DECLARATION

This research project is my original and has not been presented in any other University for the same award.

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SUPERVISOR APPROVAL

This work has been submitted for my approval as the appointed university supervisor.

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ABSTRACT

This project surveyed the Internet banking as a relatively new product that has been developed by commercial banks in Kenya. Businesses are being revolutionized every day as a result of the influences of the Internet. In the world of banking, the development in information technology has enormous effect on development of more flexible payments method, more user friendly banking services resulting to a more efficient banking system. Despite the fact that internet banking make the transaction faster and more convenient, several commercial banks in Kenya are yet to adopt this new banking product. The banks that have adopted the product have been faced with various obstacles necessitating a need for a research project to ascertain the reasons for this phenomenal and determine how they can overcome them to facilitate a breakthrough. The research design was descriptive based on a case study of Commercial Bank of Africa Ltd. In order to gain a better understanding on these issues, the data was collected from the bank customers and from bank employees using questioners. Data analysis was done in accordance with the research questions. The study was representative because the sample was picked from 27.8% of the Internet banking customers as at the end of 31st December 2008. The total number of bank customers and the employees as at December 31st 2008 was 3,222. The study shows that Internet banking is fraught with teething problems ranging from security concerns by the users, lack of adequate legal framework, poor marketing strategies and issues regarding the connectivity of CBA internet banking site. The study concludes that banks need to promote Internet banking by offering more incentives to customers, enhance the security systems to ensure adequate security for their customers in an ever changing world of technology and ensure adequate training of the employees.
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DEFINITION OF OPERATIONAL TERMS

Internet Banking
Internet Banking refers to systems that enable bank customers to access accounts and general information on bank products and services through a personal computer (PC) or other intelligent devices.

cba@net
This is a website that is used for CBA Internet bank customers. In order to gain access to this site, you should have a password that would enable you to access your account on the Internet.

E-Banking
This is an umbrella term for the process by which bank customers may perform banking transactions electronically. They include ATMs, Phone banking, PC banking, Internet banking and debits and credit cards banking.

Anti Money Laundering
This refers to an illegal transfer of funds. This is normally done by a cartel of International drug dealers whose intention is to confuse anyone trying to establish the source of the drug money. The Money launderers, if unchecked may abuse the Internet banking transfer facility

The Banking Act
This refers to Chapter 488 of the Banking Act in Kenya, which is the act that governs all the commercial banks in Kenya.

CBA IT Department
This refers to one of the department in Commercial Bank of Africa which deals with all the issues related to the banks Internet Banking.
128-Bit SSL Encryption Key
This is one of the Security keys used by CBA in the Internet banking website. It converts a meaningful message into a computer language. SSL stands for Secure Socket Layer. The key offers protection whenever one makes a financial transaction on the Internet.

CERN
The acronym CERN stands for Conseil Européen pour la Recherche Nucléaire (European Council for Nuclear Research), which was a provisional council for setting up the laboratory, established by 11 European governments in 1952.

ENQUIRE
This was the first program that was written that had any Web like qualities.

File Transfer Protocol (FTP)
A standard way of transferring files from one computer to another on the Internet.

Hypertext Transfer Protocol (HTTP)
A standard method of publishing information as electronic documents that present information that can be connected together in many different ways instead of sequentially on the internet.

Optic Fibres
The fibre is a size of a human hair which uses light to transmit communication, giving fast connection and clarity in voice.
CHAPTER ONE
INTRODUCTION
This chapter starts by addressing the background of the study, statement of the problem, objectives of the study, justifies why the study was done and then goes on to show the scope of the study and the definition of the terms.

1.1.0 Background information
According to Internet World Stats (IWS, 2006), global internet access exceeded 1,094 million people in December 2006 offering new markets for internet-based services such as Internet banking. Internet is a technology that spreads faster than any other technology. Since the new millennium, internet banking experienced explosive growth in many countries and has transformed traditional banking practice. By offering Internet Banking services, traditional financial institutions seek to lower operational costs, improve consumer banking services, retain customers and expand share of customers. Like any other banking product, internet bank is faced with several challenges which need not be ignored. Based on this fact, there is a need to identify and describe the major issues that inhibits the adoption and the growth of Internet banking. The purpose of this research is to analyze the major challenges facing the Internet banking in Kenya.

1.1.1 Historical technological advancement of Internet Banking in Kenya.
The origin and the growth of Internet banking can be attributed from the development of the Internet. The origin of the World Wide Web (WWW) can be traced back to 1980, when, at CERN in Switzerland, the Englishman Tim Berners-Lee built ENQUIRE. While it was rather different from the web in use today, it contained many of the same core ideas. In March 1989, he wrote a program called the World Wide Web which referenced ENQUIRE. Since then it became obvious to most publicly traded companies that a public Web presence was no longer optional. Though at first people saw mainly the possibilities of free publishing and instant worldwide information, increasing familiarity with two-way communication over the Web led to e-commerce which has opened many trading opportunities. With the widespread adoption of both the internet and its associated "world-wide-web (WWW)" structures, the global economy has advanced to an
unprecedented level by creating an environment whereby the consumers can transact business on national and international scales with relative ease.

The Internet banking in Kenya is relatively a new product. The first bank to introduce the product was Standard Chartered Bank in 2001 and soon after it was joined by Barclays bank and Citibank. Commercial Bank of Africa introduced the product in 2003 and was later joined by other banks like Equity and Transnational Bank which introduced the product in March 2009.

On June 12th, 2009, there was an undersea fibre optic cable connected from United Arab Emirate to the Kenyan port of Mombasa. According to Anyanzwa J 2009, the landing of undersea fibre optic cables will give rise to many people and companies in the Eastern Africa region repositioning to reap from cheaper and faster Internet connectivity. It is expected to boost internet connections and greatly reduce the cost of telecommunication in the country compared to the satellite system said to be expensive and slower. This development is expected to have a major positive impact on the number of bank customers subscribing for the Internet banking in future.

1.1.2 Historical background of Commercial Bank of Africa ltd (CBA)

Commercial Bank of Africa Limited (CBA) was founded in 1962 in Dar-es-Salaam, Tanzania and quickly established branches in Nairobi and Mombasa in Kenya and in Kampala, Uganda. With the nationalization of banks in Tanzania, CBA reincorporated itself in Kenya in 1967. In the light of political developments in Uganda in 1971, it subsequently sold the Kampala branch. CBA commenced business as a subsidiary of Societe Financiere pour les pays D’Outre Mer (SFOM), a Swiss based consortium bank with interests in financial institutions throughout Africa.

Original consortium members included Bank of America, Commerz Bank (later on sold to Dresdner Bank), Bank Bruxelles Lambert and Banque National de Paris. In 1980, Bank of America acquired all the shares of the other SFOM partners and CBA became a
subsidiary of Bank of America, although 16% of the shares were held by Kenyan investors.

During the period 1980 to 1984, Bank of America re-organized CBA, developing and installing Bank of America’s global systems and disciplines. In late 1984 Bank of America agreed to sell the majority of its share holding to local investors while retaining a minority interest and continuing to provide management to the bank via a management agreement. Bank of America eventually sold the remainder of its shares and CBA is now wholly Kenyan owned. Appendix 11 shows the performance of the bank for the last eight years from December 2001 to December 2008.

1.2 Statement of the problem
One of the greatest impact of the introduction of the World Wide Web (WWW) in 1980, was that it completely revolutionized some of the methods that had traditionally been used by many banks all over the world in conducting their businesses (Furst et al 2002). Since then many companies adopted the e-commerce in order to avoid being sidelined due to lack of being able to keep pace with the technological advancement.

There are a number of benefits that would accrue both to the customers and the commercial banks using Internet Banking instead of the traditional banking methods. The main advantages to the customer is that they would be able to access their accounts and conduct banking businesses 24 hours a day 7 days in a week thus avoiding bank ques, gain access to detailed banking information, able to transact on funds transfer, view account balances and download detailed information of various products offered by the bank. The convenience due to Internet banking would translate into more customer satisfaction and increased loyalty to the bank. Secondly there is an element of having a comparatively low cost on processing transactions using the Internet banking as compared to traditional banking processes. (Kurtas 2000) This would translate into higher profitability and would enable the banks with Internet banking have a competitive edge over those banks that do not offer the service (comptrollers handbook 1999).

Despite all these advantages, out of the current authorized 44 commercial banks in Kenya, only eight banks had adopted Internet banking as at December 2008. It is
therefore very clear that there was a need for a research project to analyze the main challenges facing the Internet banking in Kenya.

Since the inception of Internet Banking at the Commercial Bank of Africa Ltd in 2003, there have been several customers’ complaints, which portray major challenges that face Internet banking customers in Kenyan banks. One of the managerial objectives for the year was to have at least 40% of its customers subscribe on the Internet Banking but surprisingly less than 10% had subscribed by December 31, 2008. The research therefore sought to establish and analyze the challenges faced by banks and in particular Commercial Bank of Africa in the introduction and usage of Internet Banking by its customers.

1.3.0 Research Objectives

1.3.1 General Objective

The general objective of the study was to analyze the main challenges facing the Internet banking in Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were to:

i) Determine if the current security arrangement is a major challenge affecting Internet Banking.

ii) Determine the extent to which legal framework affect the operation of the Internet banking.

iii) Establish if the connectivity of the bank’s website and the customers is a major challenge facing Internet Banking.

iv) Determine if the information offered by the bank on Internet banking is well understood by the customers and their agents.

v) Determine if marketing is a major challenge facing Internet Banking.

vi) Ascertain if the turnaround time on problem resolution for Internet banking customers similar to the one is applied for traditional banking customers.
1.4 Research Questions
In order to achieve the objectives, the following research questions were made:

i) What are the major challenges that are associated with Internet Banking?

ii) Why do some customers prefer dealing face to face with bank employees rather than use the internet banking?

1.5 Significance of the Study
The research could be of high importance to all stakeholders in the banking industry. From the study, managers of Commercial Banks in Kenya could identify the major constraints facing Internet Banking and based on the recommendations, they would be able to improve on their service delivery. The customers too would also benefit because based on the recommendations, the banks are in a position to address some of the issues raised.

The study forms a basis for academicians to do a future research on the Internet banking. Future researchers need to carry out a detailed research on the challenges facing Internet Banking in rural areas in Kenya. The study findings could be used to sensitize the bank workers to increase their knowledge and skills in order to be more effective in handling issues relating to the Internet banking in future. Finally the Central Bank of Kenya may use this research project to assess if the general public are well protected and ensure that there are adequate controls so that this facility will not be used for money laundering purposes.

1.6 Scope of the Study
This study targeted the customers of Commercial Bank of Africa Limited in Nairobi and Mombasa. This is because due to the confidentiality nature of banking, it would have been very difficult to get the information of customers using Internet banking in other commercial Banks. The research study is a point of reference and a source of the Secondary data for further research on the challenges facing the Internet banking in Kenya.
1.7 Limitations of the Study
The major limitation of this study was lack of adequate resources and time to carry out a more detailed research. However much effort was channeled to reach many customers using the Internet banking with an aim of providing a better understanding on the challenges facing the Internet banking providers in Kenya.
CHAPTER TWO
LITERATURE REVIEW

2.1.0 INTRODUCTION
This chapter presents a review of the literature relating to challenges facing the Internet Banking. It defines the Internet Banking and the services available under this product. It also looks at the usage of Internet banking in various parts of the world. Finally it analysis different risks as highlighted by different authors.

2.1.1 The growth of the customer base using internet banking in Commercial Bank of Africa

Commercial Bank of Africa Limited started Internet banking in June 2003 and had a website cba@net established on its website cba.co.ke with high security features. When Commercial Bank of Africa introduced the product in 2003, the management had high expectations that most of its customers would subscribe and use this facility. The bank imposed a charge of Kshs.500 being the subscription fee and Kshs. 200= monthly fee to cater for the costs of documentations that was associated to the product. After much consideration on the benefits that the bank stood to reap from the product, the management waived all the charges relating to Internet Banking with effect from January 1, 2006 and currently this product is now absolutely free to all its customers.

2.1.2 CBA internet banking security

According to Turban, (2001), lack of security whilst making transactions online is reported to be the main barrier to customers shopping on-line. The risk of fraud on-line is very real. It is therefore crucial that any website should offers secure payment methods online and that any information passed between the customer and the bank over the internet is secure. With CBA Internet Banking Website, one can restrict access to certain accounts and control the movement of funds between accounts.

CBA Internet Banking Website has a strong focus on online security to ensure that the customers undertake on line transactions without intrusion. The bank has taken stringent measures to ensure that only the authorized customers can gain access to their accounts.
This is done by confirming the customer’s identity using a secret pin number when they transact at any of its service delivery centers. According to the website [www.cba.co.ke](http://www.cba.co.ke), some of the security measures that have been incorporated in the bank’s Internet Banking website to cater for the security include:

**User Authentication** – Customers are required to visit their branch of CBA to receive their profile number and PIN before they can start using CBA Internet Banking Website. This is to ensure that this information is handed over to the correct person. When a customer first uses CBA Internet Banking Website he or she must enter his or her profile and authenticate it by punching in their PIN. They can change their PIN at this point. CBA Internet Banking Website would terminate connections which are unattended for a defined period of time.

**Encryption** – all information exchanged between the bank and the customer is encrypted to protect it from unauthorized people. Encryption converts meaningful information into something meaningless to those without the authority to view it. CBA Internet Banking Website is based on a 128-bit SSL encryption key, the current highest level of security. The Secure Socket Layer (SSL) protects data transferred over http using encryption enabled by a server’s SSL certificate. An SSL authenticates the server and the client. They can therefore have a secure session that guarantees message privacy and message integrity. The 128-bit SSL gives the highest level of protection whenever one makes financial or confidential transaction over the Internet.

**Site Certificate** – To ensure that the online customers are at the genuine CBA Internet Banking Website location, they must make sure that they can see digital certificate. To use the facility always a customer must check that the certificate is valid. A digital certificate is an electronic file that authenticates a web site when doing business or other confidential transactions on the Web. It is issued by certification authority (CA) such as Entrust or Verisign. It contains amongst other things, the name, serial number, expiration dates and digital signature of the certification authority, so that the recipient can verify that the certificate is genuine. The digital certificates are used to prove that a website is the entity they claim to be.
Firewalls – This is a barrier between a sensitive internal network and the Internet. Firewalls protect its computers and the customer’s data. This is reinforced by other high security measures designed by experts and regularly reviewed by specialists.

2.2.0 Concept and Definitions of Internet Banking

According to Internet Banking comptrollers Handbook (1999), Internet Banking can be defined as banking service that allows customer to access and perform financial transactions on their bank accounts from their computers with Internet connection to banks web. The Internet is the physical network that links computers across the globe (Smith and Chaffey 2005). The increasing population of internet customers and demand for payments via Internet has an impact on banking services provided by many banks and has forced them to extend their banking services to customers on the internet (Furst et al 2002).

2.2.1 Basic Internet Banking Services

Basic Internet banking services refer to financial transactions commonly requested by customers via the Internet (Maurius and Dorothee 2000). The basic Internet services available by many banks for their customer may include inquiry about the bank balances, exchange rates, news and business information, bank transfer between accounts and payment of public utilities bills.

2.3 Internet Banking in Various parts of the World

Each country has unique characteristics of Internet banking. According to Goldfinger, (2001), the number of community banks in United States with a web presence was 66% by year 2000. Stegman (1999) argues that this is due to a reduction of the cost of dealing when compared to other forms of banking.

Internet banking is highly developed in U.K and Europe compared to less underdeveloped countries. Most banks continue to develop and launch new banking services on the internet in order to satisfy and meet their internet – based customers requirement in terms of time, ease of use, security and privacy in the U.K. Germany has been rated as the Nation that has the highest number of Internet banking services.
providers in Europe (Bluesky International Marketing, 1991). The Internet only online bank, Egg bank was one of the first success stories whose perceived threat led to street banks create their own Internet banking services (Goldfinger 2002). Nowadays many high street retail banks have entered into Internet banking in order to shelve the competition.

The general poor infrastructures in Africa curtail the usage of Internet. For example telecommunication services are expensive and unreliable and they cannot be used as expected. (The world bank, 1999). South Africa has the highest usage of Internet banking and according to a study by (Singh 2001) 31 % of the people with bank accounts uses Internet banking. According to the journal of Internet banking (2005), Internet banking in Nigeria is of global concern; this is because despite the fact that the Nigerians economy is a strong force in Africa the country has a high reputation for internet related frauds in the world.

There are very few people who use the internet in Kenya. According to Communication commission of Kenya website, there were less than 3 Million internet users in Kenya in 2006. Consequently there are very few people who use the Internet banking in Kenya. According to Mweu 2000 the explanation is that the key challenges facing Internet growth have been the costs of Internet services that have remained high in comparison to the income levels of Kenyans, availability and reliability of the local access network, little local content to invoke demand. ISPs have focused on Internet access rather than Internet services and applications, the licensing framework has not been in line with convergence of technologies and interconnection processes take long.

Since the inception of Internet in Kenya in 1993, there has been a gradual growth of the Internet banking in the country. Since then only some few banks that have ventured into the Internet banking. Among them are Citibank, National Bank Of Kenya, Stanchart, Barclays Bank, Commercial Bank of Africa, Equity bank, National Industrial Corporation, National bank and the latest is trans-National bank that introduced the product on march 2009.
2.4 Reasons why banks provide Internet banking

One of the main incentives that encourage banks to adopt new technology like Internet banking is not only to maintain operational efficiency but also achieving competitive advantages. Banks that exploit new technologies can gain competitive advantages through market share, customer satisfaction and overall business performance. For example Peffers (1991) argues that banks which were early adopters of Automated Teller Machines (ATM) gained significantly more than later adopters. According to Turban et al (2002) the business drivers for Internet banking includes.

**Additional Transaction Revenues**

Banks can derive revenues over and above their offline revenues by charging for online services and value added such as providing a portal for financial services linked to short and long term insurers, links to stock brokers, and links to foreign bank

**Savings from Reduced Transactional Costs**

On the Internet the customer serves himself and as such negates the need for frontline staff. Savings are gained from reductions in staff reduction in branch sizes, reduction in consumable costs such as paper, ink, cartridges and other stat

**Opportunities for Acquiring New Customers**

Customers looking for the flexibility and conveniences offered by Internet banking will be attracted to the banks providing the best services. Existing customers can be sold products that they do not have in their portfolio such as a credit card life insurance, home loans among others.

**Improved Ability to Retail Customers**

Studies indicate that online banks are the most profitable and wealthiest segment to banks (Mols, 1998, Robinson, 2000). Robinson 2000 argues that with the advanced technology, effective Customer’s Relationship Management (CRM) can be facilitated by the data acquired and captured on the corporate database. Products and services can be customized to meet the needs of the customer through the Internet banking.
According to (Moody 2002) the reason why banks provide Internet banking services are summarized as follows:

i) Cost savings.

ii) Increase customer

iii) Enable mass customization for e-banking services.

iv) Extend marketing and communication channels.

v) Explore and development of non-core business.

2.5 Internet banking challenges and risks

Most banks are reluctant to undertake Internet Banking after consideration of the risks associated in its implementation. According to the Internet Banking Comptrollers handbook (1999), there are several categories of risks. These include:

Cross border risk

Internet banking is based on technology that by very nature, is designed to extend the geographic reach of banks and customers. Such market expansion can extend beyond national borders. This causes various risks. Cross border transaction may lead to credit risk, since it is difficult appraise an application for a loan from a customer in another country compared to a customer from a familiar customer base.

Foreign Exchange risks

These are the risks when handling foreign currency transactions. Banks may be exposed to foreign exchange risks if they accept to transfer funds from a foreign currency account to a locally based account. This is because of the period when the banks refresh all the Internet dealings which normally takes 10 to 15 minutes. Within those few minutes the exchange rates might have moved to the detriment of the bank creating an exchange loss.

Transaction risk

A transactional risk is the risk that arises from fraud or errors. Attacks or intrusion attempts on banks computers and network systems are a major concern. Studies shows that systems are more vulnerable to internal attacks than external because the internal system users have knowledge of the systems and can easily intercept the customer’s password. Controlling access to bank’s system has become more complex in the internet
environment which is a public domain and attempts at unauthorized access could emanate from any source and from anywhere in the world with or without criminal intent. Attackers could be hackers, unscrupulous vendors, and disgruntled employees or even thrill seekers.

**Compliance risk**

Compliance risks are the risk that might arise from violation of or non-conformity with laws, rules and regulations prescribed practices or ethical standards. Compliance risk arises in situations where the laws or rules governing certain bank products or activities of the banks customer may ambiguous or untested. Given the relatively new nature of Internet Banking, rights and obligations in some cases are uncertain and applicability of laws and rules is uncertain or ambiguous, thus causing legal risk. Other reasons for legal risks are uncertainty about validity of some agreements formed via electronic media and law regarding customer disclosures and privacy protection. A customer inadequately informed about his rights and obligations, may not take proper precautions in using Internet banking products leading to disputed transactions, and unwanted suits against the bank. (Turban and King, 2003)

**System architecture and design**

Appropriate system architecture and control is an important factor in managing various kinds of operational and security risks. Banks may face the risk of wrong choice of technology, improper system design for example, if access to a system is based on only an IP address, any user can gain access by masquerading as a legitimate user by spoofing IP address of a genuine user. A system allowing communication with all protocol, say HTTP, FTP or Telnet is more prone to attack than designed to permit say, only HTTP. Many banks rely on outside service providers to implement, operate and maintain their Internet Banking systems. Although this may be necessary when banks do not have the required expertise, it adds to the operational risk. The service provider gains access to all critical business information and technical systems of the bank, thus making the system vulnerable. Banks should train its own staff and overdependence on these vendors should be avoided as much as possible.
Reputation risks

Banks highly esteems a positive public image. Reputation risk is the risk of getting significant negative public opinion, which may result in a critical loss of funding or customers. Such risks arise from actions which causes major loss of public confidence in the bank’s ability to perform critical functions. The main reason for this risk maybe system or product not working to the expectation of the customers, significant system deficiencies, and inadequate information to customers or lack of clear information about product use and problem resolution procedures, such situations may cause customer-discontinuing use of product or the services. Directly affected customers may leave the bank and others may follow if the problem is publicized.

2.6 Marketing of Internet Banking

Strauss, et al (2003) defines E-marketing as an application of a broad range of information technologies for transforming marketing strategies to create more customer value through more effective segmentation, targeting differentiation, and positioning strategies. The central idea of marketing is of matching between a company’s capabilities and the wants of customer in order to achieve the objectives of both parties (Mcdonald 2002). The marketing and sales activities are associated with purchases of services by end users and the inducements used to get them to make purchases. These activities include advertising and promotion, market research and planning (Porter 1985).

According to Kotler (1991) Marketing is about identifying what the customer’s wants and needs are, and providing the satisfaction in the form of products and services whist making a profit like any other product. For an effective marketing of the Internet banking, the banks should apply the four “P”s principle of the Marketing, which are product, price, place and promotion. Kotler (1991) outlines the use of these as:

Product

This is the firm’s offer to the market, which includes the product quality, design, features and branding. As a part of product offering training support can provide a competitive advantage in the globally competitive market place. The bank should ensure that the website is of high quality and friendly to use by its customers.
Price
This refers to the amount of money that customers pay for the product. For Internet banking the price would include having a computer and the connectivity fee to the Internet.

Place
This includes the various activities that the company undertakes to make the product accessible and available to the target audiences.

Promotion
This includes all the activities the company undertakes to communicate and promote its products to the target market. It is of paramount importance to ensure that advertisement of the Internet banking is done to create awareness to both the existing and potential bank customers.

2.7 Security Relating to Internet Banking
Despite growing demand for Internet Banking services there are many news stories that provide doubts about the security of Internet banking. (Courchane et al 2002). One of the main challenges facing Internet banking is that of security of data and confidentiality, both for the user and the bank. By the virtue of the nature of banking, absolute confidence in the privacy and security of data is a fundamental requirement. In addition to this challenge, Internet Banking providers are faced with other challenges such as Viruses like Trojan Horses and worms. Also there is a general lack of adequate legal framework in most countries.

As the consumer market has developed in the use of the Internet so has the sophistication of the criminal attacks. Following the recent Sumitomo Mitsui Bank incident in London, the banks seemed to be having serious security vulnerabilities. These case involved criminals who were able to penetrate the banks internal systems through the use of “Trojan horse” spyware software that captured relevant access control passwords. The “Trojan horse” program may implement mouse movement connection, screen logging, and interception of smart cards data flow connections to fraudulent sites and is able to
manipulate the main memory of the server. According to the report, the criminals were on the verge of transferring Sterling Pounds 220 Million. (Sumitomo Bank website)

According to the journal of Internet banking & Commerce (2005), lack of Security whilst making transactions online has been reported to be the main barriers to customer shopping on line. The paper outlines the problems and challenges facing the Internet banking in Nigeria. It shows that there are several fraud cases relating to the Internet banking and the latest dimensions taken by the perpetrators of this crime is the use of fake Internet bank sites. The paper outlines the following factors being responsible for the above situation.

i) Inordinate tolerance for corruption among Nigerian public and government agencies.
ii) Weakness of the existing Legislative/Judiciary institutions to make and enforce relevant laws on Cyber Crimes.
iii) Deteriorating quality of graduates in terms of professional values and ethics.
iv) Chronic unemployment among graduates.
v) Widening gap between the few rich and the many poor caused mainly by bad governance.

2.8 Loyalty and Trust of Customers

According to Aladwani (2001) Technologies changes are causing banks to rethink their strategies for services offered to customers for example powerful search engines and possibilities for immediate price comparisons on the internet have meant that internet banking customer are able to compare prices at ease. He argues that building of strong customer relationships is the only means for achieving a competitive advantage. Gaining a customer trust is a challenge for Internet banking and for further market penetration.

2.9 Chapter Summary

From the literature review it is clear that the impact of the Internet banking in the world differs depending on the level of technology. It would be important for countries with least technology to strive to achieve efficiency. The chapter also reviews the major factors that influence the impact of the Internet banking.
2.10 Conceptual Framework
The conceptual framework was based on the risks and the challenges facing internet banking as highlighted by the many authors in the literature review. Despite the numerous advantages to commercial banks offering Internet banking in Kenya as outlined in this chapter, the following can be summarized as the major constraints facing the Internet banking:

i) Security

ii) Issues with the connectivity.

iii) Lack of adequate legal framework relating to Internet Banking.

iv) Effective marketing strategies of Internet Banking.

v) Turn around time for resolving customer issues arising from the usage of Internet Banking.

vi) The complexity of the internet banking terms.

Figure 2.1: The Conceptual Framework Diagram

Security

Issues with the Connectivity

Legal framework

Marketing strategies of the product

Internet Banking Problem resolution procedures

Complexity of internet banking terms

Will affect

Internet Banking

Source: Researcher (2010)
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction
This chapter highlights the methods and procedures that the research adopted in carrying out the study. The chapter covers research design, population and sample; data collection methods research procedures and data analysis methods.

3.2. Research Design
This study was descriptive in nature. The type of research design employed was a case study of Commercial Bank of Africa Ltd. This type of research design enabled the researcher to collect in depth data in the population being studied and thus allowed the research to be more focused, thereby providing recommendations that are specific and relevant.

3.3 Population and Sample Design
3.3.1. Target Population
The Population under study was represented by the customers and the employees of Commercial Bank of Africa Ltd. The total population of the customers using the Internet Banking as at 31\textsuperscript{st} December, 2008 was 2,838 and the total number of the CBA employees was 384 adding to a total population of 3,222.

3.3.2 Sampling Techniques
Stratified sampling technique was used. This is a probability technique that calls for a division of the total population into appropriate strata. Stratified sampling gives various advantages such as increase in a sample’s statistical efficiency and provides adequate data for analyzing the various sub-populations and enables different research methods and procedures to be used in different strata (Cooper and Schindler, 2000).

3.3.3 Sample size
A sample size of 898 customers, which represent about 28\%, was used for this study. In order to determine the sample size of this study, reference was made to the calculation
method of Taro Yamane (Yamane T, 1973). In his book, he set up the following formula to determine the ideal sample size.

\[
N = \frac{n}{1+ne^2}
\]

When 
\(n=\) sample size 
\(N=\) population size 
\(e=\) the error of sampling 

The study allows the error of sampling on 0.05 so, the basic sample size can be calculated as follows

\[
n = \frac{N}{1+N(0.05)^2} = \frac{3222}{1+3222(0.05)^2} = 356
\]

From the above calculating, it could be concluded that the totals of sample size should be at least 356 and therefore a sample of 898 is quite justifiable. The distribution of the sample size is shown below in figure table 3.1

<table>
<thead>
<tr>
<th>Category</th>
<th>Population</th>
<th>Sample size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi corporate customers</td>
<td>1212</td>
<td>240</td>
<td>19.8</td>
</tr>
<tr>
<td>Mombasa corporate customers</td>
<td>445</td>
<td>80</td>
<td>17.9</td>
</tr>
<tr>
<td>Nairobi individual customers</td>
<td>925</td>
<td>190</td>
<td>20.5</td>
</tr>
<tr>
<td>Mombasa individual customers</td>
<td>256</td>
<td>50</td>
<td>19.5</td>
</tr>
<tr>
<td>Nairobi CBA employees</td>
<td>288</td>
<td>250</td>
<td>86.8</td>
</tr>
<tr>
<td>Mombasa CBA employees</td>
<td>96</td>
<td>88</td>
<td>91.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,222</strong></td>
<td><strong>898</strong></td>
<td><strong>27.8</strong></td>
</tr>
</tbody>
</table>

Source: Researcher (2010)

3.4 Data Collection Methods

The data was collected from primary and secondary sources. Information was collected through the distribution of questionnaires to the bank customers who have subscribed to the Internet banking. Customers were called and a brief explanation was given on phone. The mode of delivery of the questionnaire was discussed on phone, for those customers who wanted to collect the questionnaires from the bank, this was done with assistance of
the banks customer service staff at CBA Nairobi branches and CBA Mombasa branches. Other customers and the CBA employees’ questionnaires were sent by e-mail. The questionnaire contained both open ended and closed ended broad range of questions. Questions focused on Internet Banking. Secondary data was gathered from the library material, CBA Journals, reports and on the Internet. The information from the secondary sources was used to back-up the findings based on the research questions.

3.5 Research Procedures

The Researcher:

i) Had designed the questionnaire based on the research questions in the study, most of the questions were focused on the factors that would inhibit the growth of the Internet banking.

ii) Conducted a pilot test of questionnaire to three of the customers of Commercial Bank of Africa Ltd and two employees of the bank. The purpose of the pilot test was to enable the researcher review and revise the questionnaire where necessary.

iii) Called the customer and alerted them on the research project.

iv) Send the questionnaire to branches for distribution to the customers using the Internet banking.

v) Received most of the questionnaire sent both from the emails and the customer service desks.

3.6 Data Analysis Method

The data collected from the questionnaire was analyzed by the use of SPSS programme to show the various responses by CBA internet Banking customers and CBA employees. By noting the trend of answers of the questions posed in the questionnaires, the researcher was then able to analyze each response. The results were then presented in form of tables and pie charts for ease of interpretation.
CHAPTER FOUR
RESULTS AND FINDINGS

4.1 Introduction
This chapter presented the findings of the study based on the research questions. The result of the study was obtained from CBA customers and the employees of the bank. The result of the study was presented in three parts. The first part presents a brief overview of the respondents to the questionnaire. The second part addressed the findings based on the objectives of the study as a whole and the third part addressed other findings of the study.

4.2 Background Data of the Respondents
The study targeted 898 respondents, out of which 650 responded, giving a questionnaire return rate of 72.4%. The breakdown of the respondents is shown in Table 4.1.

Table 4.1 Total Number of Respondents

<table>
<thead>
<tr>
<th>Category of respondents</th>
<th>Questionnaires Sent</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Customers</td>
<td>320</td>
<td>233</td>
<td>72.8</td>
</tr>
<tr>
<td>Individual Customers</td>
<td>240</td>
<td>110</td>
<td>45.8</td>
</tr>
<tr>
<td>CBA Employees</td>
<td>338</td>
<td>307</td>
<td>90.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>898</td>
<td>650</td>
<td>72.4</td>
</tr>
</tbody>
</table>

Table 4.1 shows that out of the questionnaires sent, 90.8% of the CBA employees responded, 72.8% of the corporate customers and 45.8% of the individual customers responded. The total percentage of the respondent was 72.4%. It was noted that the lowest respondents were the individual customers. The likely reason is that many individual customers do not have access to e-mail address and some rarely visit the bank as most of their banking transactions are done through the ATMS.
Figure 4.1 shows the period of time that the employees had been working at CBA.

**Period that CBA employees worked**

![Pie chart showing the distribution of years worked by employees at CBA: 19% for less than 2 years, 35% for 2 to 5 years, and 46% for over 5 years.]

Figure 4.1 shows that 19.0% of the employees had worked at CBA for less than 2 years, 35.0% had worked for 2 to 5 years, while 46.0% had worked in the bank for over 5 years. This therefore shows that most of the employees had served in the bank long enough to be aware of the main challenges facing internet banking.

Table 4.2 shows the rate at which customers accessed Internet banking per month. This was in order to check the popularity of the site to the customers.

**Table 4.2 Frequency of Internet banking usage**

<table>
<thead>
<tr>
<th>Frequency of accessing Internet Banking Per Month</th>
<th>Corporate No.</th>
<th>Corporate %</th>
<th>Individual No.</th>
<th>Individual %</th>
<th>Bank Employees No.</th>
<th>Bank Employees %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3 times</td>
<td>17</td>
<td>7</td>
<td>52</td>
<td>47</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Between 3-8 times</td>
<td>29</td>
<td>13</td>
<td>41</td>
<td>37</td>
<td>39</td>
<td>13</td>
</tr>
<tr>
<td>Between 8-12 times</td>
<td>89</td>
<td>38</td>
<td>10</td>
<td>9</td>
<td>77</td>
<td>25</td>
</tr>
<tr>
<td>Over 12 times</td>
<td>98</td>
<td>42</td>
<td>7</td>
<td>7</td>
<td>189</td>
<td>61</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>233</strong></td>
<td><strong>100</strong></td>
<td><strong>110</strong></td>
<td><strong>100</strong></td>
<td><strong>307</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Table 4.2 reveals a contrasting finding on the usage of the Internet Banking. The most frequent users of Internet Banking are the CBA employees as 61% access the website more than 12 times a month. The corporate customers were noted to be frequent visitors to the site as 80% accessed the website over 8 times in a month. The findings reveal that frequency of visiting CBA internet website was very low for the individual customers as 84% of the respondents accessed the website less than 8 times in a month.

4.3 Challenges Related to Security Arrangements
One of the objectives of the study was to determine if the current security arrangement was a major challenge affecting Internet Banking. The researcher wanted to ascertain if the bank customers would be comfortable transacting at cyber cafes, if they were having fears of the system hackers and confirm if computer virus are a major challenge to Internet banking users.

4.3.1 Security when Transacting from Cyber Cafés
One of the key concerns in internet banking relates to transaction of business through cyber cafes. Cyber cafes are shops that have been opened where the general public can pay a certain amount to be able to browse in the Internet at a fee. In Kenya it is a common place where many people meet to browse.

Figure 4.2 below indicate that most customers were of the opinion that they would not be willing to do their Internet banking on cyber cafes,
Figure 4.2 shows that 89.8% of the customers were not willing to carry out any transaction from a cyber café and only 10.2% indicated that they would carry out their transactions from cyber cafes. This shows that most Internet banking customers are very cautious on the security concerns when doing the Internet banking transactions.

### 4.3.2 Vulnerability of CBA Website from Hackers

Another security concern facing internet banking is vulnerability from hackers. CBA employees were asked to indicate whether they felt the CBA website was free from hackers. Their response was as shown in Table 4.3.

<table>
<thead>
<tr>
<th>Responses</th>
<th>No. of employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website is free from hackers</td>
<td>215</td>
<td>70</td>
</tr>
<tr>
<td>Website is not free from hackers</td>
<td>65</td>
<td>21</td>
</tr>
<tr>
<td>Not sure</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>307</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
The table shows that 215 (70%) of the employees felt that CBA website is free from hackers, 65 (21%) felt that the site is not free from hackers, while 27 (9%) were not sure. From these responses it can be deduced that despite the security features of cba@net, there are still some employees who feel that the site is not absolutely free from hackers. This reveals a lot of concerns on the security arrangements by the customers. The 9% of the customers who were not sure if cba@net is free from hackers needs some conviction from the bank to confirm that site is free from hackers.

4.3.3 Vulnerability from Viruses

The researcher wanted to know if computer viruses was another potential risk that faces Internet banking customers. The bank employees were asked to rank if computer viruses, worms and Trojans offer high, moderate or low risk to internet banking. Table 4.4 shows their responses.

Table 4.4 Ratings of Threat Posed by Viruses to Internet Banking

<table>
<thead>
<tr>
<th>Threat ratings</th>
<th>No. of employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Risk</td>
<td>94</td>
<td>31</td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>98</td>
<td>32</td>
</tr>
<tr>
<td>Low Risk</td>
<td>115</td>
<td>37</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>307</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.4 shows that 94 (31%) of the employees were of the opinion that viruses posed a high risk to Internet banking, 98 (32%) rated the risk posed by viruses as moderate, while 115 (37%) rated the risk as low. These results reveal a mixed feeling of the bank employees on the risk posed by viruses to Internet banking. The most likely reason for this is the development of computer anti-virus programmes that are now available in Kenyan market. Customers who have not installed anti-virus programmes in their computers faces a very high risk of losing data while for those who have installed and constantly update the anti-virus programmes would face very low risk of the virus attacks. However, given the low level of technology uptake in developing countries (Hernandez & Mazzon, 2007), many customers could still feel vulnerable even with sophisticated security measures in place.
4.4 Effects of Legal Framework on the Operation of Internet Banking

The second objective of the study was to determine the extent to which legal framework affects the operation of Internet banking.

CBA Bank employees were asked whether they were aware of the Communication Bill 2008, which stands as a very instrumental bill in Kenyan law as it covers Internet banking crimes in Kenya. Table 4.5 shows the proportion of employees that were aware of the Bill.

Table 4.5 Awareness of Communication Bill 2008

<table>
<thead>
<tr>
<th>Awareness of communication Bill 2008</th>
<th>No. of employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not aware</td>
<td>226</td>
<td>74</td>
</tr>
<tr>
<td>Aware</td>
<td>81</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>307</td>
<td>100</td>
</tr>
</tbody>
</table>

The result shows that majority (74%) of the employees of the bank were not aware of the existence of Communication Bill-2008. This shows a general ignorance of the law relating to the banking services by the bank employees. This outlines a major challenge for Internet banking customers because they are supposed to seek legal guidance from the bank employees pertaining their rights when handling Internet banking transactions.

The bank employees were asked to rate the adequacy of the laws and regulations governing Internet banking in Kenya, to which they responded as shown in Figure 4.3.
Figure 4.3: Adequacy of Legal Framework

Figure 4.3 shows that 239 (78%) of the bank employees indicated that the legal framework is adequate, 53 (17%) indicated that the legal framework is not adequate, while 15 (5%) of the respondents were not sure. Based on this, it can be deduced that most of the bank employees felt that the current legal framework was adequate. The logical interpretation for this is that the Internet banking is a relatively new product in Kenyan market and there has been very few case studies relating to this field of study compared to products on traditional banking practices.

4.5 Challenges Related to Connectivity of Internet Banking

The third objective of the study was to establish if the connectivity of the bank’s website and the customers is a major challenge facing Internet Banking.

The bank customers were asked to rate the extent to which they experienced linkage problems, whereby they are not able to access the bank website (cba@net). Their responses on this were presented in Table 4.6.
Table 4.6 Frequency of website linkage failures

<table>
<thead>
<tr>
<th>Ratings of linkage failures</th>
<th>No. of customers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Not frequent</td>
<td>144</td>
<td>42</td>
</tr>
<tr>
<td>Never experienced</td>
<td>189</td>
<td>55</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>343</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.6 shows that 189 (55%) of the customers had never experienced any linkage problem, 144 (42%) indicated that linkage failure is not frequent, while 10 (3%) of the customers indicated that this was a frequent occurrence. These findings show that majority of the customers had not experienced connectivity problems. However, 45% of the customers had at some point experienced lack of connectivity to the cba@net website. This is a matter of concern because if this trend persists, then the customers might lose faith in the product to the detriment of the bank.

4.6 Challenges Related to the Information provided on Internet Banking

The researcher also wanted to determine if the information offered by the bank on Internet banking is well understood by the customers and their agents. He posed two questions. Firstly he wanted to know the number of customer’s agent who had complained on the complexity of terms used in Internet banking and the second question sought to find out if the customers found the terms confusing or straight forward.

4.6.1 Complexity of Internet Banking Terminology

One potential challenge related to internet banking information is complexity of internet banking terms. The customers were asked to indicate whether their agents had ever complained about the complexity of internet banking, to which they responded as shown in Table 4.7.
Table 4.7: Agents complaints on complexity of Internet banking terminology

<table>
<thead>
<tr>
<th>Proportion whose agents</th>
<th>No. of customers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complained</td>
<td>41</td>
<td>23</td>
</tr>
<tr>
<td>Not complained</td>
<td>132</td>
<td>77</td>
</tr>
<tr>
<td>Total</td>
<td>173</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.12 shows that out of the 173 customers who had agents, 23% indicated that their agents had complained about complexity of the terminology used in the Internet banking. 77% of the customer's agent had not complained about complexity of the terminology used on Internet banking.

Further, when the customers were asked if the terminologies used were clear or confusing, they responded as shown in Figure 4.4.

Figure 4.4: Clarity of terminology used for Internet Banking

![Pie chart showing the clarity of terminology used for Internet Banking]

Figure 4.4 shows that 86.8% of the customers using internet banking indicated that the terminology used was clear, 8.5% found the terminology confusing, while 4.7% found the terminology used very confusing. The results reveal that the terminologies used in the
Internet Banking were not complicated and hence this is not a major challenge in the Internet banking.

4.7 Marketing of the Internet Banking

The fifth objective of the study was to determine if marketing presents a challenge to Internet banking.

In order to analyze the effectiveness of marketing of the internet banking, the study sought to establish how the customers came to learn of Internet banking. The response was as indicated on Table 4.8 below.

Table 4.8: How customers learnt of Internet Banking

<table>
<thead>
<tr>
<th>Sources of information about internet banking</th>
<th>No. of customers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>From the account relations manager</td>
<td>134</td>
<td>39</td>
</tr>
<tr>
<td>From customer service bank</td>
<td>85</td>
<td>25</td>
</tr>
<tr>
<td>From the bank pamphlet</td>
<td>52</td>
<td>15</td>
</tr>
<tr>
<td>From other sources</td>
<td>72</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>343</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.8 shows that 39% of the customers learnt about Internet banking through the banks relationship managers, 25% came to learn of the product from the customer service desk, while 15% of the customers learnt of the product through the bank pamphlets. Another 21% of the customers indicated that they learnt of Internet banking from other sources such as notices written in monthly bank statements. These results indicate that only 64% of the bank customers learnt of Internet banking from the bank employees. This clearly indicates that there may be many bank customers who are not aware of the product. There is a great need for the bank to step-up the marketing of the Internet banking among its existing customer and its potential customers.
Table 4.9 shows the analysis how the customers viewed the pricing of Internet banking services.

**Table 4.9: Relative cost of Internet Banking compared to Traditional Banking**

<table>
<thead>
<tr>
<th>Ratings of Internet banking costs</th>
<th>No. of customers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very cheap</td>
<td>68</td>
<td>20</td>
</tr>
<tr>
<td>Cheap</td>
<td>250</td>
<td>73</td>
</tr>
<tr>
<td>Expensive</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Very expensive</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>343</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.9 shows that 73% of the customers rated the cost of Internet banking as cheap, 20% rated it very cheap and only 7% indicated that the Internet banking was either expensive or very expensive. It is clear from the findings that majority of the customers were satisfied with the pricing of the Internet banking.

When the bank employees were asked if they consider marketing of Internet banking as aggressively done, they responded as shown in Table 4.10.

**Table 4.10: Rating of marketing strategies used on Internet Banking**

<table>
<thead>
<tr>
<th>Ratings</th>
<th>No of employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>209</td>
<td>68</td>
</tr>
<tr>
<td>Poor</td>
<td>83</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>307</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.10 indicates that 68% of the employees rated the marketing strategies employed as satisfactory, 27% rated the strategies as poor, while 5% rated the marketing strategies employed as excellent. These results reveal a weakness in the strategies used to market the product and this calls for the bank to do a soul searching to improve on the marketing of the product.
4.8 Challenges Related to Time taken to address Customer Complaints

The sixth study objective was to ascertain if the turnaround time on problem resolution for Internet banking customers was similar to the one applied for traditional banking products.

When the customers were asked if their complaints regarding Internet banking issues were attended faster than in traditional banking, their responses were as shown in Table 4.11.

Table 4:11 Customer turnaround time for problem resolution

<table>
<thead>
<tr>
<th>Response</th>
<th>No. of customers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faster</td>
<td>244</td>
<td>71</td>
</tr>
<tr>
<td>Similar</td>
<td>75</td>
<td>22</td>
</tr>
<tr>
<td>Slower</td>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>343</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.11 shows that 71 of the customers indicated that compared to face-to-face banking, problem resolution arising from Internet banking was faster, 22% were of the opinion that it was similar, while only 7% felt that problem resolution for Internet banking was slower. The results in the table showed that majority of the customers felt that problem resolution for Internet banking was faster than for face-to-face banking. This shows that the customer resolution procedure is not a big challenge facing Internet banking.

Table 4:12 shows that the employees’ response when asked for a comparison of the time taken to address Internet banking customers complains when compared to the traditional banking.
Table 4.12 Comparison of problem resolution for Internet versus face-to-face banking

<table>
<thead>
<tr>
<th>Response</th>
<th>No. of employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better</td>
<td>279</td>
<td>91</td>
</tr>
<tr>
<td>Similar</td>
<td>28</td>
<td>9</td>
</tr>
<tr>
<td>Worse</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>307</td>
<td>100</td>
</tr>
</tbody>
</table>

The table reveals that 91% of the employees were of the opinion that compared to face-to-face banking, problem resolution on Internet banking was better in terms of time taken to address issues, while 9% indicated that it is the same for both banking models. This shows that majority of employees, just like the case for customers, indicated a preference for internet banking when it comes to addressing customer complaints.

The bank employees were asked to compare the time taken to process transactions through Internet banking and traditional banking, to which they responded as shown in Table 4.13.

Table 4.13 Comparison of time taken to process transactions through internet and Traditional banking models

<table>
<thead>
<tr>
<th>Ratings</th>
<th>No. of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet banking is better</td>
<td>262</td>
<td>85</td>
</tr>
<tr>
<td>Both are the same</td>
<td>29</td>
<td>10</td>
</tr>
<tr>
<td>Internet banking is worse</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>307</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.13 reveals that the majority (85%) of the bank employees were of the opinion that the time taken to process transactions through the Internet Banking was better in comparison to the time taken to process transactions through the traditional banking systems. On the other hand, 10% of the employees reported that there was no difference, while only 5% employees felt that the time taken to process transaction on traditional method is faster than on the internet banking.
The analysis results presented in this section show that majority of the customers and employees were of the opinion that Internet banking was preferable to the traditional face-to-face banking in terms of time taken to resolve customer complaints and the time taken to process transactions. This therefore shows that time taken to process instructions and resolution of complaints is not a major challenge facing Internet banking.
CHAPTER FIVE

DISCUSSION CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
This chapter provides a summary, conclusion, recommendations and areas for further research.

5.2 Summary
The purpose of the study was to analyze the challenges facing the Internet banking in Kenya. The type of research design was a case study on Commercial Bank of Africa Ltd. The population consisted of the customers and the bank employees. Stratified sampling techniques were used to determine the sample element. Data was collected by use of questionnaires, which were sent to the respondents either via-email or through the customer service desks at the bank branches. Data analysis was by the use of descriptive statistics and it was presented by use of tables and pie charts. Given below is a summary of the key study findings.

On challenges related to risks of Internet banking, the study established that 89.8% of the customers were not willing to carry out any transaction from a cyber café and only 10.2% indicated that they would carry out their transactions from cyber cafes. This was an indication that most Internet banking customers are very cautious on the security concerns when doing the Internet banking transactions. Majority (70%) of the employees felt that CBA website is free from hackers, 21% felt that the site is not free from hackers, while 9% were not sure. This meant that despite the security features of cba@net, there were still some employees who felt that the site is not absolutely free from hackers. The study also established that 31% of the employees were of the opinion that viruses posed a high risk to Internet banking, 32% rated the risk posed by viruses as moderate, while 37% rated the risk as low.

Regarding the legal framework governing Internet banking, the study established that majority (74%) of the employees of the bank were not aware of the existence of Communication Bill-2008. 78% of the bank employees indicated that the legal
framework is adequate, 17% indicated that the legal framework is not adequate, while 5% were not sure.

On challenges related to connectivity of Internet banking, it emerged that 55% of the customers had never experienced any linkage problem, 42% indicated that linkage failure was not a frequent phenomenon, while 3% of the customers indicated that this was a frequent occurrence. Of the customers who had agents, 23% indicated that their agents had complained about complexity of the terminology used in the Internet banking, while 77% of the customer’s agent had never complained.

The study established that 86.8% of the customers using internet banking found the terminology used to be clear, 8.5% found the terminology confusing, while 4.7% found the terminology used very confusing. On marketing, it was established that 39% of the customers learnt about internet banking through the banks relationship managers, 25% came to learn of the product from the customer service desk, 15% learnt of the product through the bank pamphlets, while 21% of the customers learnt of Internet banking from other sources such as notices written in monthly bank statements. Majority (73%) of the customers rated the cost of internet banking as cheap, 20% rated it very cheap and only 7% indicated that the Internet banking was either expensive or very expensive.

On time taken to resolve customer complaints, the study established that majority (71%) of the customers were of the opinion that compared to face-to-face banking, problem resolution arising from Internet banking is faster, 22% were of the opinion that it is similar, while only 7% felt that problem resolution for Internet banking is slower. Similarly, 91% of the employees were of the opinion that compared to face-to-face banking, Internet banking customer complains were addressed faster, while 9% indicated that it was the same for both banking models. The same case applied to time taken to process transactions, whereby 85% of the bank employees were of the opinion that the time taken to process transactions through the Internet Banking was better in comparison to the time taken to process transactions through the traditional banking systems.
5.3 Discussion of Findings

5.3.1 General Discussion
It was surprising to note that 74% of the bank employees were not aware of the communication bill 2008 which was very crucial in protecting the bank against most crimes performed on the internet. This portrayed a general lack of knowledge of the bank employees on the Internet banking products.

5.3.2 Issues with Connectivity
The result from the respondent data revealed that the bank site should provide proper website to customers and should be up and running at all time. It is quite disheartening if a customer is unable to do an internet banking transaction, because he is unable to get connection to bank website. This could involve heavy loses to the customer and would create a bad image of the bank.

5.3.3 Legal Framework
Internet banking is relatively new bank product in the market; as such there are very few case laws for laying a good precedence in this area. However 78% of the employees from the bank were of the view that the legal framework in Kenya is adequate. Both the bank customers and the employees of the bank ought to make effort to have an idea of the rights and obligation set out by the Communication Bills Act 2008.

5.3.4 Marketing Strategies
For any product to succeed in the market, effective marketing should be applied. According to the respondents from the bank employees, 27% felt that marketing of the product is poor. More aggressive marketing by the bank ought to be applied and sensitize more customers on the benefits that they stand to gain by subscribing for the Internet banking. Since most customers who responded to the questioner viewed the cost of internet banking as cheap, this massage could be used by the banks in its advertisements campaigns.
5.3.5 Internet Banking Problem Resolution
71% of the respondents indicated that their issues were resolved faster than the traditional banking. The reason behind this is that transactions tend to be handled faster online as the customers avoid the bank queues to have his or her problems attended to. However the bank should identify reason for the 22% of the customers who responded negatively on the internet banking problem resolution and improve.

5.3.6 Security
The result revealed security as a very important issue for customers. The results of the respondents correspond to the literature review on prior research done on internet banking security. Efforts should be taken to illustrate that there is confidentiality and integrity of online transacting so that the customer feels that he or she is safe to transact over internet.

5.3.7 Complexity of Internet banking terms.
The bank should strive to use simple clear terms on the internet banking bearing in mind that customers have different levels of education and on technological know-how.

5.4 Conclusions
The objective of this study was to analyze the challenges facing Internet banking in Kenya the following are the conclusion on the findings and discussion.

The result from respondents identified security concern as a major challenge for Internet banking in Kenya. Most of the bank employees highly recommended tighter controls on the issuance of password and pin numbers because some dishonest employees might use any loop holes available to defraud the customer and the bank.

Contrary to the perception on the literature review, the study showed that lack of adequate legal framework, complexity of Internet banking terms and Internet banking problem resolution are not a major hindrance of the internet banking.
Internet banking is a relatively new product when compared to some other banking products in Kenya, consequently there are fewer case studies related to this area. This coupled with the literature review, means that the legal framework cannot be ruled out as a major future challenge of Internet banking in Kenya.

5.5 Recommendations

The study revealed that Internet banking clearly offers opportunities to banks in Kenya. Despite the challenges facing internet banking, commercial banks can translate them into opportunities given the right approach to strategy. Bank managers must in additional to short-term strategy, take long term strategies as the internet infrastructure is anticipated to expand with the introduction of the fibre optical cable that have been connected in Kenya.

The following recommendations were made based on the findings and conclusion of the study.

(i). Many potential customers who cannot purchase personal computers and do not have internet connectivity can be encouraged to acquire them through special bank loans on reasonable small monthly deductions.

(ii). In order to facilitate effective controls, the banks must ensure that there is a well outlined procedure on the way internet banking pin numbers are issued and delivered to the customers. The bank could also offer the customers advices on effective antivirus kits. Further the bank should always keep on improving its security on internet banking website. This is because we are living at an age where technology is changing rapidly.

(iii). Following the results that several customer had experienced a linkage problem in accessing the cba@net website, the bank must look for a reliable internet service providers to avoid frequent link disconnection of the Internet banking which greatly inconveniences the customers.
(iv). There should be frequent training sessions for the bank employees on the internet banking. This is of paramount importance to the bank employees who handles complaints of the Internet banking customers.

(v) The bank should weigh the benefit that would accrue from more customers subscribing in the Internet banking compared to the marketing costs. Being a relatively new bank product, the general public might be having very little information about Internet banking. The bank should disseminate this information which might expel the hidden fear of joining internet banking.

5.6 Suggestions for Future Research

Internet banking is a new technology in Kenya. There are plenty of issues which influence the customer’s intentions to adopt Internet banking services. In this study the researcher explored the challenges facing Internet banking in Kenya, a case of Commercial Bank of Africa. More studies should be conducted to find out the challenges facing Internet banking drawing samples from different banking institutions. Also a deeper analysis of challenges facing Internet banking in the rural areas would be beneficial in order to discover how such challenges influence banks and customer decisions in the rural areas. A study could be conducted to find out the factors that influence customers’ decisions either to accept or not accept Internet banking services.
REFERENCES


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Regulating Internet Banking in Nigeria: Problems and challenges Part 11


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APPENDIX 1:

Seven year financial summary of CBA

Performance record of Commercial Bank of Africa Ltd for the last five years to December 2005.

Five Year Review:

### FIVE YEAR FINANCIAL SUMMARY

The following extracts from the consolidated financial statements are stated in thousands of Kenya Shillings (Kshs 000) except where otherwise indicated.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Income</td>
<td>2,479,950</td>
<td>1,501,428</td>
<td>1,776,722</td>
<td>1,787,509</td>
<td>1,891,776</td>
</tr>
<tr>
<td>Operating Profit before exceptional items and impairment losses</td>
<td>640,449</td>
<td>459,747</td>
<td>696,220</td>
<td>475,934</td>
<td>497,398</td>
</tr>
<tr>
<td>Exceptional items</td>
<td>-186,749</td>
<td>0</td>
<td>-12,246</td>
<td>-53,008</td>
<td>0</td>
</tr>
<tr>
<td>Operating profit before impairment losses</td>
<td>453,700</td>
<td>459,747</td>
<td>683,974</td>
<td>422,926</td>
<td>497,398</td>
</tr>
<tr>
<td>Impairment losses</td>
<td>-84,322</td>
<td>-22,655</td>
<td>-115,848</td>
<td>-40,780</td>
<td>17,521</td>
</tr>
<tr>
<td>Profit before income tax expense</td>
<td>369,378</td>
<td>437,092</td>
<td>568,126</td>
<td>382,146</td>
<td>514,919</td>
</tr>
<tr>
<td>Profit for the year</td>
<td>238,251</td>
<td>297,127</td>
<td>396,717</td>
<td>250,213</td>
<td>352,955</td>
</tr>
<tr>
<td>Dividends - declared and proposed</td>
<td>0</td>
<td>-65,000</td>
<td>-300,000</td>
<td>-250,000</td>
<td>-175,000</td>
</tr>
<tr>
<td>Retained profit for the year</td>
<td>238,251</td>
<td>232,127</td>
<td>96,717</td>
<td>213</td>
<td>177,955</td>
</tr>
<tr>
<td>Earnings per share - basic and diluted</td>
<td>Kshs 2.38</td>
<td>Kshs 2.97</td>
<td>Kshs 3.97</td>
<td>Kshs 2.50</td>
<td>Kshs 3.53</td>
</tr>
<tr>
<td>Dividends per share</td>
<td>0</td>
<td>Kshs 1.30</td>
<td>Kshs 6.00</td>
<td>Kshs 5.00</td>
<td>Kshs 3.50</td>
</tr>
<tr>
<td>Number of employees</td>
<td>336</td>
<td>272</td>
<td>257</td>
<td>253</td>
<td>259</td>
</tr>
<tr>
<td>Customer loans and advances (gross)</td>
<td>11,973,126</td>
<td>5,654,342</td>
<td>4,631,101</td>
<td>5,229,301</td>
<td>4,893,625</td>
</tr>
<tr>
<td>Total deposits (customers and banks)</td>
<td>26,537,029</td>
<td>17,787,739</td>
<td>16,069,633</td>
<td>14,215,951</td>
<td>13,995,844</td>
</tr>
<tr>
<td>Shareholders' equity</td>
<td>2,286,181</td>
<td>1,962,408</td>
<td>1,959,938</td>
<td>1,683,221</td>
<td>1,776,117</td>
</tr>
<tr>
<td>Total assets</td>
<td>29,538,662</td>
<td>20,189,383</td>
<td>18,396,440</td>
<td>16,418,042</td>
<td>16,081,860</td>
</tr>
</tbody>
</table>

Source: CBA Annual Report and financial statements.
Performance record of Commercial Bank of Africa Ltd for the last three years to December 2008.

Three Year Review:

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2007</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Income</td>
<td>5,766,202</td>
<td>4,167,029</td>
<td>2,370,643</td>
</tr>
<tr>
<td>Operating Profit before</td>
<td>2,037,517</td>
<td>1,491,192</td>
<td>1,155,810</td>
</tr>
<tr>
<td>exceptional items and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>impairment losses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exceptional items</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Operating profit before</td>
<td>2,037,517</td>
<td>1,491,192</td>
<td>1,155,810</td>
</tr>
<tr>
<td>impairment losses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impairment losses</td>
<td>-272,119</td>
<td>-74,703</td>
<td>186,776</td>
</tr>
<tr>
<td>Profit before income tax</td>
<td>1,799,475</td>
<td>1,464,113</td>
<td>1,376,167</td>
</tr>
<tr>
<td>expense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit for the year</td>
<td>1,353,561</td>
<td>1,062,325</td>
<td>1,018,817</td>
</tr>
<tr>
<td>Dividends -declared and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>proposed</td>
<td>-293,501</td>
<td>-491,050</td>
<td>-150,000</td>
</tr>
<tr>
<td>Retained profit for the year</td>
<td>1,060,060</td>
<td>571,275</td>
<td>868,817</td>
</tr>
<tr>
<td>Earnings per share - basic and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>diluted</td>
<td>Kshs 11.9</td>
<td>Kshs 9.15</td>
<td>Kshs 9.17</td>
</tr>
<tr>
<td>Dividends per share</td>
<td>Kshs 2.60</td>
<td>Kshs 4.35</td>
<td>Kshs 1.33</td>
</tr>
<tr>
<td>Number of employees</td>
<td>416</td>
<td>407</td>
<td>324</td>
</tr>
<tr>
<td>Customer loans and advances</td>
<td>29,290,440</td>
<td>17,681,671</td>
<td>14,621,043</td>
</tr>
<tr>
<td>(gross)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total deposits (customers and</td>
<td>48,245,739</td>
<td>36,101,131</td>
<td>32,667,150</td>
</tr>
<tr>
<td>banks)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shareholders' equity</td>
<td>5,181,802</td>
<td>4,719,822</td>
<td>3,717,245</td>
</tr>
<tr>
<td>Total assets</td>
<td>55,201,590</td>
<td>42,010,559</td>
<td>37,437,907</td>
</tr>
</tbody>
</table>

Source: CBA Annual Report and financial statements
APPENDIX 11: WORK PLAN

The project is scheduled to go on for 12 weeks with effect from the October 2009 to January 2010 as presented in the table below:

<table>
<thead>
<tr>
<th>Duties</th>
<th>Date</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.) Planning the study.</td>
<td>October</td>
<td>2 weeks</td>
</tr>
<tr>
<td>ii.) Data Collection</td>
<td>November</td>
<td>4 weeks</td>
</tr>
<tr>
<td>iii.) Data Analysis</td>
<td>December</td>
<td>4 weeks</td>
</tr>
<tr>
<td>iv.) Final draft Preparation</td>
<td>January</td>
<td>2 weeks</td>
</tr>
<tr>
<td>v.) Final draft, Printing and binding</td>
<td>January 2010</td>
<td>2 weeks</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>14 weeks</strong></td>
</tr>
</tbody>
</table>
### APPENDIX III: BUDGET

<table>
<thead>
<tr>
<th>Activity</th>
<th>Amount (Kshs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typing and printing</td>
<td>8,000</td>
</tr>
<tr>
<td>Stationery</td>
<td>5,000</td>
</tr>
<tr>
<td>Hiring research assistant for Mombasa customers</td>
<td>2,000</td>
</tr>
<tr>
<td>Library research and internet access</td>
<td>5,000</td>
</tr>
<tr>
<td>Photocopies</td>
<td>2,000</td>
</tr>
<tr>
<td>Telephone calls</td>
<td>3,000</td>
</tr>
<tr>
<td>Binding of the final reports</td>
<td>2,000</td>
</tr>
<tr>
<td>Contingencies</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32,000</strong></td>
</tr>
</tbody>
</table>
INTRODUCTORY LETTER

Date: -------------------------

Dear respondent,

RE: RESEARCH PROJECT

I am a postgraduate pursuing executive MBA at Kenyatta University, school of business, Department of Accounting and Finance. I am carrying out a research on “The challenges facing the Internet Banking in Kenya: A case of Commercial bank of Africa Ltd”.

This questionnaire is aimed at eliciting information that will be useful in the above-mentioned research. I am pleased to inform you that, you have been selected as one of the respondents in this study. The information supplied will be used strictly for academic purposes and will be treated with utmost confidentiality. Your cooperation will be highly appreciated.

Thank you,

David N. Gaitungu
P.O. Box 30437 00100
Cell phone: 0721-433911
E-mail address: dngaitungu@cba.co.ke
APPENDIX V
QUESTIONNAIRE FOR CBA EMPLOYEES

(1) How long have you worked for Commercial Bank of Africa.
☐ Over 5 years
☐ 2 to 5 years
☐ Less than 2 years

(2). How frequent do you use Internet banking per month?
☐ Less than 3 times
☐ 3 to 8 times
☐ 8 to 12 times
☐ Over 12 times

(3) How can you describe the Internet Banking compared to traditional banking on the following aspects? (Kindly tick the evaluation box)

<table>
<thead>
<tr>
<th>Time to process entries</th>
<th>Better</th>
<th>Same</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time taken to address customer complaints</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(4) Given the security features of cba@net. Do you think the website is free from hackers? (Computer experts who can access your information without your knowledge)
☐ Yes
☐ No
☐ Not sure

(If No please explain)
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

(5) Are you aware of the Communication Bill 2008 that was passed recently?
☐ Yes
☐ No
(6) How would you rate the laws and regulations of Internet banking in Kenya?
☐ Adequate
☐ Inadequate
☐ I am not sure

(7) Commercial banks are aggressive when marketing their products. Would you rate the marketing of Internet Banking as?
☐ Excellent
☐ Satisfactory
☐ Poor

(8) Rank the following risks associated with Internet Banking product as high risk, moderate risk or low risk. (Tick on each case)

<table>
<thead>
<tr>
<th>Risk</th>
<th>High risk</th>
<th>Moderate Risk</th>
<th>Low risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending via Internet for Internet banking customers.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unauthorized personnel gaining access to the system.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal matters that involves the legal interpretation from another country.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer viruses, worms and Trojan hose as a threat to Internet Banking</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(9) Do you feel that Commercial Bank of Africa is now better placed than your competitors who do not offer Internet banking?
☐ Yes
☐ No
☐ Not sure
What changes would you recommend to Commercial Bank of Africa in areas that you feel need to be improved on their Internet banking services?
APPENDIX VI
QUESTIONNAIRE FOR CBA CUSTOMERS

(1). What type of internet account do you hold with CBA
☐ Personal
☐ Company
☐ Both personal and company account

(2). How long has your company been in existence since registration?
☐ Less than a year
☐ Between 1 to 5 years
☐ Over 5 years
☐ Not applicable

(3) Do you have an agent or agents who do the Internet banking on your behalf?
☐ Yes
☐ No

(4) Do your agents complaint about the complexity of Internet banking?
☐ Yes
☐ No
☐ Not applicable

(5) Are the terminology used in Internet banking confusing? (Tick one)
☐ Very confusing
☐ Confusing
☐ Sometimes confusing
☐ Clear

(6) How would you rate the cost of using Internet banking compared to face-to-face Banking?
☐ Very Cheaper
☐ Cheap
☐ Expensive
☐ Very expensive
(7) How did you learn of the CBA’s Internet banking?
- From the customer service desk at my branch
- From my account Relations manager
- From the bank’s pamphlets
- From other sources (Please state)

(8) Would you make a transaction on Internet banking at a cyber café?
- Yes
- No (If your answer is No please explain why)

(9) Sometimes there may be a linkage problem, where you are not able to access cba@net. How can you rate such linkage problem at cba@net.
- Frequent
- Not frequent
- Have never experienced any linkage problem

(10) How would you rate the problem resolution arising from using Internet banking compared to face-to-face Banking?
- Slower
- Similar
- Faster

(11) Rank the following as very important; important or not important (Kindly tick the evaluation box)

<table>
<thead>
<tr>
<th>Professionalism on customer services complaints related to internet banking.</th>
<th>Very important</th>
<th>Important</th>
<th>Not important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of foreign currency transactions on cba@net</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is privacy in internet banking</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What changes would you recommend to Commercial Bank of Africa in areas that you feel need to be improved on their Internet banking services?