

**E-BUSINESS AND OPERATING EFFICIENCY OF
COMMERCIAL BANKS IN KENYA**

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**A Management Research Project Submitted in Partial Fulfillment of the
Requirements of the Degree of Masters of Business Administration (MBA), School
of Business, University of Nairobi**

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DECLARATION

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

SIGNED.....DATE.....

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D61/63056/2011

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

SIGNED.....DATE.....

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DEDICATION

To my loving parents; Mr. and Mrs. Mutwika, my sisters; Adelaide, Redempta, Geraldine and Mary

ACKNOWLEDGEMENT

I would like to acknowledge the Almighty God for the gift of life and intellectual ability to carry out this research. I also acknowledge my mother and father for the good foundation they lay for me. To my family: Adelaide, Redempta, Geraldine and Mary for their Love and immeasurable support throughout the course of my study. To all my friends and classmates at the university: Thanks for the encouragement and teamwork. To my supervisor Mr. Onserio Nyamwange, who reviewed and commented critically on the report and progress. Without your consideration, input, and encouragement, this study could not have been completed.

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ABSTRACT

This research sought to determine the impact of e-business on operating efficiency of commercial banks in Kenya and the challenges faced while implementing e-business. Data was collected using questionnaires and analyzed using descriptive statistics. From the analysis, it was found that there are several positive impacts of e-business on the operating efficiency of commercial banks. For instance, there has been significant improvement in quality of service offered to customers and improved staff productivity. There also exist several challenges that hinder the implementation of e-business in commercial banks. These challenges include lack of infrastructure, threat from computer viruses and poor commitment from senior management among others. The commercial banks have thus come up with strategic responses to counter these challenges. Some of the popular responses being used by banks include lowering electronic banking charges and employing well trained staff on e-business applications in banking. The study concludes that commercial banks in Kenya need to invest more in e-business so as to enhance efficiency in their operations.

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LIST OF ACRONYMS

ATM	-Automated Teller Machine
CBK	-Central Bank of Kenya
EFT	-Electronic Funds Transfer
JIT	-Just In Time
NTFECOM	-The National Task Force on Electronic Commerce
PIN	-Personal Identification Number
POS	-Point of Sale
RTGS	-Real Time Gross Settlement
SWIFT	-Society for Worldwide Interbank Financial Telecommunication
TQM	-Total Quality Management

CHAPTER ONE: INTRODUCTION

1.1 Background

E-business can be described as the sharing of information concerning business and maintaining of business relationships as well as carrying out business transactions through telecommunications. According to Kamel (2006), e-business includes all the strategies and methodologies as well as practices that firms employ to utilize information technology with the goal of improving their business practices. E-business can be credited as one of the most vital facets of the Internet that have come up recently. It has significantly altered both business and commerce globally and also resulted to the emergence of an economy based on revolutionized information and thus has become a major business concern across the globe.

E-business basically entails exchanges amongst customers and merchants, as well as business partners. E-business has enabled faster transactions compared to the traditional mode of trading which requires physical meeting and thus a lot of time is wasted (Chaffey, 2009). The Kenyan government set the foundation of e-business by forming The National Task Force on Electronic Commerce (NTFECOM) and enhancing the performance of the telecommunications sector. In addition, the Kenyan government showcased its e-government model during the second phase of the UN Summit on information societies which was held in Tunisia. This model was aimed at adopting and developing more on e-business in Kenya (Muthara, 2007).

The banking industry has been characterized by numerous changes in its business processes since the emergence of e-business. E-business related advances such as online banking have somehow reduced the validity of physical bank branches and changed demands from customers regarding products as well as services from the banks. The strategic utilization of e-business in the banking sector has been a major driver towards the efficiency of commercial banks. Leading banks have strategically employed a wide range of e-business applications which has resulted to better customer satisfaction. Less

efficient banks have not fully focused on the utilization of the e-business applications (Qin, 2010). E-business has greatly enabled accessibility of services that could not be accessed without automation. For instance, customers are able to transact at night using automated teller machines and thus efficiency has been enhanced in service delivery through the adaptation of e-business in the banking industry.

1.1.1 E-business in Banking

E-business is applied through the use of an e-business application known as e-banking in the banking context. This application allows customers to transact through any of the virtual banking services in a manner which is protected and secured. The e-banking function constitutes of banking and insurance, as well as finance and securities. Several services are offered under e-banking. These include; transfer of funds, payment of utility bills, account balance enquiries, application as well as claiming of insurance, credit card services, transacting through automated teller machines, cheques truncation payment system, mobile banking, smart card services, debit cards and Electronic Funds Transfer (EFT) system(Magutu et al., 2011).

Big companies have been steering e-business for decades through networking their systems with those of business partners as well as clients despite the fact that e-business is fairly new. The development of wire transfers marked the emergence of electronic payment technology. Early wire transfer services enabled a person to deliver currency to a clerk at a given location, who in turn gave instructions to a clerk at another location to disburse funds to a party at the second location who was able to identify himself as the intended recipient (Qin, 2010). A good example of this early wire transfer service is The Western Union. In this setting there was no banking environment; western union was a telegraph company. Assurance of payment depended on the financial stability of the company. Security was provided to the extent that Western Union was a privately controlled transmission facility and used to send messages about funds transfer. Authentication was provided only by a signature at the other end of transmission that evidenced the payment of funds to the intended party (Qin, 2010).

Private networking technology enabled the development of alternative electronic transactions during the 1960's and 1970's. EFT systems have shortened time of payment instruction transfer between banks. However, EFT systems have not changed the fundamental structure of payment system. Many of the so called payment innovations over the past two decades have been aimed at minimizing banking costs such as reserves, speeding up cash and clearing of cheques, as well as minimizing fraud (Joseph, 2006).

Innovations in payment systems involved creation of new financial instruments that relied on backing from the governments, central banks, or by legal tender. The content of EFT system is usually some form of digital financial instrument that comprise of credit cards, debit cards, and smart cards among others (Joseph, 2006).

Various benefits have been achieved through the adaptation of e-business in banking. Firstly, e-business saves time by allowing fast transactions which can conveniently be done from office, home or any other place. Secondly, online banking can be done at any given time of the day since one does not have to visit the banking hall. In addition, convenience can be termed as the greatest advantage of online banking. This is due to the fact that almost all utility bills can be settled via online banking with no need of presenting oneself at bill collection outlets of the companies and thus delayed payments of bills are avoided. Fourthly, online banking has led to significant reduction of paper work and thus it is an eco-friendly process. Lastly, online banking has enabled other services such as online shopping, making of advanced bookings, amongst other services (Mohapatra, 2012).

1.1.2 Efficiency in Banking

Financial institutions and particularly commercial banks have also been in the forefront in adaptation of e-business. Efficient and effective use of resources is the fundamental objective of each and every banker. With the ever growing need for banks to diversify, differentiation has become vital and internet banking services have helped many commercial banks reduce their expenses, improve customer relationships and also increase efficiency.

There has been increasing competition from nonbank institutions resulting to increased pressure on commercial banks to increase their earnings while at the same time trying to minimize operating costs (Acharya & Kagan, 2004). In order to counter this pressure, enhancing efficiency is clearly a critical factor. Technological innovation in form of e-business has contributed greatly towards efficiency in commercial banks. This has in turn led to increased productivity and has also led to delivery of several banking services through electronic means. E-business has enhanced efficiency in banking through lowering of transaction costs by ensuring reduction of third parties involved in various transactions. Transaction time has also been greatly reduced through adaptation of e-business in banking (Kaptan, 2003).

In spite of the fact that commercial banks stand to gain much from e-business involvement, some significant challenges are being faced. Firstly, some of the banks may be unable to adapt successfully to the changes in business environment that will emerge as a result of adopting e-business. This can be termed as strategic risk. Secondly, operational risks may also arise from malfunctioning of computers and network technology and thus service delivery to customers will be affected negatively. (Wenninger, 2000).

1.1.3 Commercial Banking in Kenya

Commercial banks are very vital in the economy of any given country. This is due to the nature of services they provide. For instance, they provide safe custody for their clients' money and other valuables. They also ensure safe transfer of funds from one account to another. In addition, they offer lending services and foreign exchange services as well as financial advice to their clients. These are just but a few of the vital services offered by commercial banks. In order to ensure customer satisfaction and efficiency in offering their services, banks have in the recent days invested much towards the advancement of their modes of operation (Jensen, 2007).

In Kenya, the adaptation of online banking can be manifested through the use of debit cards, credit cards, automated teller machines, Society for Worldwide Interbank Financial

Telecommunication (SWIFT), and Real Time Gross Settlement (RTGS). Mpesa, Mshwari and Mkesho, which are mobile banking services, also fall under the online banking services.

E-business has also been internally adopted by commercial banks through the use of Local Area Networks and intranet as well as sophisticated electronic systems. This has greatly enhanced service delivery to customers as a result of having more efficient operations. The ever growing pressure on financial institutions to minimize the gap on interest margins, aggravated by competition from nontraditional players such as the telecommunications companies, is causing more emphasis to be placed on key areas of performance, notably increasing revenue, reducing costs and increasing non- interest income. The post-election violence experienced in Kenya in the year 2008, accompanied by the immediate global financial crisis amplified the banks risks on non-performing loan portfolios thereby reducing the desire for interest income by banks (Bhakkad, 2012).

The introduction of telecommunication companies into the financial services sector led to a significant decline in revenues gained from non interest incomes. The telecommunication companies introduced money transfer services such as Airtel money from Airtel Company, Yu Cash from Essar Company, M-pesa from Safaricom Company as well as Orange Money from Telkom Kenya. For banks to counter this pressure and remain relevant in their business, they have to think strategically on how to come up with convenient and cost effective means. For instance, the banks must be keen on ensuring that internal efficiency is up to standard and also come up with more and cost effective alternative delivery channels such as the automated teller machines and debit cards (Bhakkad, 2012).

Looking through the last few years it can be noted that by the year 2000, there were only 230 automated teller machines (ATMs) in Kenya. This number grew gradually to 784 by the year 2006 and grew further to 1108 by the end of 2007. By the end of the year 2008, there the number had grown to 1530 ATMs (Central Bank of Kenya Annual Report, 2009). Despite this fast growth, this translated to 25000 people per one ATM as compared to global averages of less than 1000 people per one ATM. In addition, the

report shows that the continued growth in the use of ATMs is partly attributed to the expansion strategies being used by commercial banks, which has been ongoing in the last few years, fueled by the need to effectively compete for customers in the banking sector as well as retain and also enhance their market share. . By the end of the year 2013, the number of automated teller machines had grown to 2487 while the number of debit cards was 1708639 (www.centralbank.go.ke).

Electronic Funds Transfer (EFT) is also a very essential element to e-business. This is a system employed in transferring money from one account to the other. In this system, no paper money is involved. Direct deposit is one of the most commonly used electronic funds transfer system whereby payroll is directly deposited into the account of the employee. In Kenya, almost all commercial banks have electronic cards for their customers. These cards are used by the customers for various transactions. These include credit cards and smart cards as well as debit cards, among others. Credit cards are mostly used for making online as well as local purchases. They are recognized internationally and thus can be used to make purchases anywhere across the globe. Debit cards are commonly used for making withdraws from automated teller machines. They are also used for making payments at selected shopping centers. Smart cards can be explained as a modification of the credit cards that bear a computerized chip instead of magnetic strips (Andam, 2003).

Mobile banking is a relatively new concept in Kenya that was pioneered by The Cooperative Bank of Kenya. This service enables customers to access their individual accounts as well as perform a few transactions such as withdraws and account balance inquiries. A small fee is charged by the bank for these services (Acharya & Kagan, 2004). Several commercial banks in Kenya are now able to offer one branch banking services to their customers. This implies that a customer can make any form of transaction in any branch that their bank operates. This has been achieved through the adoption of internal e-business in the banks as discussed earlier (Joseph, 2011).

1.2 Statement of the Problem

Opportunities for global as well as regional e-business have been availed by the continually expanding number of internet users across the globe. E-business is not only based on the internet or websites but also includes previous business management as well as economic concepts. Thus, e-business impacts on various areas of business management. These include marketing, finance, accounting, economics, and production and operations management (Travica, 2002).

E-business has been vital in the improvement of operations in several sectors. For instance, it has significantly helped in cutting costs from the supply chain. This is due to the significant reduction of redundancies and paper work that has been achieved through adoption of e-business. Through e-business adaptation, there has been increased order accuracy and processes have been standardized. These factors have resulted to reduction of cost in the supply chain (Andam, 2003).

The introduction of e-business has also ensured reduced inventories as well as overheads by facilitating an efficient supply chain management known as pull-type supply chain management. This kind of supply chain management involves getting the customers' order and then making delivery through Just in Time (JIT) manufacturing. This has been beneficial for companies that manufacture goods capable of becoming obsolete within a short period. For instance, mobile phone companies collect customer orders for a given product after which they are transmitted via electronic means to the manufacturing plant where production is done as per the specifications of the customer. After production, delivery to customers is done within a short period of time (Qin, 2010).

In addition, e-business has been able to improve market integration by enhancing the visibility of price information as well as boosting trade across the globe. This has assisted buyers and sellers in distributing demand and supply efficiently (Jensen, 2007). According to Upton and Kim (1999), there has been a general assumption that advances in technological innovation such as adaptation of e-business has a direct positive impact on performance improvement. Several changes have been witnessed since the emergence

of e-banking amongst commercial banks in Kenya. For instance, customers can now access fast as well as convenient services from their banks. However, despite the benefits associated with e-business, it is important to have a good control on the risks and costs that are associated with e-business. It is important to ensure proper analysis of benefits as well as costs involved in e-business so as to avoid negative effect on the performance of banks. The performance of any bank is directly related to the efficiency of its operations.

According to Ashraf, Azam and Imam (2012), three quarters of the population in India lives in rural areas. Employment of e-business strategies in the banking industry in India has not only lowered costs of operation but also improved efficiency, speed as well as ensuring easy maintenance of the banking industry. In spite of these achievements, various challenges have been experienced ranging from failure of the adopted systems to increased bank frauds. These challenges can be counterbalanced by ensuring proper technological and security measures.

The future might see large growth in e-business spending and development in the banking industry because banks will have to adopt at least some forms of electronic payment technologies to stay competitive and meet the ever-changing consumer needs that could positively impact financial service providers that have established computer networks and telecommunications (Jupiter Research, 2006).

In the recent past, commercial banks in Kenya have significantly experienced incremental innovative initiatives according to a research conducted by Ngugi and Karina (2013). For instance, Equity bank has been in the fore front in adaptation of e-business by introducing innovative products such as mobile and internet banking services. Magutu et al (2011) carried out a study on 'E-Commerce Products and Services in the Banking Industry: The Adoption and Usage in Commercial Banks in Kenya'. In this research, it was found that e-business adaptation in commercial banks is greatly affected by internet hackers as well as computer viruses. These challenges have forced commercial banks to spend significant amount of money so as to minimize them.

According to another local study conducted by Ochieng (1998) on ‘the analysis of factors considered important in the successful implementation of information systems, a case study of commercial banks in Kenya’, findings indicated that e-business was a key factor on banks business process management. Njuru (2007) also conducted a study on ‘the challenges in implementing electronic banking strategy by commercial banks in Kenya’. In this study, it was found that lack of resources and the required infrastructure are some of the major challenges faced in adopting e-business in commercial banks in Kenya. None of these studies has given emphasis on the current topic of study but have only formed a basis of the study. Thus, this research addresses the following questions: “what is the impact of e-business on the efficiency of commercial banks’ operations” and, “what are the challenges faced by commercial banks in Kenya in adopting e-business in their operations?”

1.3 Research Objectives

The general objective of the study was to investigate the impact of technological advancement especially electronic transactions to the functioning of commercial banks in Kenya. The specific objectives were

- (i) To determine the impact of e-business on operating efficiency in commercial banks.
- (ii) To establish the challenges faced by commercial banks in Kenya in adopting e-business.

1.4 Value of the Study

Firstly, upcoming corporate companies will be able to know how to embrace e-business. This will enable them to select and implement suitable software in aid of their operations. Secondly, corporate companies using e-business will know how they ought to benefit from this technology and also identify new opportunities as e-business enhances quick delivery of the services being offered by the respective companies as well as maximum resource utilization without wastage. Lastly, this study will form a basis for further research to be used by researchers and scholars.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides a range of documented literature that is closely related to the problem area of study so as to avail a proper foundation of developing an understanding as well as establishing the necessary scope aligning objectives to knowledge that has been there before.

2.2 E-business Products and Services in Banking

E-business products and services can be described as the various ways employed by financial institutions to carry out their transactions without having to come into contact with their customers physically. Some of the services include mobile banking, electronic funds transfer, internet banking, automated teller machines and credit cards (Magutu et al, 2011).

2.2.1 Mobile Banking

Mobile banking can be described as the ability conduct bank transactions through mobile phones. Over the past few years, mobile banking has continuously developed from simple channel of delivering information to a more complicated banking transaction channel where various bank services can be accessed. These developments have been driven by the emerging business needs as well as progress in mobile technology (Petrova, 2001).

The major business drivers that have significantly contributed towards mobile banking evolution include customer experience and cost saving in banking operations. Through mobile banking technology, customers are able to enjoy various banking services from their mobile phones. These include simple bank statements, account balance enquiries, funds transfer, alerts on account limit and also payment of several utility bills (Mariga, 2003).

2.2.2 Electronic Funds Transfer

Electronic Funds Transfer (EFT) refers to a system which enables transfer of funds from one bank account to another. In this system, there is no physical handling of paper money because the transaction is conducted electronically. Direct deposit is one of the most commonly used electronic funds transfer program. This program involves depositing of payroll directly to the bank account of the employee. This program enables employees to access their funds within a short time (Joseph 2006).

Electronic funds transfer has paved way for paperless transactions whereby paper bills, checks as well as stamps have become unnecessary. Several benefits have been realized through the continued use of electronic funds transfer. These include; low administrative fees, improved efficiency, enhanced security and easier storage of documents (Andam, 2003).

2.2.3 Internet Banking

Internet banking can be described as the systems that are employed by banks to enable customers to access their personal bank accounts as well as detailed information on the products and services being offered through the website of the bank. Internet banking has done away with several procedures such as verification of signatures, faxes and also telephone confirmations (Koskosas, 2011).

Internet banking enables customers to have access to services such as account balance inquiries, transfer of funds between accounts as well as payment of utility bills at their own convenience. There has been continuous improvement of security in internet banking since its conception and thus the number of customers using internet banking has been growing over time (Umar, 2004).

2.2.4 Automated Tellers Machines (ATM)

An Automated Teller Machine refers to a computer terminal that is activated by debit card that has been magnetically encoded. Automated teller machines enable customers to

make withdraws from their accounts, make deposits, pay utility bills and also transfer funds between accounts at any given time (Kamel, 2006).

For a customer to have access to the services offered at the automated teller machines, they are provided with a debit card. The debit card requires the use of a personal identification number (PIN) which is unique and should only be known to the customer. This is because another person can withdraw money from a customer's account once they know their personal identification number. The debit card used at the automated teller machine can also be used at the point of sale (POS) for payment of goods and services. The point of sale service allows electronic transfer of funds from customers account to pay for products and services (Manzoor, 2010).

2.3 The Impact of E-business

In recent years, there has been a change in the way banks strive for increased profitability. In the past the banking industry was chiefly concerned with asset quality and capitalization. However, this was not enough due to the ever growing competition in the industry. Therefore, banks needed to find new ways to increase revenues in a "mature market" for most traditional banking services, particularly consumer credit (Deitel &Steinbuhler, 2004).Before banks could determine their online strategy, they needed to understand the factors contributing to the new competitive environment.

It is clear that the web is a more efficient vehicle for their services and allows banks to operate at lower operating costs. Online technology can deliver services far more economically than the existing methods, as the infrastructure costs such as PCs are shared with consumers. These economic efficiencies include low-cost technological infrastructures that reduce the cost burden of information upgrades and obsolescence, low-cost and accurate electronic transactions with customers, the low cost of global information sharing and advertising, and the ability of firms to provide low-cost customer service alternatives to expensive retail bank branches and telephone call centers. The immediate application of e-business is the internal integration of the firms' operation and external integration that molds the vast network of customers, government agencies, large

corporations, and independent merchants into a single community with the ability to communicate across any computer platform (Fruhling & Digman, 2000).

The adoption of e-business in any business context targets a particular segment of customers. Consumer behavior is more volatile than ever before, and companies need new ways of responding to consumer needs and satisfying demand. Consumers are no longer as influenced by brand names as they used to be, but more attentive to quality and value (Deitel & Steinbuhler, 2004).

The satisfaction of customer needs is one of the key aims of total quality management (TQM). To achieve this, professional firms must understand their clients by identifying needs and requirements, setting standards for service quality and developing systems for service delivery and measurement. The service quality dimensions perceived by customers include; timeliness-the service is provided promptly; empathy-the organization understands clients' needs; assurance-technical correctness for the work; fees-providing value for money; and reliability-firms will do what they intend to do. The buyer uncertainties because of often complex and intangible nature of the service offered pose a problem to firms. To reduce this problem, service providers ought to educate their clients on what they can reasonably expect to receive. They should have output indicators such as the number of complaints or positive feedback (Fruhling & Digman, 2000).

E-business has opened new universe for consumers and organizations, and it demands new management approaches. If exploited wisely, e-business has the potential to increase corporate profits through better customer acquisition and retention, new information based products and services, and more efficient operations. To respond to new opportunities and competitive threats, management will have to anticipate technological and consumer behavioral changes (Chattopadyay, 2001). According to Deitel and Steinbuhler (2004), e-business has had an impact on organizational structures and in particular, advertising and marketing communications departments, which are e-business applications in the banking sector.

Firstly, customers want to be able to bank at their convenience, including over the weekend or, late at night. They want to access account-related information, download account data for use with personal finance software products, and transfer and also pay bills electronically. Banks are thus shifting to a method of communication that will enable their customers to be reached, served, and sold products and services in their homes and offices whenever it is convenient for them all the time.

Secondly, online technology can deliver services far more economically than previous methods since the infrastructure costs such as PCs are shared with consumers. If banks are going to compete with these larger competitors, they are going to address their traditional banking overheads structures as well as their existing banking strategies (Bak, & Stair, 2011).

Thirdly, social, demographic, and economic changes have altered the way consumers value their time and money. Customers have been very receptive audience for time saving products and services. They are careful about personal finances and have a need to plan for the future.

Consumer concerns can be seen in the trend of customer's purchase of investment services like mutual funds, annuities, and trust services. The vast majority of retirees who have savings and incomes need financial advice, counsel, and products. One of the means to achieve competitive advantage is to provide convenience and customization of products and services simultaneously. This can be effectively achieved by embracing e-business (Bak, & Stair, 2011).

Customer satisfaction is one of key aims of TQM. One of the major benefits of bringing banking onto the internet is enhanced high quality customer service. E-business applications improve the quality of service in various dimensions such as timeliness, speed of service delivery, reliability, and technical correctness of diverse applications (Deitel & Steinbuhler, 2004).

In summary, e-business has positively impacted on three major processes which include production processes, customer-focused processes and internal management processes. Production processes entail procurement, linking electronically with suppliers, replenishment of stocks as well as controlling of production processes. Customer-focused processes entail advertisement and marketing issues, customer care and processing of customers' payments among others. Internal management processes include training of employees, recruitment of new employees, sharing of information amongst employees internally and also video conferencing. E-business applications have ensured efficient flow of information between production and sales department and thus sales force productivity has been greatly enhanced (Andam, 2003).

2.4 Drivers of E-business

The forces propelling the trend of e-business include economic forces, customer interaction forces, and technology driven digital convergence (Yadav, 2006). Economic forces aim at ensuring efficiencies such as low cost and accurate transactions with suppliers. They may be internal or external. Internal integration allows storage of critical data in digital format, instantaneous retrieval and electronic transmission. While technology is important to information integration, coordination of that information is indispensable.

Marketing and customer interaction forces entail product differentiation and new strategies with more competition in the market. It also includes employment of technology to establish customers and improve on quality content and speed delivery (Yadav, 2006).

The relentless advance of technology, the emergence of multimedia standards and the shift to distribute computing and internet are providing the raw power for “digital convergence” which takes two dimensions. These are: convergence of content and convergence of transmission. Convergence of content ensures that digital information can be processed, searched, sorted, enhanced, converted, compressed, encrypted, replicated, and transmitted at low cost. Content-based industries such as newspaper and book

publishers use this tool. It also allows companies to use the networked databases and electronic publishing to improve corporate and individual decision-making and information processing (Singh & Waddell, 2004).

On the other hand, convergence of transmission compresses and stores digitized information so that it can travel through existing phone, wireless and cable wiring system. From a business point of view, convergence of transmission results in easier access to networks and in the creation of new, low-cost delivery channels for new and old products (Singh & Waddell, 2004). The technology advance improves communication, connectivity and infrastructure across any branch network to allow for implementation of automation of e-banking based products (Yadav, 2006).

2.5 Limitations of E-business

There are still some problems and drawbacks to consider before plunging into the web-business. Firstly, security continues to be a problem for online businesses. Customers express reluctance to give their credit card number via the internet. Consumers have to be confident about integrity of the process before they commit to purchase. In that case, security measures are costly and can only be managed by banks with large amounts of investments funds (Umar, 2004).

According to Umar (2004), data protection and integrity of the system that handles data are a serious concern. The danger of hackers accessing files and corrupting accounts brings stress to the system. Computer viruses are rampant and may cause delays, storage problem and loss of critical data.

Koskosas (2011) argues that adoption of e-business in commercial banks has derailed customer-bank relationship. This is due to the fact that the traditional bank normally avails the opportunity to customer to grow a personal relationship with the bank. By a customer getting to personally know the officers in their local branch, they can be able to easily access loans and any other special services. For instance, the customer can easily

get a business loan through personal relationship with the bank if they have a business account.

In some instances, physical meeting is necessary to complete complex transactions and also solve complicated issues with the customers. A traditional bank is capable of hosting meetings as well as calling in experts to address a specific issue concerning the customer. In addition, complications that may occur as a result of international transactions contacted online are more difficult to solve than those that occur when transactions are carried out through the traditional bank (Koskosas, 2011).

System scalability has also been a challenge as far as adoption of e-business is concerned. The website needs to be scalable on regular basis. System upgrading helps to overcome problems associated with performance, speed, and maintaining a super response time. This takes effort and is expensive to maintain. Corporate vulnerability has also been a major limitation of e-business. The availability of product details, catalogs, and other information through the business website it makes it vulnerable to access by competitors (Umar, 2004).

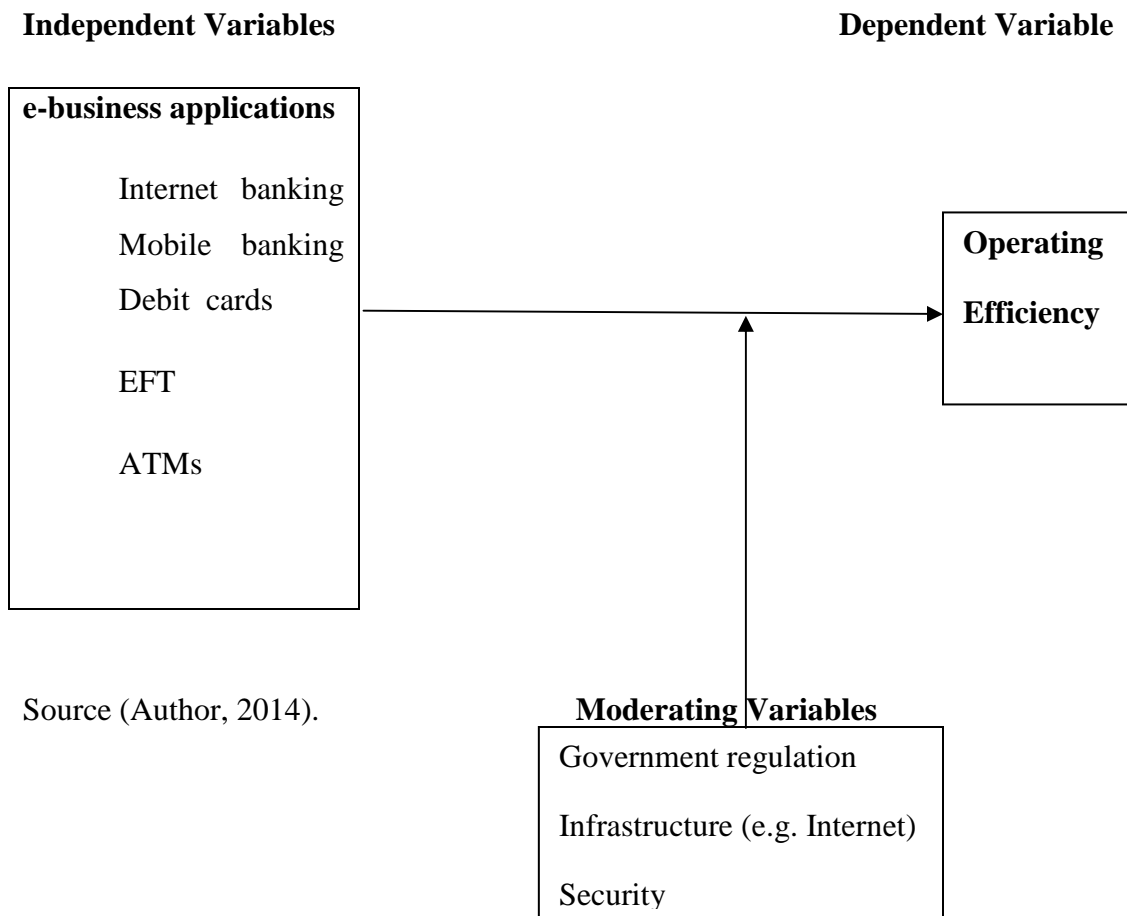
Several banks opt to outsource service providers to operate as well as maintain their systems. Given that the banks may be lacking the necessary expertise, there is high operational risk because the service provider is capable of gaining access to all vital information concerning the bank and the whole system is vulnerable. The operational risk of the bank is also increased by failure to update its system so that it matches the rapidly changing technology. This is because loop holes are left in the banks security system, making the system vulnerable to fraudsters (Mariga, 2003).

The cost associated with developing e-business applications can be very high and thus successful installation of all the required applications can be a challenge. In addition, mistakes that may result during installation due to lack of experience may result to various problems like delays in service and loopholes which could easily allow frauds. Lastly, several legal issues are not yet resolved and also government regulations have not been fully refined as a result of various circumstances (Mariga, 2003).

2.6 Conceptual Framework

The operating efficiency of commercial banks (dependent variable) greatly relies on the utilization of e-business applications (independent variables) while the moderating variables such as government regulations, infrastructure and security affect how e-business applications impact on the operating efficiency as shown in the figure below.

Figure 1.



Source (Author, 2014).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter will look at the approach and methods used in data collection. It is also aimed at giving detailed information on the data used, sources of data and analysis.

3.2 Research Design

This was a descriptive study whereby data was collected from licensed commercial banks in Kenya. According to Mugenda and Mugenda (2003), descriptive research is employed when the problem has been well designed and where individual conducting the research is capable of engaging in the survey by going to the population of interest so that that the interviewees can give explanation to certain features concerning the problem being studied. This design was appropriate for the study because it improved understanding of a particular business or management problem, resulting in solution to problems, new knowledge limited to problem and also assisted in finding practical relevance and value to managers and organizations.

3.3 Target Population

The population of the study was all the 44 commercial banks in Kenya that have been licensed by the Central Bank of Kenya. The list of commercial banks was sourced from the commercial banks directory sourced from CBK (Appendix C). A census survey was conducted since the targeted population is small and thus could be easily managed.

3.4 Data Collection

The data was collected using structured questionnaires. The questionnaires were issued to personnel who are in charge of business development and relationship departments like the branch managers and operation managers since they are more likely to be knowledgeable on e-business strategy embraced by the commercial banks' decision-making organ. The questionnaire was divided into four sections. Section A aimed at collecting data on demographic information of the respondents as well as the profile of

the company. Section B aimed at collecting information on the impact of e-business on efficiency of commercial banks. Section C was meant to give information on the challenges faced while implementing e-business in banking. The last section aimed at collecting data on the responses that commercial banks have employed to counter challenges faced while implementing e-business in banking.

3.5 Data Analysis Technique

Completed questionnaires were edited for completeness and consistency. The data was then coded and checked for any errors and omissions. Frequency tables, percentages and means were used to present the findings. The data collected in this study was both quantitative and qualitative.

Quantitative data obtained was analyzed using descriptive statistics in order to present the general picture of the organization as well as the expected respondents. Frequency distribution is an example of descriptive statistics. The output of the analysis was presented in tables after which interpretations were made based on research objectives.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATIONS

4.1 Introduction

This chapter is aimed covering data analysis and findings of the study. The data is summarized and presented in form of tables and percentages. The data collected has been analyzed and interpreted in line with the objectives of the study which are; to determine the impact of e-business on operating efficiency in commercial banks and to establish the challenges faced by commercial banks in Kenya in adopting e-business.

4.2 Demographic Information

A total of 44 questionnaires were distributed and 28 questionnaires were responded to making the response rate 71%. This was considered good since the banking industry is very restrictive on giving out information to the public. The first section of the questionnaire aimed at collecting the respondent's personal information and that of the company. Most of the respondents did not indicate the name of their organizations probably for security reasons. The highest percentage of the respondents was aged between 26 to 35 years. Some of the respondents chose not indicate their age.

Respondents were also asked to indicate the departments they worked in. Operations, personal and business banking, electronic banking and information technology are some of the departments that the respondents worked in. Most of the respondents had worked in their current organization for a period of less than 5 years while the least percentage of the respondents had worked for more than 15 years in their current organization.

The study also established that most of the organizations have been in operation for a period of between 20 to 30 years. Respondents were also asked to give the approximate number of years they had transacted with commercial banks. Most of the respondents had transacted with banks for a period of 6 to 10 years. The least percentage of respondents had transacted with banks for a period of less than 1 year.

4.3 Impact of E-business on Efficiency of Commercial Banks in Kenya

In wanting to assess the impact of e-business on efficiency of commercial banks, respondents were asked to state which types of e-business had been adopted by their banks. They were also asked to rate the changes that had been experienced as a result of adoption of e-business.

Table 1: Types of E-business Technologies Adopted by Commercial Banks in Kenya

	Mean	Std. Deviation
ATM cards	1.00	0.000
Credit cards	0.68	0.476
Debit cards	1.00	0.000
Mobile banking	0.93	0.262
Electronic funds transfer	0.96	0.189
SWIFT	0.96	0.189
Smart cards	0.25	0.441
Internet banking	0.57	0.504

All the commercial banks were found to have adopted ATMs and debit cards while only 25% of the banks had smart cards for their customers. 68% of the banks were found to have adopted the usage of credit cards while 93% had adopted mobile banking. It was also established that 96% of the banks had adopted the use SWIFT and EFT services. Internet banking services were being offered by 57% of the commercial banks.

Table 2 shows the responses received from respondents concerning the effect of e-business adaptation on various aspects of their banks operations. The respondents were asked to rate their opinion using a 5 point scale. 5 indicated greatest extent, 4 for Great extent, 3 for Moderate extent, 2 for less extent and 1 for Not at all. Scores were assigned; 1,2,3,4 and 5 representing a mean score of 1,2,3,4 and 5 respectively. Mean scores were then computed based on the responses from the respondents and standard deviations computed for each effect. Effects with a high mean score and a lower standard deviation

meant that the effect had had a greater impact to the banks under study and that it was reliable.

Table 2: Impact of E-business on Efficiency of Commercial Banks in Kenya

	Mean	Std. Deviation
Decrease in operating cost of the bank	3.357	0.870
Increase in customer base of bank	3.357	0.870
Improvement in general quality of service delivered	4.037	0.940
Increase in customer deposits	3.536	0.838
Increased customer loyalty	3.593	0.971
Increased customer withdrawals	3.643	0.911
Decreased transaction processing time	4.214	1.134
Improved staff productivity	3.536	0.744
Reduced paper work costs and phone call costs	4.286	0.659
Increased turnover of the bank	3.370	0.629
Reduced marketing & advertisement costs	3.154	0.834
Increased customer convenience	4.357	1.026
Customers provided with valuable information concerning the bank's business	3.357	0.870
Expanded geographical reach of bank	3.429	0.879

Most of the respondents indicated that adaptation of e-business had resulted to moderate decrease in the operating cost of the bank. E-business had resulted to improved quality of service delivered to customers with a mean of 4.037. This implies that the quality of service had improved to a great extent according to the respondents. Customer deposits, customer withdraws, staff productivity and customer convenience were also found to have increased to a great extent.

Transaction processing time and paper work had decreased by a great extent. There was a moderate increase in turnover and expansion of geographical reach of the bank as a result of adaptation of e-business in commercial banks. These findings agreed to Andam (2003) conclusions that e-business has significantly helped in cutting operational costs as well as standardizing processes. In addition there was increased customer convenience, increased customer withdrawals and increased customer loyalty. This revelation is in line with Deitel & Steinbuhler (2004) findings.

4.4 Challenges faced while Implementing E-business in Banking

The study also aimed at getting the respondents view on the challenges that their organizations faced while implementing e-business. A question was asking respondents to rate their opinion on the challenges their banks faced while implementing e-business in banking was asked and a 5 point scale was used. 5 indicated greatest extent, 4 for Great extent, 3 for Moderate extent, 2 for less extent and 1 for Not at all. Scores were assigned; 1,2,3,4 and 5 representing a score of 1,2,3,4 and 5 respectively. Mean scores were then computed based on the responses from the respondents and standard deviations computed for each challenge. Challenges with a high mean score and a lower standard deviation meant that the challenge had had a greater impact to the banks under study and that it was reliable. Table 3 illustrates the responses that were obtained.

Table 3: Challenges faced while Implementing E-business in Banking

	Mean	Std. Deviation
Too expensive technology	3.57	.790
Lack of enough technological skills	2.71	.810
Lack of cooperation from top management	2.00	.609
Negative attitude towards implementation of e-business	2.36	.911
Resistance of change to e-business applications	2.71	.897
Fear from employees losing jobs	2.86	.970
Fear of insecure e-business applications	3.46	1.138
Current organizational structure does not permit implementation of e-business	1.82	.670
Organization hesitant to employ specialized staff	2.57	1.989
Non predictability of internet in Kenya	2.46	.693
Fear of compensation in case of fraud	2.86	.891
Government legislation is too strict on installation of some applications	2.14	.705
Poor sensitization of customers	2.71	.810
Lack of specialized monitoring team	2.54	.999
Privacy of personal data	3.07	1.215
Lack of personal contact with customers	2.93	1.152
Poor user support	2.54	.999
Threat from viruses	3.18	1.416
High cost of maintenance	2.79	1.067
Lack of government compliance	2.96	4.185

The greatest challenge was expensive technology with a mean score of 3.57. This was followed by lack of enough technological skills, fear from employees losing their jobs, fear of insecure e-business applications, lack of specialized staff, fear of compensation in case of a fraud, poor sensitization of customers, lack of specialized monitoring team, lack of personal contact with customers, privacy of personal data, lack of government compliance, high cost of maintenance and threat from viruses.

The least felt challenges were lack of cooperation from the top management, negative attitude towards implementation of e-business applications, too strict government legislation on installation of e-business applications and non-predictability of internet in Kenya.

In consistence with Magutu et al (2011) findings, it was found that computer viruses and internet hackers pose a significant challenge to the implementation of e-business in commercial banks in Kenya. High cost of maintenance and expensive technology are some of the major challenges being experienced by banks as they continue to implement e-business according to this study. These findings are consistent with Njuru (2007) findings. The findings of this study that privacy of personal data is a major challenge towards the adoption e-business agree with the findings of Umar (2004).

4.5 Responses to Challenges Faced while Implementing E-business

Respondents were also asked to rate their bank's uses of suggested strategies to respond to the challenges faced while implementing e-business and a 5 point scale was used. 5 indicated greatest extent, 4 for Great extent, 3 for Moderate extent, 2 for less extent and 1 for Not at all. Scores were assigned with 1,2,3,4 and 5 representing a score of 1,2,3,4 and 5 respectively. Mean scores were then computed based on the responses from the respondents and standard deviations computed for each response. Responses with a high mean score meant that the response had had a greater impact to the banks under study and those with low standard deviations meant that the responses were more reliable.

Table 4 illustrates the responses that were obtained from the respondents.

Table 4: Responses to Challenges Faced while Implementing E-business

	Mean	Std. Deviation
Adequate training of employees on e-business	3.68	1.020
Creating customer awareness on benefits of e-business	3.43	.959
Involving top management in implementation of e-business	3.50	1.036
Allocation of specific budget for e-business implementation	3.54	.962
Involving government in the implementation process	2.64	.951
Having specialized team for e-business implementation	3.32	.905
Contracting stable internet providers	3.75	.887
Having a specialized security team to monitor fraud	3.50	.882
Lowering electronic transactions charges	3.57	.997
Terminating the implementation of e-business applications	1.79	.833

From the table, the most popular responses were lowering electronic transaction charges, having specialized security team to monitor fraudulent transactions, contracting stable internet providers, application of specific budget for e-business involving top management and adequate training of employees on e-business. This is consistent with Chattopadyay (2001) findings. The least popular response was terminating the implementation of e-business applications. The results obtained from the study are in line with Hansson et al (2003) findings that training of employees on e-business is a popular response.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter is aimed at summarizing the findings of the study as well as making conclusions on e-business and efficiency of commercial banks in Kenya. It also includes recommendations for further research.

5.2 Summary

The major findings of the study can be summarized as follows; in determining the impact of e-business on operating efficiency of commercial banks, the study reveals that most of the commercial banks had adopted the use of ATMs, debit cards, mobile banking, EFT and SWIFT. Internet banking, smart cards and credit cards had only been adopted by a small percentage of the commercial banks. The adoption of e-business in banking has positively impacted on the operating efficiency of commercial banks in Kenya according to the study findings. For instance, there has been improvement in general quality of service delivered to customers, increased customer deposits, reduced paper work, decreased transaction processing time, improved staff productivity as well as increased customer withdrawals.

The evidence gathered from the study indicates that lack of resources and infrastructure needed to implement e-business are some of the challenges faced by commercial banks while implementing e-business. These resources include technological equipments and capital needed in terms of cash. Much of the technology required is not present in Kenya currently and this has proved to be a great challenge in implementation of e-business in banking. This challenge does not only lead to high costs to the commercial banks but also long turnaround times in the course of implementation of e-business in banking.

In determining how commercial banks in Kenya are responding to the challenges of adopting e-business in banking, the findings of the study indicated that banks have invested in hiring special teams for support in e-business applications. Customers are

constantly being trained on the use of e-business applications. Banks have also reduced the electronic payment transaction charges so as to attract more customers to using e-business applications. This strategy has motivated more customers to utilize e-business applications since they are cheaper and faster. The least popular strategies employed by banks in order to counter the implementation challenges include collaborating with other banks in the implementation process and terminating the implementation of e-business strategy.

5.3 Conclusions

Most of the commercial banks in Kenya have invested significantly on e-business applications in banking in spite of the various challenges that exist. It can be concluded that adoption of e-business in commercial banks in Kenya has positively impacted on the operating efficiency of the banks. In addition, it can also be concluded that Kenyan consumers have low confidence towards e-business applications in banking. A good number of customers are not comfortable with transactions that do not involve manual signing due to high risk of fraud. This implies that security of e-business applications in banking is paramount for the customers as well as bank employees since they do not want to risk their employment from the fraudulent transactions.

Extended regulations have been enacted by the government for most of the transactions involving e-business applications. Most of these regulations involve banks and customers having to sign several agreements and availing supporting documents for online transactions. The customers might have laxity in adhering to these stringent regulations especially if it is possible to conduct the same transactions manually. Customers should thus be adequately trained on the benefits of utilizing these services.

From the study findings, one can safely conclude that negative attitude from the employees who are supposed to be spear heading the implementation process of e-business is a major challenge. This is due to the fear of losing jobs after automation of several services and also the feeling that the technology is too complicated to cope with.

Commercial banks in Kenya should thus come with proper means to ensure that employees are motivated and assured that they are not going to lose their jobs.

5.4 Recommendations

Commercial banks in Kenya need to invest more and encourage customers on the use of credit cards, smart cards and internet banking. The customers should also be well informed on the various fraud risks involved in using these services. The following are some of the major challenges that need to be adequately addressed in order to ensure better service to the customers: lack of enough technological skills, poor sensitization of customers, lack of specialized monitoring team, fear from employees losing jobs and resistance of change to e-business applications.

The top management of commercial banks in Kenya should rethink on their corporate strategy with the advent of new cash transaction innovations such as Airtel Money, Yu Cash, M-pesa and Orange Money. They should also come up with business ideologies aimed at integrating business processes so that they can react to market-induced requirements for flexibility and product as well as service quality while slashing both turnaround times and costs.

5.5 Limitations of the Study

Lack of proper understanding as well as unwillingness to answer questions on the pretext that the information provided will be improperly used was a major limitation of the study. Some of the respondents did not understand the reason for carrying out the study and thus they lacked corporation answering the questionnaire. Other respondents lacked enough information on the questions asked and ended up giving irrelevant answers.

Another great hurdle encountered during the study was that some of the respondents developed bias as they responded to questions as a result of self selection bias. Other respondents never bothered to give back the questionnaires and opted to keep them. This resulted to wastage of time and resources since other questionnaires had to be issued to willing respondents.

5.6 Suggestions for Further Research

Further research should be conducted to determine the impact of e-business in other sectors of commercial and financial sectors in Kenya. In addition, research should be done to investigate challenges faced by other sectors as they implement e-business strategies. Finally, research should be conducted to establish the various suitable responses that should be employed to counter these challenges.

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APPENDICES

Appendix A: Letter to the Respondents

University of Nairobi

School of Business

P.O Box 30197

Nairobi

Telephone: +254-2-318262

Dear Sir/Madam,

E-BUSINESS AND EFFICIENCY OF COMMERCIAL BANKS IN KENYA

I am a Postgraduate student undertaking a Master of Business Administration (MBA) degree at the University of Nairobi. I am currently carrying out research on e-business and efficiency of commercial banks in Kenya as part of my degree programme. Your organization has been chosen to be used for this research. I would therefore like to request for your assistance in completing the questionnaire attached to enable me complete the research. The information you provide will be treated with strict confidentiality and will only be used for academic purposes (research).

Your cooperation in completing the questionnaire will be highly appreciated. Yours faithfully,

Mr. Mangeli Muthama

MBA Student

University of Nairobi

Mr. Onserio Nyamwange

Supervisor

University of Nairobi

Appendix B: Sample Questionnaire

E-BUSINESS AND EFFICIENCY OF COMMERCIAL BANKS IN KENYA

Research conducted with the authorization of the University of Nairobi, Faculty of Commerce, and School of Business. (Please tick responses as appropriate. where necessary tick as many items as you find relevant.)

Section A: Demographic information

1. Name of your Organization.....
2. Age (Optional): 18 – 25 26– 35 36 – 45 46 – 50
 51 and above
3. What department do you work
4. Your title or Position you hold.....
5. How many years have you worked for the firm?
 0 – 5 5–10 10 – 15 15 and above

Company Profile

1. How many years has the bank operated?
 0 – 10 10–20 20 – 30 30 and above
2. Does your bank serve both Corporate and personal account holders or only one group
 Corporate Personal Both
3. Approximately how many customers hold accounts with you? (000')
 1-500 501 - 1000 1001 – 1500 1501 - 2000
 More than 2000

Period while transacting with banks

Transaction period with the bank	Tick
Less than 1 year	[]
1-5 years	[]
6-10 years	[]
11-15 years	[]
16-20 years	[]
20-25 years	[]
More than 25 years	[]

Section B: Information on impact of e-business on efficiency of Commercial Banks in Kenya

(a) Has your bank adopted e-commerce as of yet? (Please tick one)

Yes No

(b) If yes, which ones? (Please tick)

ATMs <input type="checkbox"/>	Electronic Funds Transfer <input type="checkbox"/>
Credit cards <input type="checkbox"/>	SWIFT <input type="checkbox"/>
Debit card <input type="checkbox"/>	Smart cards <input type="checkbox"/>
Mobile Banking <input type="checkbox"/>	Internet banking <input type="checkbox"/>

(c) Please rate your opinion on the changes that your bank has experienced following adaptation of e-business in its operations.

5-Greatest extent; 4-Great extent; 3-Moderate extent; 2-Less extent; 1-Not at all

Effect of e-business adaptation on various aspects of the bank's operations	1	2	3	4	5
1) Decrease in operating costs of the bank					
2) Increase in customer base of the bank					
3) Improvement in general quality of service delivered to customers					
4) Increase in customer deposits					
5) Increased loyalty of customers					
6) Increase in customer withdrawals					
7) Decreased transaction processing time					
8) Improved staff productivity					
9) Reduced paper work costs and phone call costs					
10) Increased bank turn over					
11) Reduced marketing as well as advertising costs					
12) Increased customer convenience.					
13) Customers provided with valuable information concerning the bank's business					
14) Expanded geographical reach of the bank					

(d) If there has been increase in operating costs, state in what aspects.

.....

(e) If there has been decrease in the customer base of the bank, state in what aspects.

.....

(f) How has e-business affected the managerial decision making process?

.....

Section C: Challenges Faced While Implementing E-business in Banking

(a) Please rate your opinion on the challenges that your bank faced during the implementation of e-business or those which made the bank stop the Implementation process.

5-Greatest extent; 4-Great extent; 3-Moderate extent; 2-Less extent; 1-Not at all

Challenges Faced While Implementing E-business Banking	1	2	3	4	5
1) The technology required is too expensive.					
2) Lack of enough technological skills within the organization.					
3) Lack of cooperation the top management.					
4) Negative attitude towards the implementation of e-banking applications from the employees.					
5) Resistance of change to e-banking applications by target customers.					
6) Fear from employees losing jobs after installation of e-banking applications.					
7) The fear that some e-banking applications are insecure.					

8) Current Organizational structure does not permit changes in some processes of the bank.					
9) The organization is hesitant to employ specialized support staff for e-business.					
10) The stability of internet in Kenya is not predictable and might interfere with the effective use of e-business applications.					
11) Fear of compensation that might be demanded in case a fraud arises from the use of e-business applications.					
12) Government legislation is too strict on installation of some e-business applications in the banking sector.					
13) Poor sensitization of customers on the benefits of e-business in banking.					
14) Lack of specialized team to monitor fraudulent transactions.					
15) Privacy of personal data					
16) Lack of personal contact with customers					
17) Poor user support					
18) Threat from viruses developed by hackers					
19) High cost of maintenance					
20) Lack of compliance with government regulations					

(b) Please specify any other challenges faced in the adoption of electronic banking strategy.

.....

.....

.....

.....
.....
(c) Is the Banks' management fully informed of the risks involved with some of the e-banking applications and do they understand those risks? (Strategic, reputation, transaction, compliance)

Yes No

Section D: Responses to the Challenges Faced while Implementing E-business.

1. Is there a review of e-business included in the annual general meetings for the managers?

Yes No

2. Did they find any exceptions during the previous meeting? Yes No

3. Have those exceptions been addressed? Yes No

4. Please rate your bank's use of the following strategies to respond to the challenges faced while implementing e-business.

5-Greatest extent; 4- Great extent; Moderate extent; 2-Less extent; 1-Not at all

Responses to challenges faced while implementing e-business	1	2	3	4	5
1) Adequate training of Bank employees on utilization of e-business applications.					
2) Creating customer awareness on the benefits of using e-business applications in banking.					
3) Involving top management in the implementation program.					
4) Allocation of specific budget for e-business implementation.					
5) Involving the government in the implementation process.					
6) Having a specialized team supporting e-business to help customers in their transactions.					
7) Contracting stable internet providers.					
8) Having a specialized security team to monitor fraudulent transactions involving e-business.					
9) Lowering electronic transaction charges below manual transaction charges.					
10) Terminating the implementation of e-business applications.					

5. Please state any other responses that your organization can employ to counter the challenges of implementing e-business in banking.

.....

.....

.....

.....

.....

THANK YOU FOR YOUR PARTICIPATION IN THIS EXERCISE

Appendix C: List of Commercial Banks in Kenya

1. African banking corporation ltd
2. African Development bank ltd
3. Bank of Africa Kenya ltd
4. Bank of Baroda (k) ltd
5. Bank of India
6. Barclays bank of Kenya ltd
7. Co-operative bank of Kenya ltd
8. Central bank of Kenya
9. CFC Bank ltd
10. Chase Bank (k) ltd
11. Charterhouse Bank ltd
12. Citibank N.A Kenya
13. City finance Bank ltd
14. Commercial bank of Africa ltd
15. Consolidated bank of Kenya ltd
16. Credit bank ltd
17. Development bank of Kenya ltd
18. Diamond trust bank (k) ltd
19. Dubai bank Kenya ltd
20. East African building society
21. Equatorial commercial bank ltd
22. Equity bank ltd
23. Family bank ltd
24. Fidelity commercial bank ltd
25. Fina bank ltd
26. Giro commercial bank ltd
27. Guardian bank ltd
28. Habib bank ltd

29. Habib bank A.G Zurich
30. Imperial bank ltd
31. Investment & mortgages bank ltd
32. K-rep bank ltd
33. Kenya commercial bank ltd
34. Middle East Bank (k) ltd
35. National bank of Kenya ltd
36. Nic bank
37. Oriental commercial bank ltd
38. Paramount universal bank ltd
39. Prime bank ltd
40. Southern credit banking corp. Ltd
41. Stanbic bank Kenya ltd
42. Standard chartered bank (k) ltd
43. Trans-national bank ltd
44. Victoria commercial bank ltd