketing.					
Customers having access to banking services and products through a wide network of banking halls.					
Customers having access to banking services and products through a wide network of agents.					
Customers having online access to banking services and products.					
Customers having access to banking services and products through a wide network of ATMs					
Customers having access to banking services and products through their mobile phone lines (USSD).					

Ensuring that customers can access banking services through all the channels; ATMs, online banking, mobile USSD, agency banking etc. (multi-channel access)					
Investments in ICT security infrastructure, audits.					
Customer education and awareness on banking products.					
Maintenance of good company reputation.					
Partnerships with Telecommunication companies to widen the reach to customers.					
Investments in up to date ICT security infrastructure.					
Performing ICT audits and customer education and awareness on security					
Leveraging the internet and social media to reach more customers for support.					
Bank’s agility to adapt to changes in the market					
Strategic alliances, leveraging ICT strengths of partners for mutual benefit.					
Offering unique products and services to customers					
Using the over 90% mobile phone penetration in Kenya to reach more customers even where the bank has no physical presence.					
Adopting the innovation strategy, coming up with unique products for different markets.					
Increasing the number of branches to reach more customers.					

Other strategies adopted? Please specify ………………..

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Thank you for your co-operation.

Appendix II: List of Commercial Banks in Kenya

Africa Banking Corporation Bank of Africa Kenya Limited Bank of Baroda (K) Limited Bank of India Barclays Bank of Kenya Limited CFC Stanbic Bank Limited Charterhouse Bank Limited Chase Bank (K) Limited –Under statutory management Citibank N. A Kenya Commercial Bank of Africa Limited Consolidated Bank of Kenya Limited Co-operative Bank of Kenya Limited Credit Bank Limited Development Bank Limited Diamond Trust Bank Kenya Limited Ecobank Kenya Limited Equatorial Commercial Bank Limited, now Spire Bank Equity Bank Kenya Limited Family Bank Limited Fidelity Commercial Bank Limited First Community Bank Limited Guaranty Trust Bank (K) Limited Giro Commercial Bank Limited Guardian Bank Limited Gulf African Bank Limited Habib Bank A.G. Zurich Habib Bank Limited	Imperial Bank Limited- In receivership I & M Bank Limited Jamii Bora Bank Limited KCB Bank Kenya Limited Middle East Bank (K) Limited National Bank of Kenya NIC Bank Limited Oriental Commercial Bank Limited Paramount Bank limited Prime Bank Limited Sidian Bank Limited Standard Chartered Bank Ltd Transnational Bank Limited UBA Kenya Bank Limited Victoria Commercial Bank Limited

Source: CBK annual report, (2015)