

**TECHNOLOGY AND COMPETITIVE ADVANTAGE OF
COMMERCIAL BANKS IN KENYA**

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DECLARATION

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

Signed----- Date-----

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D61/70031/2008

This research has been submitted for examination with my approval as a University Supervisor

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DEDICATION

To my dear family, you are always there for me. That is the wonder of you. This milestone would not have been possible without your continuous love, support, and encouragement. Tafrotha Mugusia and Samara Kadi, you kept me going, I dedicate this work to you.

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ABSTRACT

Technology has greatly changed the way that commercial banks and consumers interact. A shrinking customer base, increases in number of commercial banks with almost identical products have led to stiff competition. As a result, commercial banks have generally adopted the use of technology in service delivery to customers. This study's main objective was to the relationship between technology and competitive advantage in commercial banks in Kenya. The research was carried through across-sectional survey design which questioned respondents on investment in technology and perceived competitive advantage. The respondents of the study were employees of banks with a focus on managers in operations, IT and customer service departments. A total of 78 questionnaires distributed, however only 60 banks responded. The Statistical Package for Social Science (SPSS) version 17.0 was used in data analysis. The data collected was analyzed by use of frequency, percentage, means and correlation analysis. The findings revealed that, commercial banks have placed invested in technology in traditional practices such as use of ATMs, while embracing Mobile Banking mainly as a result of reacting to competition from mobile service providers. Commercial banks have also automated cheque imaging and real time payments as a result of this being a requirement by the sector's regulator. Commercial banks have gained competitive advantage mainly through increased turnover and profitability and expanded geographical reach. The study recommends concerted effort to invest in technology for more personalised service and high quality customer service needs to be exploited.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Technology is the making, usage, and knowledge of tools, machines, techniques, crafts, systems or methods of organization in order to solve a problem or perform a specific function. The term can either be applied generally or to specific areas: examples include construction technology, medical technology, and information technology. Technology is properly defined as any application of science to accomplish a function. The science can be leading edge or well established and the function can have high visibility or be significantly more mundane but it is all technology, and its exploitation is the foundation of all competitive advantage. The goal of much of business strategy is to achieve sustainable competitive advantage. Competitive advantage occurs when an organization acquires or develops an attribute or combination of attributes that allows it to outperform its competitors. These attributes can include access to highly trained and skilled personnel human resources. When a firm sustains profits that exceed the average for its industry the firm is said to possess a competitive advantage over its rivals.

Kenyan banks have exponentially embraced the use of information and communication technologies in their service provision. They have invested huge amounts of money in implementing the self and virtual banking services with the objective of improving the quality of customer service. Some of the ICT-based products and services include the introduction of SMS banking, ATMs, Anywhere banking software's, Core banking solution, Electronic clearing systems and direct debit among others. The banking

industry has also over years continued to introduce a wide range of new products, prompted by increased competition, embracing ICT and enhanced customer needs. As a marketing strategy, the new products offered in this segment of market, continue to assume local development brand names to suit the domestic environment and targeting the larger segment of local customer base.

1.1.1 Competitive Advantage

The centrepiece of any strategy is encapsulated in an organization's winning proposition. If an organization cannot define its winning proposition in a simple and compelling way, it cannot claim to have a strategy. A winning proposition must clearly produce a competitive advantage for your organization. The fact is that competitive advantage is very tangible and can be evaluated and is the single most important gauge of organizational success. At its most fundamental, competitive advantage means achieving a bigger gap than your competitors between the value your customers see in your product and the costs you incur in providing that product (Lawler III, 2008). The more sustainable the competitive advantage, the more difficult it is for competitors to neutralize the advantage. Lawler III (2008) takes a look at the airline industry. Many of the big carriers fly the same type of aircraft to the same destinations in similar time slots with comparable safety records. With all this sameness, one may assume that there is no basis for creating competitive advantage. On the contrary airlines such as Virgin Atlantic and Singapore Airlines are able systematically to charge a price premium over their competition. We know they are creating greater value, because their customers are paying them more.

Porter (1980) identified two basic types of competitive advantage namely cost advantage and differentiation advantage. A competitive advantage exists when the firm is able to deliver the same benefits as competitors but at a lower cost (cost advantage), or deliver benefits that exceed those of competing 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 advantages are known as positional advantages since they describe the firm's position in the industry as a leader in either cost or differentiation. A resource based view emphasises that a firm utilises its resources and capabilities to create a competitive advantage that ultimately results in superior value creation. According to the resource based view, in order to develop a competitive advantage the firm must have resources and capabilities that are superior to those of its competitors. Competitive Advantage therefore entails innovation through technology and superior quality of service delivered to customers.

1.1.2 Firm Technology

Technology has now become the back bone of every business. As much as investment in technology enabled projects has been increasing not much of it is used for strategic thinking. It has emerged that technology is not just mere computer applications. Each organization is now aware of the effects, benefits and implication of technology in business and also its ability in creating sustainable and maintainable competitive advantages. In business, technology, specifically information technology is used through the value chains of activities which in turn enable the organization to optimize and control function of operations for easy decision making.

Strategic importance of Information Technology lays in its ability in developing the concept “value chain” in organization by creating interdependent generic value activities comprising of elements such as suppliers, customers, production, finance etc. Information Technology creates a linkage between these activities through a value chain. It transforms the value chain activities and also the product’s physical components and process either by lowering cost of value activities or by product’s differentiation. Information technology also transforms the pace of competition itself. Information Technology can also add value to firm by reducing cost or increasing revenue. Information technology’s ability in adding value to firm is different from its ability as being a source of sustainable competitiveness.

1.1.3 Technology and Competitive Advantage

Competitive advantage accrues to the firm that is best able to deliver the right product or service to the marketplace at the right price and time. The question that begs is how successful firms incorporate technology into their corporate and business strategies to achieve competitive advantage and also the organizational structure that supports and flows from the strategy. According to Heide and Chan (1992) any time a product or service creates more value (both symbolic and in its attributes) for the consumer than a competing product or service, it has a competitive advantage.

A second way to achieve competitive advantage is to use information technology as organizational support for a firm's products or services (whether technology-based or not). As in the case of firms producing IT products or services, a short development cycle also frequently applies to firms using IT as a supporting function to gain competitive

advantage (Vesey, 1991). The "strategic necessity" hypothesis (Clemons, 1988) was developed as a result of recent findings that most information systems' applications, regardless of the developer's original intent, have not proven to be sources of long lasting competitive advantage. This is only to be expected. A company earning supernormal profits attracts competitors, and unless the firm creates new competitive advantages it eventually loses its market edge. Furthermore, when information systems are integral to the product or service they become necessities for the long-term survival of every competitor. This means that the company which chooses not to use these systems is going to be at a disadvantage and would suffer eventual failure.

Firms choosing to use IT as a competitive advantage in this way are seeking to develop less costly products or services. That is, they are pursuing cost leadership strategies (Porter, 1980) and typically are concerned with market size and share, tight controls, process investment, ease of manufacture, width of product line, and are willing to accept potential early losses. The firm expects the IT investment to create a competitive advantage for the firm as it works to become a more efficient and effective organization.

Other firms recognize that the need to minimize the time required to design and produce a new product is creating new organizational challenges. These firms envision speed as a source of competitive advantage. For example, Benetton's electronic communication system which links its field agents to its headquarters allows the company to make changes in inventory in ten days that take most retailers' months. Similarly, Benetton's American counterpart, The Limited, boasts of the world's largest and most automated

distribution centre and instantaneous data linkages among the company's retail outlets, distribution centres, and far-flung factories (Peters, 1987).

It has been shown that firms that are able to get products to market first may reap one-third more profit over the product's life than a later arrival (Vesey, 1991). Firms using this strategy emphasize product innovation or differentiation (Porter, 1980), where niche markets, shortened lead times, and product life cycles that look like spikes are the rule rather than the exception. The strategic emphasis selected for a particular firm would depend upon its own strengths and position within the marketplace as well as management's view of its competitive environment. Furthermore, in order for an information system to work to a firm's advantage, a market-oriented company should focus on providing services that will enhance its relationship with its customers and suppliers.

A recent study reported that customer service applications account for 70% of the information systems in 51 firms (Huff, 1988). There are two instances in which a firm can achieve competitive advantage through IT using a customer focus approach; one is by providing customers with terminals to enter orders directly; and two, using information technology to target potential customers for other products.

1.1.4 Banking Industry in Kenya

The Banking industry in Kenya is governed by the Companies Act, the Banking Act, the Central Bank of Kenya Act and the various prudential guidelines issued by the Central Bank of Kenya (CBK). The banking sector was liberalised in 1995 and exchange controls lifted. The CBK, which falls under the Minister for Finance docket, is responsible for

formulating and implementing monetary policy and fostering the liquidity, solvency and proper functioning of the financial system. The main challenges facing the Banking sector today include: new regulations such as the Finance Act 2008, which took effect on 1 January 2009 requires banks and mortgage firms to build a minimum core capital of Kes. 1 billion by December 2012. This requirement, it is hoped, will help transform small banks into more stable organisations. The implementation of this requirement poses a challenge to some of the existing banks and they may be forced to merge in order to comply, global financial crisis experienced in late 2008 is expected to affect the banking industry in Kenya especially in regard to deposits mobilisation, reduction in trade volumes and the performance of assets and lastly declining interest margins as noted through the increase of the CBR rate.

1.1.5 Commercial Banks in Kenya

Commercial banks are institutions which accept deposits, make business loans, and offers related services. Commercial banks also allow for a variety of deposit accounts, such as checking, savings, and time deposit. These institutions are run to make a profit and owned by a group of individuals, while others may be government owned. While commercial banks offer services to individuals, they are primarily concerned with receiving deposits and lending to businesses. Kenya currently has 43 licensed commercial banks and one mortgage finance company. Of these 44 institutions, 31 are locally owned and 13 are foreign owned. The government of Kenya has a substantial stake in three of Kenya's commercial banks. The remaining local commercial banks are largely family owned. Commercial banks in Kenya accept deposits from individuals and turn a profit by using the deposits to offer loans to businesses with a high interest rate.

Banking can be traced back to the year 1694 with the establishment of the bank of England. The bank was started by a few individuals who were actually money lenders with an aim of lending money at interest. Banking in Kenya started in 1896 with the National Bank of India opening its first branch. Standard Chartered Bank opened its first branches in Mombasa and Nairobi in January 1911. The Kenya Commercial Bank was established in 1958 with Grindlays Bank of Britain merging with the National Bank of India. The Cooperative Bank of Kenya was established in 1965 for the express purpose of providing financial services to Co-operative societies. Three years later, National Bank of Kenya (NBK) was incorporated (Ojung'a 2005). There is about one Automated Teller Machine (ATM) for every 100,000 people in Kenya according to a paper presented at a South African university by Central Bank of Kenya (CBK) official.

1.2 Research Problem

Organizations of all sizes are using various information technology tools and applications in order to become more competitive. In many organizations, a percentage of total sales are usually devoted to the information technologies budget. It is believed that if information technologies are employed correctly, they should make organizations more efficient and effective. Information technology can help organizations reduce the cost of products and services and, if designed correctly, assist with differentiation and focus strategies. Information technologies can help bottom-line and top-line strategies. The focus of a bottom-line strategy is to improve efficiency by reducing overall costs. A top-line strategy focuses on generating new revenue streams by offering new products and services to customers or increasing revenues by selling existing products and services to new customers.

For differentiation strategies, organizations try to make their products and services different from their competitors as we shall note in the case of banks.

Commercial banks face many challenges in today's dynamic marketplace. In a global economy that has become increasingly competitive, there is need for efficient development of products that can quickly satisfy a more demanding customer base and build long-term customer trust. There is need for a superior risk management system that must also optimizes both internal and external innovation, while seeking operational excellence at all levels. Meeting these standards requires new business and marketing strategies, supported by technology, that boost revenues, improve operational efficiency, cut costs, and enhances the overall management of business. Today, banks are looking beyond traditional practices to new tactics and tools that analysts and thought leaders have identified as the best for the industry. The adoption of technology in banking is becoming a strong trend as service providers are now being urged by industry bodies to invest in technology to remain competitive. What makes the business environment even more challenging is that all banks have almost identical products and services hence the need for differentiation of the same. This can only be achieved by employment of technological solutions hence the necessity to look at technology in regard to competitive advantage.

A number of studies have been done on technology in the banking industry. These include relative importance of technology in service delivery in banking (Adrienne et al., 2003) which concluded that technology provides a different type of value and the benefits to be gained are largely efficiency based. Ouma and Munyoki (2010), sought to establish

the strategies used by commercial banks to gain competitive advantage. The study established the main strategies used by banks to deal with services breakdown. Muganda (2001) investigated business values of ecommerce amongst selected firms in Kenya. According to his summary, most of firms on average agree that e-commerce value result in organizational improvement, transformation and redefinition. Ojung'a (2005) investigated e-commerce services in commercial Banks in Kenya. His study gave various outputs and some of them included the extend to bank to bank e-commerce service utilization, extend to bank to customer electronic payment methods and extend of usage of electronic payment methods. However, no study has been found linking competitive advantage to technology. The research question therefore is, does technology impact competitive advantage?

1.3 Research Objective

The objective of the proposed study is to determine the effect of technology on competitive advantage on commercial banks in Kenya.

1.4 Value of the Study

The proposed study will be of value to the banking industry in general. Technology is critical in making the competitiveness of a firm sustainable and granted a pricey venture. Based on the anticipated findings of this study, it will be significant to the banking industry, especially to decision makers involved in implementation of electronic services delivery strategies for their banks. The results will act as a useful input into their planning and implementation. That is, managers will have a better insight as to what areas they stand to become more competitive as a result of investing in technology.

The proposed study will bring out the relationship between technology and competitive advantage. This is witnessed in that banks have almost identical products, therefore technology may be applied to form a basis of differentiation that is sustainable.

The proposed study is also expected to contribute to knowledge of both researchers and academicians in this technologically important area of competitive service delivery. In addition, the study will suggest directions for those who seek to explore and carry out further investigations. It will provide basis for further research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter cuts across pertinent literature of this topic. The topics covered in this chapter include the concepts of competition and competitive advantage, sources of competitive advantage as well as technology. The chapter reviews both conceptual and theoretical literature and recognises previous relevant research done. The literature provides an extensive account of the relationships between service quality, customer satisfaction, and financial performance and technology.

2.2 Industry Competition

An industry is a group/collection of firms offering products or services that are close substitutes for one another (Porter, 1980; Pearce and Robinson, 2005). Individual industries may differ from each other according to the degree of competition among various buyers and sellers in each market (Lipsey, 1987). According to Porter (2008), industry structure grows out of a set of economic and technical characteristics that determine the strength of competitive forces in an industry. Porter says that industry structure drives competition and profitability.

The degree of competitiveness of the market structure refers to the degree to which individual firms have power over that market- power to influence the price or other terms on which their product is sold. Factors that have been used to classify industries because they influence behaviours and therefore performance of firms include the number of sellers; the degree of product differentiation; presence or absence of entry, mobility, exit, and shrinkage barriers. Others are cost structure, degree of vertical integration, and

degree of globalization (Lipsey, 1987; Kotler, 1998; Porter, 1980; Pearce and Robinson, 2005). These market characteristics give rise to four known industry structure types namely, pure monopoly, oligopoly, monopolistic competition, and perfect competition

Porter (1980) developed the Five Force industry analysis Model, which has a theory that there are five forces that determine competition in an industry. These forces form the basic characteristics of competition in an industry. Hence the strongest competitive force determines the profitability of an industry and its importance in strategy formulation. By far, the Five Forces Model, which forms the basis of this study, is the most influential and widely used framework for evaluating industry attractiveness. Essentially, Porter (1980) postulates that there are five forces that typically shape the industry structure: intensity of rivalry among competitors, threat of new entrants, threat of substitutes, bargaining power of buyers, and bargaining power of suppliers. The five competitive forces reflect the fact the competition in an industry goes well beyond the established players. All the five forces jointly determine the intensity of industry competition and profitability, and the strongest force or forces are governing and become crucial from the point of view of strategy formulation. To establish the strategic agenda for dealing with these contending forces and to grow despite them, a company must understand how they work in the industry and how they affect the company in its particular situation (Pearce and Robinson, 1997).

Porter (1979) first presented a succinct and lucid view of the factors shaping competition. Porter views an industry as consisting of firms jockeying for preferred positions while being impact by the bargaining power of suppliers, the bargaining power of customers, the threat of new entrants, and the threat of substitute products or services. These forces,

affecting all competitors must be contented with strategically by the firm if it is to go grow and prosper. Porter suggests that companies need to address strategic action based on the factors identified in the model. These actions consist of diminishing customer or supplier power, lowering the threat of substitute products entering the market place, discouraging new entrants, or gaining competitive edge within the existing industry.

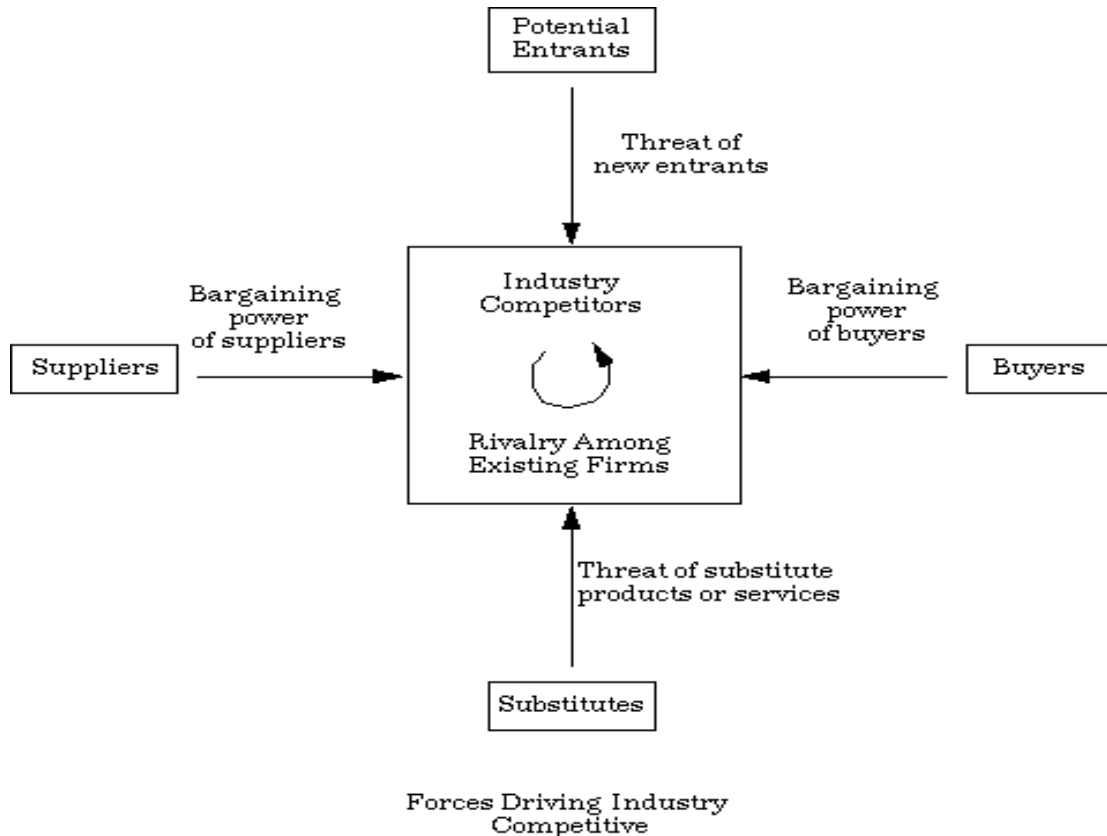


Figure1. Michael Porters competitive models

Source: Roger Clark, The Path of Development Strategic Information System Theory, p.18

2.3 Concept of Competitive Advantage

In recent years the concept of competitive advantage has taken center stage in discussions of business strategy. A competitive advantage exists when a firm has a product or service that is perceived by its target market customers as better than that of its competitors. Porter (1980) describes competitive advantage as being at the heart of a firm's performance in competitive markets and goes on to say that purpose of his book on the subject is to show how a firm can actually create and sustain a competitive advantage in an industry—how it can implement the broad generic strategies. Thus, competitive advantage means having low costs, differentiation advantage, or a successful focus strategy. In addition, Porter (1980) argues that 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.

The other two routes to competitive advantage relate to the value seen by customers who either see specific attractive elements in the offering (differentiation) or feel that all their needs are being met in the best way by that competitor's offering (focus) (Henderson, 2011). In addition, Miller (1988, 1987) distinguishes between two types of differentiation advantages: innovation differentiation and market differentiation. According to Li and Zhou (2010) firm can differentiate itself in various ways, such as offering innovative features, launching effective promotion, providing superior service, developing a strong brand name, and so on. Previous research appears to have reached a consensus that competitor orientation is most likely to lead to cost advantage (Han et al., 1998; Day and Wensley, 1988). Akdag and Zineldin (2011) found that price competitiveness is the least important factor for customers when they evaluate their business relationship with banks.

Njoya and Niemeier (2011) suggest that low cost strategy offers a temporary competitive advantage which has so far not often been exploited. Furthermore, Henderson (2011) states that a cost leadership strategy is unlikely to work in offering competitive advantage. Lion's share marketing group website indicates that community banks are not usually able to achieve cost advantage, especially in head-to-head competition with larger, high-volume institutions. In addition, firms cannot pursue all of the competitive bases because of scarcity of resources (Prajogo and McDermott, 2011; Wheelwright, 1984). It would be unusual to find an organization that competes on all three dimensions but most would hope to have competitive advantage from one or the other dimensions (Henderson, 2011; Porter, 1985). Chowdhury (2011) describes competitive advantage as the result of differentiation.

2.4 Sources of Competitive Advantage

Most entrepreneurs and business owners know that one of the keys to surviving in business is to have a competitive advantage. Every business must have a competitive advantage; if a business does not, then its days are numbered. For instance, a company that demonstrates the capacity to process data speedily will have a competitive advantage over other firms with lower processing capacity. Technology is one leading 'driving force' nowadays, in different businesses. This source of competitive advantage usually plays itself out in the banking industry, telecommunication industry and the service industry in general. The proliferation of, and rapid advances in technology-based systems, especially those related to the internet, are leading to fundamental changes in how companies interact with customers (Parasuraman and Colby, 2001; Bauer et al.,

2005). In the mentioned industries, service providers are increasingly urged to invest in technology to better secure their future in the electronic age (Zhang and Prybutok, 2005; Bauer et al., 2005).

In the banking sector, Straight-Thru Processing (STP) is a concept and process encapsulating technology that relies on a number of core technologies. STP automates the assessment of risk for low to medium involvement products, ranging from credit card applications, personal loans, to refinancing of mortgages and lines of credit, and the establishment of overdraft facilities. STP will enable the bank to give instant approval, streamline the fulfillment process and reduce paper handling to an absolute minimum. Further, the challenging business environment in the financial service market has also resulted in more pressure on banks to develop and utilise alternative delivery channels, with a view to attracting more customers, improving customers' perceptions, and encouraging loyalty (Bauer et al., 2005). Among the more recent delivery channels introduced is electronic banking. In its simplest form, electronic banking means the provision of information about the bank and its products via a page on the internet.

“A customer is the most important visitor on our premises; he is not dependent on us. We are dependent on him. He is not an interruption in our work. He is the purpose of it. He is not an outsider in our business. He is part of it. We are not doing him a favour by serving him. He is doing us a favour by giving us an opportunity to do so.” These are the words of Mahatma Gandhi as quoted by Lockyer (2011). Today's winners are those who overcome consumer cynicism by exceeding expectation and going beyond the point of encounter. These firms are successful because they have invested for the long term

through recognizing that service fulfilment not only promotes growth of their customer base but retains customer loyalty. Lockyer (2011) continues to say that providing excellence in customer service is a common differentiation strategy, but is also a means of building a competitive advantage that is achievable for even the smallest companies. Today's internet-savvy consumer has already done price comparisons and read about your company before they even consider purchasing your product or service. These customers are more empowered than ever and have high expectations.

A satisfied customer is a loyal customer. If the customers are happy with the service they receive, they will keep coming back and it is no secret that it is much cheaper and easier to keep a customer than it is to get a new one. The lifetime value (LTV) of a customer is the dollar value associated with a customer relationship over a period of time, hence the need to have a customer retention program in place. Lockyer (2011) goes further to tell us that if you do not look after your customers, your competitors will. Today, the marketplace is more competitive than ever, resulting in customers having more choices. If they are not happy with how your company treats them, they have no qualms about going to your competitor – they may even tell you they are leaving and the reason why. There is lot of truth in the adage “the only thing that travels faster than good news is bad news”. Lockyer (2011) cautions that word of mouth can kill a business, as customers are very willing to share their bad experiences. Businesses also have to contend with “word of mouth”, the negative experiences shared on the Internet and social networking media. This can take the form of feedback on your website, twitter; face book or YouTube, platforms that are available to millions in terms of audience.

Hamel (2000) notes, an innovation competency may be the new competitive advantage in the new millennium. An innovation competency could help organizations better manage the risks as well as reap the benefits of innovation. Innovation may be simply be defined as exploiting new ideas leading to the creation of a new product, process or service. It is not just the invention of a new idea that is important, but it is actually “bringing it to market”, putting into practice and exploiting it in a manner that leads to new products, services or systems that add value or improve quality. Organizations can no longer remain successful by merely adapting to external change and/or innovating in terms of products or services. Innovation also means exploiting new technology and employing out-of-the-box thinking to generate new value and to bring about significant changes in society. There are three types of innovation, namely, process, product or service, and strategy. Each of these can vary in the degree of newness - incremental to radical, and impact - sustaining versus discontinuous.

Incremental product/service innovation is oriented toward improving the features and functionality of existing products and services. Radical product/service innovation is oriented toward creating wholly new products and/or services. Product life cycles, in particular, have become shorter and shorter, causing business survival to depend on new product development and, increasingly, on the speed of innovation in order to develop and bring new products to market faster than the competition (Jonash and Sommerlatte 1999). Although product/service innovation and process innovation is not the same thing, they are often interconnected. For example, process innovation may be required to support product or service innovations. Also, it has been argued that organizational processes and structures oriented to incremental product innovation are not the same as

those needed to foster and facilitate new product development. It is therefore necessary to separate these activities and to introduce wholly new process innovations that will help promote and speed-up radical product innovation. It is possible to incrementally improve one's business strategy, but Hamel (1996, 2000) contends that radical business concept innovation is now paramount. He claims that the current environment is hostile to industry incumbents and hospitable to industry revolutionaries. The fortifications that protected the industrial oligarchy have crumbled under the weight of deregulation, technological upheaval, globalization, and social change. What is now required to ensure organizational success is to continually revolutionize the basic organizational strategy, which progressively typically requires; radically re-conceiving products and services, not just developing new products and services, redefining market space and redrawing industry boundaries.

2.5 Technology and Competitive Advantage

Organization will put forward number of reasons as to why they have interest in information technology. The most common includes the need to sustain and improve competitive position, to increase revenue or reduce costs or to improve flexibility and responsiveness. While there are important, many organizations are driven simply by the need to survive in a highly competitive market place. Thus while it could be argued that Bank installed Automated Teller Machine (ATM) to increase customer service, the reality is that once one Bank had installed Automated Teller Machines competitors were left with little choice but to match that investment as the price that has to be paid to stay in the market. While it may be difficult to qualify the benefits of investing in information technology the downside of taking no action is often starkly. Information is now treated

as a corporate resources and competitive weapon and the focus now is on exploiting information technology for competitive advantage.

Recently, however, technology has had a remarkable influence on the growth of service delivery options (Dabholkar and Bagozzi, 2002). Dabholkar (1994) claims that when the customer is in direct contact with the technology there is greater control such as with Internet banking. When a consumer freely chooses to use technology as a form of service delivery the impact is high in terms of quality attributes. Some of the quality factors that are highly important to consumers are efficiency and speed. This concept is supported by Weatherall et al. (1984), who stated that consumers are thought to have a positive perception of technology based service attributes since they believe technology will deliver a faster and more efficient service than that of the employee. Gummesson (1991) also stresses that reliability and user-friendliness are important factors in the evaluation of technology-based services.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the research methodology. Topics covered in this chapter include research design, the target population of this study, employed methods of data collection and data analysis.

3.2 Research Design

The researcher adopted in this study is a cross-sectional survey. Mugenda and Mugenda (2003) described cross-sectional survey as collecting data in order to test hypothesis or to answer questions concerning the current status of the subject of study.

The study settled for the cross-sectional survey as the most appropriate research design because surveys are relatively inexpensive (especially self-administered surveys) and are useful in describing the characteristics of a large population. Also, a survey had high reliability and is easy to obtain - by presenting all subjects with a standardized stimulus, observer subjectivity is greatly eliminated. There was flexibility at the creation phase in deciding how the questions would be administered: as face-to-face interviews, by telephone, as group administered written or oral survey, or by electronic means.

Standardized questions made measurement more precise by enforcing uniform definitions upon the participants as well as ensuring that similar data was collected from groups then interpreted comparatively (between-group study).

3.3 Population of Study

The population for this study were commercial banks in Kenya. According to a Banking journal from The Central Bank of Kenya, banking sector comprised of 50 institutions, 43 of which are commercial banks, 1 mortgage finance companies and 6 licensed deposit taking microfinance institution as at 31st December 2011. Out of the 43 institutions, 33 are locally owned and 10 are foreign owned. The locally owned financial institutions comprise 3 banks with public shareholding, 29 privately owned commercial banks and 1 mortgage finance companies (CBK, 2011).

The overall ranking of banks classifies banks in Kenya into three categories Tier I, Tier II and Tier III (Ochieng, 2010). Tier I comprises of banks with a balance sheet of more than Ksh 40 billion. There are 12 banks under the Tier I category. Tier II are banks whose total assets are less than Ksh 40 billion but more than Ksh 10 billion. Tier III comprises of banks with less than 10 billion in total assets. The study focuses on all the three tiers. The researcher randomly selected half of all the banks in each of the three tiers namely, 6 tier I banks, 5 tier II banks and 11 tier III banks.

3.4 Data Collection

The study utilised both primary and secondary data. Sources of secondary data include previous research, CBK journals, newsletters, internal circulars and bank websites.

Primary data was obtained vide a structured questionnaire (appendix 2). The questionnaire was distributed among the banks Head of Operations and IT, IT Managers, Customer Service Managers or Marketing Managers based at head office. The study settled on the mentioned as respondents as these are deemed to play a major role in

influencing choice of technology to invest in Banks. Their view regarding what competitive advantage technology presents in commercial banks in Kenya was also sought after by this study. The questionnaires were self administered by the researcher so as to clarify any issues that may not have been clear to the respondents. The questionnaire was also disseminated by way of email and hand delivery. Where possible, telephone interviews were conducted. Once the questionnaire had been designed, it was pre-tested on a respondent who is not part of the sample. This helped in determining the strengths and weaknesses of the questionnaire concerning question format, wording and order.

3.5 Data Analysis

The process of data analysis involved data clean up and explanation. Data was coded and checked for any errors and omissions (Kothari, 2007). Frequency tables, percentages and means were used to present the findings. Responses in the questionnaires were analyzed by use of frequency, percentage, means and correlation analysis and processed by use of a computer Statistical Package for Social Science (SPSS) version 17.0 programme to analyze the data.

The study used correlation analysis as a data analysis technique. It aimed to show whether and how strongly the variables in this study i.e. technology and competitive advantage, are related. The responses from the structured questionnaire were listed to obtain proportions appropriately; the responses were then reported by descriptive narrative. Descriptive statistics such as frequencies and percentages will be used.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents and interprets the findings of the study conducted to identify the effects of technology on competitive advantage in commercial banks in Kenya. The topics covered in this chapter include demographic information of banks, technology and competitive advantage and discussions of findings.

The analysed statistics are presented in tables, bar graphs, pie charts and tables. Sixty (60) questionnaires out of seventy eight (78) of the administered received adequate responses across all cluster of banks. Upon submission and analysis of the completed questionnaires; the response ratio was derived at 76.9%. According to Mugenda and Mugenda (2003), a 50% response rate is adequate for analysis, reporting and valid interpretation of data under presentation. This response rate can be considered to be well above average.

4.2 Demographic Information of Banks

This section analyses findings in relation duration of operation of the banks in this study in Kenya, the banks ownership structure and establishment of presence of IT departments. The responses are analysed in tabular form and results detailed overleaf.

4.2.1 Duration of Operation of Bank in Kenya

Table 1

Duration of operation of bank in Kenya

Duration	Frequency	Percentage
Less than 10 years	8	13.0
11-20 years	7	12.0
21-30 years	24	40.0
31-40 years	12	20.0
41-50 years	4	7.0
Over 50 years	5	8.0
Total	60	100.0

The figure outlines that many of the banks under study have been in operation for a period of 21-30 years (40%). Statistically, this is followed by banks in operation for a period of between 31-40 years. Furthermore, 13% and 12% covers banks that have been in operation for less than 10 years and 11-20 years respectively. On the other hand, 7% covers banks that have been in operation between 41-50 years whereas 8% represents banks that have operated over 50 years.

4.2.2 Bank Ownership Structure

Table 2

Bank Ownership Structure

Ownership	Frequency	Percentage
Local	42	70.0
Foreign owned	7	12.0
Both local and foreign owned	11	18.0
Total	60	100.0

The above figure outlines that 70% of banks are locally owned. 12% are foreign owned and 18% are owned by both locals and foreign investors.

Presence of IT Department

Table 3

Presence of IT Departments across Banks

Presence of an IT Department	Frequency	Percentage
Yes	60	100.0
No	0	0.0
Total	60	100.0

The above figure reveals that all respondents admitted to having an IT Department in their banks hence outlining that the banking sector has embraced IT best practices.

4.3 Technology and Competitive Advantage

This section analyses findings in relation technology and competitive advantage. Topics analysed are extent of investment in technology, areas of technology investment and extent of competitive advantage.

4.3.1 Extent of Investment in Technology

Respondents were asked to give their views on a five point scale of 1 to 5; where 1 = Not at All, 2 = Little Extent, 3 = Moderate Extent, 4 = Great Extent and 5 = Very Great Extent. Their responses were analysed in tabular form and results detailed in the table below.

From the analysis, it can be concluded that commercial banks have a large budgetary allocation for investment in ATMs followed closely by investment in Mobile Banking systems. Banks also set aside a substantial proportion of their budget for investment in IT. On the other hand, investment in Internet Banking and Tele-banking rank the lowest.

Table 4

Extent of Investment in Technology

Extent of Investment in Technology	Mean	Standard Deviation
ATMs	4.67	0.48
Mobile Banking	4.05	0.83
Cost of IT Investment	3.70	0.66
Expenditure on Development of IT	3.63	0.76
Training Cost to Improve IT Skill	3.50	0.81
Money Transfer Systems	3.50	0.81
Internet Banking-Direct Account Access	2.58	0.93
Tele-Banking	1.88	0.85
Grand Mean	3.00	

4.3.2 Areas of Technology Investment

Respondents were asked to give their views on a five point scale of 1 to 5; where 1 = Not at All, 2 = Little Extent, 3 = Moderate Extent, 4 = Great Extent and 5 = Very Great Extent. Their responses were analysed in tabular form and results detailed in the table below.

From the analysis, it can be concluded that commercial banks automated transaction and cheque imaging transmission followed by settlement of payments on a gross basis in real

time. On the other hand, investment in the sales force automation and call centres rank the lowest. The respondents felt that commercial banks are still conservative in automating are that touch on account opening, loan processing and approval and credit card services. These three area share similarity in amount of confidentiality and security required.

Table 5

Areas of Technology Investment

Areas of Technology Investment	Mean	Standard Deviation
Transaction and Cheque Imaging Transmission	4.80	0.40
Settlements of payment on a gross basis in real time	4.55	0.75
Account opening process	3.20	0.40
Loan approval process	2.70	0.46
Credit Card Services	1.77	1.28
Sales Force Automation	1.55	0.96
Call Centre	1.45	1.08
Grand Mean	2.86	

4.3.3 Extent of Competitive Advantage

Respondents were asked to give their views on a five point scale of 1 to 5; where 1 = Not at All, 2 = Little Extent, 3 = Moderate Extent, 4 = Great Extent and 5 = Very Great

Extent. Their responses were analysed in tabular form and results detailed in the Table 6 below.

From the analysis, it can be concluded that as a result of a larger investment in IT some commercial banks gained more competitive advantage. It is also noted that investment in IT implies expanded geographical reach for commercial banks especially through internet banking, mobile banking and spread out ATMs. On the downside, competitive advantage was not achieved by most commercial banks in provision of personalised service and high quality customer service. It was noted that there is only so much technology can achieve as the respondents felt that these can best be achieved through human contact.

Table 6

Extent of Competitive Advantage

Extent of Competitive Advantage	Mean	Standard Deviation
Increased turnover and profitability	4.58	0.70
Expanded geographical reach	4.30	0.46
Increased visibility of your bank through search engine marketing	4.20	0.40
Provided 24/7/365 availability of your services	4.15	0.73
Quickened transaction processing	4.10	0.30
Enabled you to collect customer data	4.05	0.39
Reduced your operating overheads	2.90	0.54
Reduced marketing and advertising costs	2.30	0.85
Personalized Service	2.05	0.87
High quality customer service	2.00	0.78
Grand Mean	3.46	

4.4 Discussions of Findings

The study first sought to establish the demographic information of commercial banks in Kenya. It was established that 70% of commercial banks are locally owned. This confirms remarkable growth in banking sector, a confirmation that the environment is conducive for promoting start up of local banks. Regulation of the industry is therefore important to ensure that as much as there is growth in the banking sector, banks have a

solid foundation. Results of this study also show that 40% of commercial banks have been in operation for between 21 – 30 years. This study's literature states that first local bank opened its doors in 1964. Given the banks period of operation, we can confirm that indeed the environment has supported proliferation of local banks. However, it is also noted that 13% of commercial banks have been in operation for less than 10 years. This decline in increase of number of banks may be attributed to a new requirement by the bank's regulator, CBK, that all commercial banks have a paid up core capital of Kes. 1.0 billion by December 2012. The responses, confirmed that all commercial banks under this study have IT department, an indication that banks have taken cognisance of IT as a tool for competitive advantage hence a need to invest in it.

The study also sought to verify the areas that commercial banks have invested in the most in terms of budgetary allocation. The data reveals that commercial banks spend more in acquisition of ATMs and Mobile Banking systems. This study's literature indicated that there is one ATM among 100,000 people in Kenya in a study carried out by CBK mentioned in a research by Magutu et al (2011). This position may have changed given the responses in this study. Investment in ATMs is largely driven by banks emulating each other because once a competitor bank installs an ATM, others have no choice but to follow suit. Investment in Mobile Banking is also on the increase. This may be an effort by commercial banks to reach the unbanked and also an effort to provide banking services 24/7. The results also established that investment in Internet Banking and Tele-banking systems. Internet Banking and Tele-banking form part of self service delivery

channels in banking which Bauer et al. (2005) recommended that service providers must invest in.

The study also establishes that commercial banks have automated transaction and cheque image transmission and settlement of payments on a gross basis in real time. This may be as a result of the two being regulatory requirements by CBK as part of gearing toward a seamless National Payments System. Commercial banks in this case have no choice but to tow the line.

Lastly, the study established that as a result of investment in technology undertaken by commercial banks in Kenya this far, banks had so far witnessed increased turnover and profitability largely attributed to; investment in ATMs and Mobile banking – which provides a platform for 24/7-365 availability and electronic cheque imaging and real time payments which boost speed and efficiency. Commercial banks have also gained expanded geographical reach through partnership with pay partners such as PesaPoint, Mpesa and even supermarkets through their Point of Sale machines.

Personalised service and high quality customer service seemed to have been negatively impacted by use of technology according to this study. According to Bauer (2005), technology attracts new customers and improves customer perception. The question begs on whether technology actually does improve service. Technology also influences growth of service delivery options according to Dabholkar and Bagozzi (2002). But the question begs on whether this service can be personalised. Given that investment in technology is a must-do the Gummesson (1991) asserts that reliability and user-friendliness are key in evaluating technology based services.

CHAPTER FIVE: SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the findings of this study. The topics covered in this chapter include summary of findings, conclusions of the study, recommendations for policy and practice, limitations of the study and suggestions for further research.

5.2 Summary of Findings

The objective of the study was to determine the relationship between technology and competitive advantage in commercial banks in Kenya. The study reveals that indeed technology influences competitive advantage. Much as the return on investment is not immediate lack of investment in technology will ultimately lead a bank to lose customers to competitors who have invested in technology rendering their services faster, more reliable, give them 24/7 availability and greater efficiency.

The study establishes that commercial banks have placed invested in technology in traditional practices such as use of ATMs, while embracing Mobile Banking mainly as a result of reacting to competition from mobile service providers. Commercial banks have also automated cheque imaging and real time payments as a result of this being a requirement by the sector's regulator. Commercial banks have gained competitive advantage mainly through increased turnover and profitability and expanded geographical reach. Concerted effort to invest in technology for more personalised service and high quality customer service is yet to be exploited.

5.3 Conclusion of the Study

Today's businesses are information based. The major driving force is IT which increases the usage of information in and around organisations. It also leads to a greater shrinkage of time and distance effects and greater inter relatedness within an industry and organization. Business finds new ways to exploit information technology to be effective. In this endeavour they, in addition to the conventional methods, computer-aided designs and sophisticated computing technologies, to gain competitive advantage.

Banking is one of the industries, which involve both high information content of the product and high information intensity of process. The nature of the industry implies that it is highly competitive. Therefore, in order to cope up with the rising competition Banks can reflect on the use of IT as a competitive tool. Hence, this study concludes that Kenyan commercial banks must use IT to gain competitive advantage.

5.4 Recommendations for Policy and Practice

The study revealed the following recommendations in regards to Technology and Competitive Advantage in Kenyan Commercial Banks. Banking technology has helped to increase revenues through web presence of banking information, through e-commerce and also y through sales force automation. Charges levied to customers upon use of e-commerce applications such as Mobile and Internet Banking not only increase revenue streams for banks, but also serve as a channel for availability of the bank 24/7 as well as a marketing platform for the banks services. Websites are a part of automation that assists in attracting and retaining customers.

Networking of bank branches speeds up banking operations during bank transactions. Customer information is readily available across the bank's branch network hence making relationship management easier. This informs the need to invest more in technology so as to have a holistic view of the customer through the customer relationship management online portal. Investment in technology also increases geographical the foot print of the bank not only in the country but globally. This would be a cheaper venture in terms of operational cost of setting up and running a bank's branch through physical presence in a foreign country. Use of technology to deliver personalized service should also be the forefront of the banks' strategy.

5.5 Limitations of the Study

The time available for the study was short. This constrained the scope as well as the depth of the research. More time would have helped in research further on actual use of technology in banks. Some respondents were biased since they feared disclosing the weaknesses of their banks.

Difficulties were experienced in getting feedback from some the targeted respondents because of their busy schedule as well as continuous prompting for those who had been emailed the questionnaire.

5.6 Suggestions for Further Research

No research is ever an end in itself. The contribution of this research is limited and thus the need for further research. From the insight gained in the course of the study there may be need to conduct further research by a replication of this study after some time. This comparative study will aid in analysing more the competitive gains as a result of

investment in technology, because these gains are usually not instant but are established over time.

Further research may also be conducted on use of technology as a cost reduction strategy in commercial banks in Kenya. This study revealed that investing in technology is by no means a cheap venture and more so the fact that technology is dynamic, that is, what worked yesterday is rendered irrelevant tomorrow. Research on how technology can be best employed so as to bring down other costs in banks is critical. This is largely because this cost of investment in technology is usually passed on to the customer through fees and commissions.

Further research may also be conducted on how technology may be employed to deliver high quality customer service especially in self delivery channels as a result of automation. Service is key in the banking sector. Given that investment in technology is a costly venture, studies on how best to use technology to personalise service can be employed as opposed to entirely relying on human capital which is also a costly venture.

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APPENDICES

Appendix 1: Note to respondents

Dear Respondent,

RE: DATA COLLECTION

I am an MBA student from the University of Nairobi, School of Business.

In partial fulfillment of the requirements of the degree of Master of Business Administration, I am carrying out a research on Technology and Competitive Advantage of Commercial Banks in Kenya.

You have been selected to provide your input into this study. I kindly request your assistance in completing this questionnaire.

Your response will be treated with utmost confidentiality and will be used only for research purposes of this study. In no way will your name or the name of your bank appear in the final report.

Should you require any further information, do not hesitate to contact me via telephone on 0722-393468 or by email on smugusia@gmail.com.

Thank you in advance for your co-operation.

Yours faithfully,

Sheila Mugusia

Appendix 2: Questionnaire

Instructions: Kindly complete the following questionnaire using the instructions provided for each set of question. Tick appropriately.

Confidentiality: The responses you provide will be kept strictly confidential. No reference will be made to any individual(s) or institution in the report of the study.

PART A: BACKGROUND INFORMATION

A1: Respondents Profile

1. What is your gender?

Male Female

2. In which of the following age brackets do you belong?

Below 20 years 21 - 30 years 31 - 40 years

41 - 50 years above 50 years

3. What is your education level (state the highest level?)

Certificate Diploma

Undergraduate Post Graduate

Other _____

4. How many years have you worked with the bank?

Less than 1 year 1 - 3 years 4 - 7 years

8 - 11 years Over 11 years

5. What is your career orientation?

Accounts Marketing Operations

IT Professional other, (specify) _____

A2: Bank Profile

6. How long has the bank been in operation in Kenya?

Less than 10 years 11 - 20 years 21 - 30 years

31 – 40 years 41 - 50 years Over 50 years

7. What is the ownership of the bank?

Locally Owned Foreign Owned Both Local/Foreign Owned

8. Number of employees?

Less than 100 100 – 500 501 - 1000

1001 – 1500 1501 - 2000 More than 2000.

9. Is there an IT Department in your bank?

Yes No

PART B: EXTENT OF INVESTMENT IN TECHNOLOGY IN YOUR BANK

10.To what extent has your bank invested in technology in each of the following aspects? 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. Rate by ticking the appropriate column.

EXTENT OF INVESTMENT IN TECHNOLOGY IN BANKS	1	2	3	4	5
Cost of IT (investment)					
Expenditure on development of IT					
Training cost to improve IT skill					
ATMs					
Money transfer systems					
Mobile Banking					
Tele-banking					
Internet banking- direct access to your account					

PART C: EXTENT OF APPLICATION OF TECHNOLOGY IN YOUR BANK

11.To what extent has your bank applied technology in each of the following aspects? 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. Rate by ticking the appropriate column.

AREAS THAT ARE AUTOMATED	1	2	3	4	5
Credit card services					
Truncation and cheque imaging transmission					
Settlement of payment on a gross basis in real time					
Account opening process					
Loan approval process					
Call Centre					
Sales Force Automation					

PART D: EXTENT OF COMPETITIVE ADVANTAGE IN YOUR BANK

12.To what extent has your bank gained competitive advantage in each of the following aspects? 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. Rate by ticking the appropriate column.

	1	2	3	4	5
Expanded geographical reach					
Increased visibility of your bank through search engine marketing					
Increased your turnover and Profitability					
Provided 24/7/365 availability of your services					
Reduced marketing and advertising costs					
Enabled you to collect customer data					
Reduced your operating overheads					
Quickened transaction processing					
Personalized service					
High Quality customer service					

16. Please give any other comment that you may deem useful for this exercise?

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Thank you for your time and cooperation

Appendix 3: List of Commercial Banks in Kenya

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank
6. CFC Stanbic Bank
7. Chase Bank (Kenya)
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. Dubai Bank Kenya
16. Ecobank

17. Equatorial Commercial Bank
18. Equity Bank
19. Family Bank
20. Fidelity Commercial Bank Limited
21. Fina Bank
22. First Community Bank
23. Giro Commercial Bank
24. Guardian Bank
25. Gulf African Bank
26. Habib Bank
27. Habib Bank AG Zurich
28. I&M Bank
29. Imperial Bank Kenya
30. Jamii Bora Bank
31. Kenya Commercial Bank
32. K-Rep Bank
33. Middle East Bank Kenya

34. National Bank of Kenya
35. NIC Bank
36. Oriental Commercial Bank
37. Paramount Universal Bank
38. Prime Bank (Kenya)
39. Standard Chartered Kenya
40. Trans National Bank Kenya
41. United Bank for Africa
42. Victoria Commercial Bank
43. Housing Finance

Source: <http://www.centralbank.go.ke/financialsystem/banks/Register.aspx> 14th October

2011