

**OPPORTUNITIES AND CHALLENGES OF ELECTRONIC
BANKING ON ORGANIZATIONAL PERFORMANCE
OF INDIGENOUS BANKS
IN RWANDA**

A Thesis

Presented to Kampala International
University College of Higher Degrees
And Research (CHDR)
Kampala, Uganda

In Partial Fulfillment of the Requirements for the Degree
Master of Business Administration

By:


MAZIMPAKA Norbert
MBA/36299/113/DU
SEPTEMBER, 2012



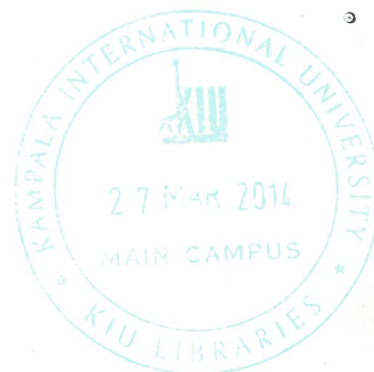
DECLARATION A

"This thesis is my original work and has not been presented for a degree or any other academic award in any university or institution of learning".

Name and Signature of Candidate


MAZIMPAKA NORBERT

Date.....25/15/2012.....

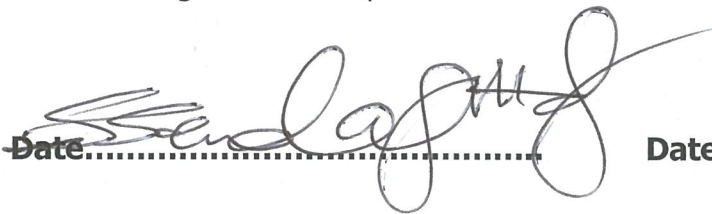


DECLARATION B

"We confirm that the work reported in thesis was carried out by the candidate under our supervision".

Name and Signature of Supervisor

Name and Signature of Supervisor

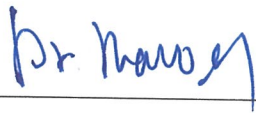

Date.....


Date..... 25/10/2012

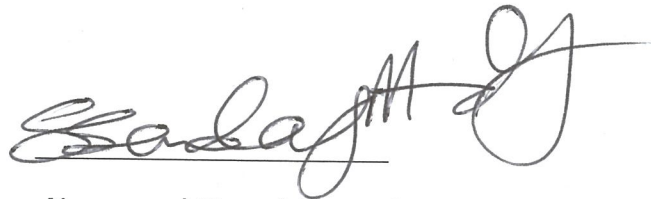


APPROVAL SHEET

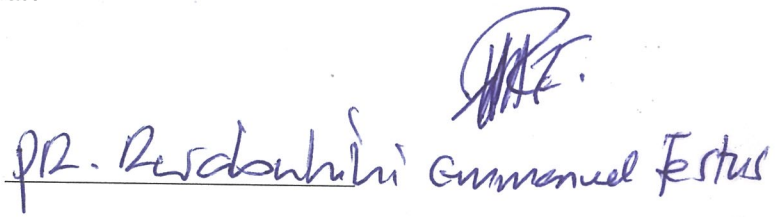
This Thesis entitled "Opportunities and Challenges of Electronic Banking on organizational performance of Indigenous banks in Rwanda" prepared and submitted by MAZIMPAKA NORBERT in partial fulfillment of the requirements for the degree of Master of Business Administration has been examined and approved by the panel on oral examination with a grade of PASSED.



Name and Sig. of Chairman



Name and Sig. of Supervisor



Name and Sig. of Panelist

Name and Sig. of Panelist

Name and Sig. of Panelist

Date of Comprehensive Examination: _____

Grade: _____

Name and Sig of Director, CHDR

Name and Sig of DVC, CHDR

DEDICATION

To my beloved wife; NTISIGABAYO Zelda, Children; IGIRANEZA NEZERWA BORIS, IRANEZEZA IGUKUNDA CHRIS and Mr. NKURIKIYINKA JMV, to my brothers and Sister for their love and support this study is dedicated.

ACKNOWLEDGEMENT

The researcher's gratitude goes to God Almighty The merciful and Provider.

Secondly, I express my sincere appreciation to Kampala international university for availing me with a good learning environment; the researcher's heartfelt gratitude goes to the DVC of CHDR, Dr. Novembrieta R. sumil, PhD for her professional guidance and intellectual support to complete this study.

Special thanks to the researcher's Supervisor Dr.Ssendagi Muhammad for encouragement, professional guidance and intellectual support to complete this report.

Also, the researcher's heartfelt gratitude goes to members of the panel for accepting to examine and evaluate this study.

The researcher would also like to appreciate NTISIGABAYO Zelda, IGIRANEZA NEZERWA Boris, IRANEZEZA IGUKUNDA Chris, NIYONAMBAZA Zelpha, MUTUYIMANA Mediatrice, ZILIMABAGABO Marcel, NAYIGIZENTE Ignace, TWIZEYIMANA Prince, NGENDAHIMANA Alphonse, MUJAWIMANA Claudine ,MUTEZIMANA Francois ,NTIRIVAMUNDA Basil, BIRUSHYABAGABO Jean de Dieu ,MUGISHA SAM and NKURIKIYINKA JMV for showing him their love and support throughout the period of his study.

I would also like to thank the respondents who returned the questionnaires and those who were cooperative to me.

Special thanks also go to National bank of Rwanda and Development Bank of Rwanda for their support and provision of necessary information for this study.

The researcher is indebted to Mr. NSENGIYUMVA JMV, Uwera valentine ,TUYIZERE Fabrice, Masengesho Pontien and my colleagues in the academic world for their encouragement we shared. I thank you!

May God bless you all

ABSTRACT

The study was carried out on "opportunities and challenges of electronic banking on organizational performance of indigenous banks in Rwanda". This identified the opportunities these banks have identified in Rwanda and various challenges they face in their endeavors to provide efficient and effective services and products through electronic banking. The Data was collected using structured questionnaires and interview schedules. The population size was 150 and the sample size was 109. Data collected was analyzed using SPSS and inferential Statistics. The study found out that the benefits of e banking into two that is, opportunities to the clients and opportunities to the banks .To the Banks: The e- Banking reduced the cost of wages of tellers and back office personnel; it has resulted into dramatic productivity gains and Reduction in repetitive cost. Improved speed in receiving and processing instruction. Reduced crowding in banking halls .To the Clients: Enjoy Direct Deposit, Ease of Account Access and Convenience, Customers can carry out their transaction without waiting in a line for service and It saves costs for stationary and cheque books E-Banking also makes it easier for customer to compare banks services and products hence give clients a variety of choices to make.The study found out also the challenges of e banking: Poor Telecommunication Infrastructure, Security Concerns, and Poor Internet Accesses.The study concluded that E-banking has become a necessary survival weapon and is fundamentally changing the banking industry worldwide. Today, the click of the mouse offers customers banking services at much lower cost and also empowers them with unprecedented freedom in choosing vendors for their financial services need.

TABLE OF CONTENTS

Preliminaries	
Declaration A	i
Declaration B	ii
Approval sheet	iii
Dedication	iv
Acknowledgement	v
Abstract	vi
Table of content	vii
List of tables	x
Acronyms	xi

Chapter		Page
One	THE PROBLEM AND ITS SCOPE	1
	Background of the Study	1
	Statement of the Problem	2
	Purpose of the Study	3

	Research Objectives	3
	Research Questions	4
	Null Hypothesis	4
	Scope	4
	Significance of the Study	5
	Operational Definitions of Key Terms	6
Two	REVIEW OF RELATED LITERATURE	9
	Concepts, Ideas, Opinions from Authors/Experts	9
	Theoretical Perspectives	23
	Related Studies	25
Three	RESEARCH METHODOLOGY	28
	Research Design	28
	Research Population	28
	Sample Size	28
	Sampling Procedure	29
	Research Instruments	30
	Validity and Reliability of the Instrument	31
	Data Gathering Procedures	31

	Data Analysis	32
	Ethical Considerations	33
	Limitations of the Study	33
Four	PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA	35
Five	FINDINGS, CONCLUSION AND RECOMMENDATIONS	47
	Findings	47
	Conclusion	50
	Recommendation	51
	AREA FOR FURTHER RESEARCH	52
	REFERENCES	54
	Appendices	57
	Appendix I Transmittal Letter	57
	Appendix II - Clearance from Ethics Committee	58
	Appendix III - Informed Consent	59
	Appendix IV - Research Instrument	60
	Questionnaire to be filled by the clients	61
	Informant interview guide for bank officials	64
	Appendix VI-Proposed Budget	66

Appendix VII-Time Frame	67
Researcher's curriculum vitae	68

LIST OF TABLES

Tables	PAGES
1 Respondents of the Study	29
2 Demographic profile of Respondent	35
3 A Level of opportunities and challenges of electronic banking	37
3 B Level of opportunities and challenges of electronic banking	39
3 C Level of opportunities and challenges of electronic banking	40
3 D Level of opportunities and challenges of electronic banking	42
4 Level of organizational performance of indigenous banks of Rwanda	43
5 Pearson's Linear Correlation Coefficient for the level of opportunities and Challenges of electronic banking and the level of organizational Performance in Indigenous banks of Rwanda	45
6 Regression Analysis of the level of opportunities and challenges and the level of organizational Performance of electronic banking in indigenous banks of Rwanda	46
7 ANOVA	46

ACRONYMS AND ABBREVIATIONS

IT manager:	Information Technology Manager
SC :	Smart cards
E-banking:	Electronic banking
DBR :	Development Bank of Rwanda
NBR :	National Bank of Rwanda
BP :	Bill presentment
PDA :	Personal Digital Assistant
IDS :	Intrusion detection system
E-commerce:	Electronic commerce
EFT :	Electronic Fund Transfer
POS :	Point of Sale
ATM :	Automated Teller Machine
ACH :	Automated Clearing House
ICT :	Information Communication and Technology
E-cash :	Electronic cash
SPSS :	Statistical Package for Social Sciences
ISP :	Internet service providers
PIN :	personal identification numbers
CAATS :	Computer Aided Audit Tools
SMEs :	Small and Medium Sized Enterprises
IT :	Information Technology
MBA :	Master of Business Administration

CHAPTER ONE

THE PROBLEM AND ITS SCOPE

Background of the Study

Over the past few years Rwanda has seen vast improvements in services and accountability in its often struggling, highly competitive, and heavily bureaucratic financial services sector. Wireless and smart card technologies are also enabling the development of services in previously un-banked areas, helping to stimulate the local economies and encouraging investment. "Is a Rwanda immature market with an underdeveloped infrastructure however, there is a great potential for growth in utilizing new electronic banking systems with over 500,000 ATM card holders." observes the IT manager -Consolidated Bank of Rwanda.

In June 2001 BRD became one of the first banks to launch centralized banking system and for the first time, bank customers, could use ATMs, Smart cards, utility prepayments and debits and credit cards. Sixty percent of the world's leading financial institutions have a wireless strategy and consider mobile or wireless banking as a core element of their' services delivery strategy (According to World Bank Report 2005).

While the prospects for electronic banking in continue Rwanda to improve, problems persist .Banks increasingly operate websites through which customers are able not only to inquire about account balances, interest and exchange rates but also to conduct a range of transactions.

However the rapid development of e-banking capabilities carries risks as well as benefits.

The Banking Associations of expect Rwanda such risks to be recognized, addressed and managed by banking institutions, in a prudent manner according to the bank's overall risk policy These policies are expected to take on unprecedented speed of change related to technological and customer service innovation, the ubiquitous and

global nature of open electronic networks, the integration of e-banking application with legacy to computer systems and the increasing dependence of banks on third parties that provide the necessary IT while not overlooking other risks which may arise. The committee noted that these characteristics decreased and modified some of the traditional risks associated with banking activities in particular strategic, operational, and legal reputation risks, thereby influencing the overall risk profile of banking. E banking involves many different types of transactions and uses computers and electronic technology as a substitute for cheque and other paper transactions. Banks view E- banking as a powerful “value added” aspect to attract and retain new customers.

Statement of the Problem

Banks increasingly operate websites through which customers are able not only to inquire about account balances, interest and exchange rates but also to conduct a range of transactions. However the rapid development of e-banking capabilities carries risks as well as benefits. The Banking Associations of expect Rwanda such risks to be recognized, addressed and managed by banking institutions, in a prudent manner according to the bank’s overall risk policy These policies are expected to take on unprecedented speed of change related to technological and customer service innovation, the ubiquitous and global nature of open electronic networks, the integration of e-banking application with legacy to computer systems and the increasing dependence of banks on third parties that provide the necessary IT while not overlooking other risks which may arise. The committee noted that these characteristics decreased and modified some of the traditional risks associated with banking activities in particular strategic, operational, and legal reputation risks, thereby influencing the overall risk profile of banking. The research also tries to establish the opportunities and challenges of electronic banking on organizational performance of indigenous banks in Rwanda.

Purpose of the Study

The purposes of the study were:

1. To test the null hypothesis of no significant relationship between the level of opportunities and challenges of E-Banking and the level of organizational performance of indigenous banks of Rwanda.
2. To validate the information related to the theory.
3. To generate new information based on the findings of the study.
4. To bridge the gaps noted in the previous related studies.

Objectives of the study

General: The General objective of the study was to establish whether there is a significant relationship between the level of opportunities and challenges of E-Banking and the level of organization performance of indigenous banks of Rwanda.

Specific: To be sought further in this study the specific objectives were as follows:

1. To determine the demographic profile of respondents in terms of: Gender, Age, Education and Occupation.
2. To determine the level of opportunities and challenges of electronic banking in indigenous banks of Rwanda.
3. To determine the level of organizational performance of indigenous banks of Rwanda.
4. To determine whether there is a significant relationship between the level of opportunities and challenges of E-Banking and the level of organization performance of indigenous banks of Rwanda.

Research Questions

- 1 What is the demographic profile of respondents in terms of: gender, age, education occupation?**
2. What is the level of opportunities and challenges of E-Banking in indigenous banks of Rwanda?
3. What is the level of organizational performance of indigenous banks of Rwanda?
4. Is there a significant relationship between the level of opportunities and challenges of E-Banking and the level of organizational performance of indigenous banks of Rwanda?

Hypothesis

- 1. There is no a significant relationship between the level of opportunities and challenges of E-Banking and the level of organizational performance of indigenous banks of Rwanda.**

Scope

Geographical scope

The study covered the indigenous banks in Rwanda namely; Development Bank of Rwanda (DBR) and National Bank of Rwanda (NBR). Specifically, the study was conducted in different branches of Development Bank of Rwanda situated in Kigali city, Northern Province, southern province and Eastern province.

For the National Bank of Rwanda as it has only three branches, the research was conducted in Kigali city, Eastern province and western province.

Content Scope

The research identifies the opportunities and challenges of electronic banking these banks have identified in Rwanda on organizational performance to provide efficient and effective services and products through electronic banking.

Theoretical Scope

Towards a theory of Brian Mantel (2000) was proven.

Time scope

The study was carried out within a period of six months starting from November 2011 to 2012. This time was taken so that the researcher can have ample time to go through all the major steps of research. The study focused on a period of development of banking sector starting from 2008 to 2011. This was helped the researcher to trace the trend Electronic Banking in various banks in Rwanda.

Significance of the Study

The following disciplines was benefited from the findings of the study,

The Banking Sector

This research will help the managers of banks to cope challenges of customers about Electronic Banking services which are indicated in the study.

The Policy makers

The study findings would help policy makers to formulate strategies and policies that guide the Electronic Banking in Rwanda.

The researchers and Academic

The future researchers will utilize the findings of this study to embark on Electronic Banking on a related study.

Operational Definitions of Key Terms

The following terms have been defined in the context of this research;

Authentication: verification of identity by a computer system based on presentation of unique credentials to that system.

Antivirus software: computer programs that offer protection from virus by making additional check of integrity of the operating system and electronic files

Bill payment: an E-banking application whereby customers direct the financial institution to transfer funds to the account of another person or party

Bill presentment: an e banking service whereby the business submits an electronic bill or invoice directly to the customer's financial institution. The customer can view the bill online and if desired pay the bill through electronic payment.

E-banking: the remote delivery of new and traditional banking products and services through an electronic delivery services.

Firewall: a hardware or software link in a network that relays only data packets clearly intended and authorized to reach the other side.

Gateway server: a computer (server) that connects a private network of a services or other business.

Hacker: an individual who attempts to break into a computer without authority

Internet: a cooperative message forwarding system linking computer networks all over the world.

Outsourcing: the practice of contracting with another entity to perform services that would otherwise be done in-house

Passwords: a secret sequence of characters that is used as means of authentication

Personal digital assistant (PDA): a pocket sized, special purpose computer that lacks a conventional keyboard

Proxy server: an Internet server that controls the client's computers access to internet it helps stops access to undesirable websites of a company

Repudiation: the denial by one of the parties to a transaction of participation in all or part of the transaction or of the content of communication.

Server: a computer or other device that manages a network service e.g. print server that manages network printing.

Smart card: a card with an embedded computer chip on which information can be stored or processed.

Topology: a description of any kind of locality in terms of its physical layout.

Virus: a malicious code that replicates itself within the computer

Website: a web page or set of Web Pages designed, presented and linked together to form a logical information resource and or transaction initiation function.

Web linking: the use of hyper links to direct users to Web Pages or other entities.

Opportunity: an occasion which makes it possible to do something that you want to do or have to do or the possibility of doing something.

Challenge: Something needing great mental or physical effort in order to be done successfully and which therefore tests a person's ability.

Indigenous: naturally existing in a place or country rather than arriving from another place.

The performance: is what the organization hires one to do, and do well" which is relevant for the organizational goals.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Concepts, opinion, ideas from Authors/Experts

Opportunities and Challenges of E-Banking

Opportunity is an occasion which makes it possible to do something that you want to do or have to do or the possibility of doing something, (Crenshaw & Robinson, 1999; Gibbs, Kraemer, & Dedrick, 2003). Opportunities of Electronic Banking in commercial banks assaulted by the pressure of globalization, competition from nonbanking news ways to add value to the services. The question "what drives performance?" is at the top in understanding superior performance and hence striving for it. Substantial research efforts have gone into addressing this question, starting from the strategic level and going down to operational details. A key study bench marking the strategies of leading retail banks and retail banks was carried out by the bank strategies of leading retail banks and (Vander Velde 1992). This study is based on the opinions of heads of retail banks at all us commercial banks established the linkage between marketing, operations, organizing excellence. This finding led to the formulation of the service management strategy encapsulated in the trail operational capabilities service quality-performance (-SQ-P) (Foth and Jackson 1995). The C- SQ-P trail is, in turn, a focused view of the service profit chain described by (Heskett et al, 1994) based on their analysis of successful service organizations.

Opportunities of Electronic Banking

Convenience

Unlike in the traditional way of banking, electronic banking sites never close. They are available 24 hours a day, seven days per week and they are only a mouse click away. There is no longer restriction to bank opening hours.

by others. Given the volume of transmission and numerous paths available for data travel, it is unlikely that a transmission would be monitored at random.

Data integrity -Potentially, the open architecture of the Internet can allow those with specific knowledge and tools to alter or modify data during a transmission. Data integrity could also be compromised within the data storage system itself which can be both intentionally and unintentionally, if proper access controls are not maintained

Unauthorized access to the system- unwelcome system access could be achieved through in spoofing technique. This is where an intruder impersonates a local internal system and be granted access without a password. If access to the system is based only on IP address any user could gain access by masquerading as a legitimate authorized user. [Sager Ira; Steve Ham; Neil Gross; John Carey; and Robert Hoif; Cebel Crime. Business Weekly February 21St 2005.]

Viruses and other malicious programs pose a threat to system or networks that are connected to the Internet because they may be downl9aded directly. Aside from causing destruction or damage to data these programs could open a communication link with an external network allowing unauthorized system access, or even initiating the transmission of data.[Priscilla: Internet Security; Can Best Practices Overcome Worst Perils" White Paper, Computer World, May 2003]

Cost of Technology

Many bank branches lack the appropriate equipment to serve a modern payment system. The shortage of funds is the main difficulty in modernizing the payment system at many banks, especially the local banks and more so the indigenous bank. National and Communication Technology policies have been identified and documented for the amenity applications.

Public Acceptance

The public acceptance of new systems has been slow. Old habits die —hard and accordingly some segments of our society are reluctant to give up paper for electronic system.

Payment Instruments

The payment instruments available and the quality of banking services do not meet the needs of customers for a low cost, convenient and reliable payment medium that is essential to market economy. In addition, because the use of payment instruments is sometimes complicated, many people prefer cash to non-cash instruments when conducting payment transaction.

Economic Constrains and Culture

The demand for holding deposits with banks and making payment transactions through banks is very low.

Most of the Rwandan populace tends to prefer to use cash in payment transaction rather than non-cash instruments. People dislike using cheques due to incidences of bouncing and the fact that bouncing of cheques has not been criminalized in the Rwanda laws. [NIC Pay-net brochure)

Legal Framework

Lack of a sound legal and regulatory framework for NPS operations is a challenge to under pinning all aspects of modern electronic payment operations. Due to this fact, the BNR is already playing an important role in the development of a comprehensive legal framework for all facts of the payments system operations.

Bank Site Changes

Banks often upgrade their online programs, adding new features in unfamiliar places. In some cases you may have to re-enter your account information, which makes ED-banking services quite demanding.

Financial Loss to the Company or Customers

Any major disruption to a website by hackers can bring an Internet transaction to the brink of bankruptcy. Customer's clients end up paying for hacker's exploits as firms pass the losses on in the form of higher price. To investigate the suspected breach, the business will have to stop trading thus causing prejudice to buyers and sellers.[Sager Ira; Steve Ham; Neil Gross; John Carey; and Robert Hoff." Cyber crime Business weekly Feb 21 2005]

Ways of Coping With Challenges

Customer Privacy and Confidentiality

Maintaining the privacy of customer information is one of the cornerstones upon which trust in the Rwanda banks is based. To meet expectations regarding the privacy of customers' information, financial institution (banks) ensure that their privacy and standards comply with applicable privacy laws and regulations and requirements as established by GBLA. This regulation describes electronic disclosure that applies if an institution elects to display policy on its website.

Non-repudiation

This involves creating proof of the origin or delivery of data to protect the sender against false denial by the recipient that the data has been received or to protect the recipient against false denial by the sender that the data has been sent. To ensure that a transaction is enforceable, steps are taken to prohibit third parties from disputing the validity of refusing to acknowledge legitimate communications or transactions.

Information Security Controls

Effective information security comes only from establishing various controls and monitoring and testing methods which occur in different levels.

Security of Organization

Intrusion to a company network has extensive repercussion hence intrusion detection is a vital part of the organization to fight security breaches. Intrusion detection can be either host or network-based. Intrusion detection monitors all activities over a given network or a segment. Host —based detection requires the use of the host system's resources such as disk space. As such it affects system performance and is most appropriate when only a few critical servers need to be protected

Network-based intrusion detection performs rule - based or expert system policies set by the network administrator as well as loaded signatures that identify suspicious activities and attacks

Security of the Clients

Page caching creates a weakness when transacting data format. The server should empty its cache when the transaction is complete, but this could still lead to abort transaction data being stored on the client's disk. A partial solution is to disable the cache before the start of the transaction and then to re-enable it after the transaction is completed.

Moreover, a device called cookie was developed to maintain a limited amount of information on the client machine. A cookie is information [a small file] a website inserts on the hard disk so it can remember something about the user later.

Virus Protection

The best protection is to know the origin of each program that is downloaded into the computer but this is impossible in case of e-mail. A number of detection, protection and eradication of viruses on both host and local networks are required. Among the most popular solutions are McAfee Virus Scan, Norton Antivirus and CA Inoculants.

Because new viruses are released daily, a defense is most effective if the virus scanning software is loaded with the latest virus signature files. Networked solutions can automatically scan the network for viruses and download the periodic updates.[E-business and E-commerce infrastructure; by Abhijit and Chaudhury and Jean-Pierre Kuilboer, 2004]

Backup and Recovery

Disasters from hackers, hardware failure, or nature can strike even the most prepared organization. Backups should be prepared periodically. Procedures for short-term and long-term backups address different needs.

Short-term backups should be available on site in case quick recovery is needed. Practical media for small backups include CD_RW or replicated hot hard drive. Weekly or long-term backups could be stored either on tape or on disks in a remote network attached storage or storage area network.

Firewalls

Firewalls are a set of related programs located at the boundary of the network that prevents the sources of a private network from the user of other networks. With a firewall in place, the organization allows its works access to the Internet prevents outsiders from accessing the organizations' data resources and controls what outside resources its own users can access.[E-business and E-commerce infrastructure; by Abhijit and Chaudhury and Jean-Pierre Kuilboer 2004]

What is Electronic-Banking?

The term “electronic banking” or “e-banking” covers both computer and telephone banking. Using computer banking, a person either dials directly into its bank computer or gains access to the bank’s computer over the Internet.

Using telephone banking, a person controls its bank account by giving the bank instructions over the telephone. Both computer and telephone banking involve the use of a password, which give access to a client’s account.[E-business 2000. Road Map for Success 2nd ET by Ran Kalakota]

The concept of e-banking includes all types of banking activities performed through electronic networks. It is the most recent delivery channel of banking services which is used for both business-to-business (B2B) and business to- customer (B2C) transactions (Mohammad, 2009).

Advantages of electronic Banking

Online banking provides a number of advantages for both banks and their customers. Internet banking has made life much easier and banking much faster and more pleasant, for customers and the bank itself declares the SAS Institute AB (2000). Saving money and time are the most crucial advantages for both banks and the users. Besides, electronic banking removes geographical limitations for small and medium size banks, thereby international operations without limits can be operated. No or few time limitations for banking transactions are valid as users can perform most of the banking transactions throughout the day, week and from any place they can have access to Internet. Following and managing the cash position for individuals and firms for interest optimization is possible via e- banking. It provides convenience in terms of the capital, labour, time and all the resources needed to make a transaction.

E-banking has enabled banks to increase their data collection, and management, efficient financial engineering that have improved the ability of assessing potential creditors, measuring the creditworthiness of potential borrowers and to price the risk associated with those borrowers through standardized mechanisms such as credit

scoring (Zigi&Micheal, 2003, p.248). Taking advantage of integrated banking services bank, clients may compete in new markets, gain access to new customers and grow in their market share. Technological developments in banking make it much easier and cheaper for customers to compare and contrast products and to establish multiple banking connections (Carlson,2000,p 1-33), which could alter the purchasing, decision making process of the customer(Buhl,1998).

Besides its benefits, electronic banking has its own draw backs as well. One of the main important disadvantages of electronic banking applications internationally is the lack of governmental policies that guides Internet banking operations across international borders (Kannan, 2004). While electronic banking can provide a number of benefits for customers and new business opportunities for banks, it exacerbates traditional banking risks. Even though considerable work has been done in some countries in adapting banking and supervision regulations, continuous vigilance and revisions will be essential as the scope of E-banking increases. In particular, there is still a need to establish greater harmonization and coordination at the international level. To understand the impact of E-banking on the conduct of economic policy, policymakers need a solid analytical foundation. Without one, the markets will provide the answer, possibly at a high economic cost. Further research on policy-related issues in the period ahead is therefore critical(Aladvani, 2001, 222).

The main advantages of E-banking are:

1. The operating cost per unit services is lower for the banks.
2. It offers convenience to customers as they are not required to go to the bank's premises.
3. There is very low incidence of errors.
4. The customer can obtain funds at any time from ATM machines.
5. The credit cards and debit cards enables the Customers to obtain discounts from retail outlets.
6. Real-time Banking
7. Security
8. Time out feature
9. Easy to Setup Account
10. Easy to Sign in

Products and services of electronic banking:

Products

1) Automated Teller Machine (ATM)

These are electronic terminals that let you bank almost any time. They enhance withdrawal of cash, Balance inquiry, mini-statements, pin change as well as transfer of funds between accounts just by inserting an ATM card and entering PIN. Some institutions charge a fee to the consumer who doesn't have an account with them. These institutions inform you the fee they charge and the amount on or at the terminal screen before you complete the transaction, According to Juma Dalmas

Direct Deposit

Direct deposit lets you authorize specific deposits, such as paychecks and social security checks, to your account on a regular basis. It may also, preauthorize direct withdrawals so that recurring bills such as insurance premiums, mortgages, and utility bills are paid automatically. (<http://www.ftc.gov/bcp/online/pubs/credit/elbank.htm>)

Pay-By-Phone- Systems:

It lets you telephone your financial institution with instruction to pay certain bills or to transfer funds between accounts. One must have an agreement in advance with the institution to make such transfers. Mainly Bank of Kigali Ltd offers this product. It is also referred to as M-banking. The user can handle many banking transactions through a touch of a button to; view your account balance, request transfers between accounts and pay daily bills electronically. (BRD-Customer Access Journal)

Personal Computer Banking

It allows you to conduct many banking transaction electronically via a personal computer. For instance, you may use your computer to view your account balance, request transfers between accounts, and pay bills electronically.

Point of Sale (POS) Transfers

It allows you to pay for retail purchase with an EFT (Electronic Fund Transfer). This may be an ATM card. This is similar to using a credit card but with one important exception. The money for the purchase is transferred immediately [from your bank account to the stores account. An increasing number of clients (merchant) are accepting this type of payment.

Organizational Performance

Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives) (According to Richard et al. (2009).

Organizational performance involves the recurring activities to establish organizational goals, monitor progress toward the goals, and make adjustments to achieve those goals more effectively and efficiently. (Carter McNamara, MBA, PhD, Authenticity Consulting, LLC.) Specialists in many fields are concerned with **organizational performance** including strategic planners, operations, finance, legal, and organizational development.

Organizational Performance has been defined as the ability of an organization to fulfill its mission through sound management, strong governance and a persistent rededication to achieving results. Effective nonprofits are mission-driven, adaptable, customer-focused, entrepreneurial, outcomes oriented and sustainable.

(by Bibhuti Bhusan Mahapatro.)

The term Indigenous Banks

Indigenous banks constitute the ancient banking system of Rwanda. They have been carrying on their age-old banking operations in different parts of the country under different district (Mugabire 2007). According to the Rwandan Central Banking Enquiry Committee, an indigenous bank is defined as an individual or private firm which receives deposits, deals in hundies or engages itself in lending money.

Indicators of performance

A performance indicator or key performance indicator (KPI) is an industry jargon for a type of performance measurement KPIs are commonly used by an organization to evaluate its success or the success of a particular activity in which it is engaged.

Sometimes success is defined in terms of making progress toward strategic goals, but often success is simply the repeated achievement of some level of operational goal (for example, zero defects, 10/10 customer satisfaction, etc.). Accordingly, choosing the right KPIs is reliant upon having a good understanding of what is important to the organization. 'What is important' often depends on the department measuring the

performance - the KPIs useful to finance will be quite different than the KPIs assigned to sales, for example. Because of the need to develop a good understanding of what is important, performance indicator selection is often closely associated with the use of various techniques to assess the present state of the business, and its key activities. These assessments often lead to the identification of potential improvements; and as a consequence, performance indicators are routinely associated with 'performance improvement' initiatives. A very common way for choosing KPIs is to apply a management framework such as the balanced scorecard.

Categorization of indicators

Key performance indicators define a set of values used to measure against. These raw sets of values, which are fed to systems in charge of summarizing the information, are called indicators. Indicators identifiable as possible candidates for KPIs can be summarized into the following sub-categories:

1. Quantitative indicators which can be presented as a number.
2. Practical indicators that interface with existing company processes.
3. Directional indicators specifying whether an organization is getting better or not.
4. Actionable indicators are sufficiently in an organization's control to affect change.
5. Financial indicators used in performance measurement and when looking at an operating index.

Theoretical perspectives

This study was based on theory of Obstacles, Incentives, and Opportunities by Brian Mantel (2000).

Brian Mantel proposed a framework for describing why consumers use electronic banking products such as electronic bill payment, credit cards, debit cards, stored value, and e-cash. The study surveys the literature; reports on the results of several studies,

and develops a framework for evaluating consumer electronic banking usage. The framework includes three primary factors that explain consumer electronic banking usage: (1) household wealth, (2) personal preferences (e.g., convenience, budgeting, control, incentives, involvement, security), and (3) transaction-specific factors (e.g., dollar size, variability of dollar amount, offline versus online location, etc.). A number of ad hoc theories could be created to explain payment instrument successes on a case by case basis. However, the author proposed that this general decision-making framework is a superior tool for management and public policy analysis because of its simplicity, ability to explain a range of outcomes, and ability to develop testable forecasts.

The study suggested that consumers make rational decisions regarding the use of alternative payment instruments, rather than being "irrationally" resistant to change. Including a broader list of financial and non-financial factors, beyond just cost and convenience, explains the "irrationality" that is sometimes attributed to consumers. This study went on to consider the potential substitutability of alternative electronic payment methods for cash and checks.

This decision-making framework is consistent with new product adoption models that suggest that some consumer segments will adopt products more quickly and that adoption will grow over time. However, this framework also suggests that product and service enhancements will be critical in reaching more mainstream use of electronic banking products. This study asserted that to the degree that electronic payments carry features similar to those of checks and credit cards, consumers will migrate towards electronic payments. Consequently, the future migration towards electronic banking products will be more dependent on establishing business cases for innovations than in overcoming consumer reluctance. Some payment providers are already bundling more attractive features with these innovations (e.g., debit cards most significantly, as well as electronic bill payment and consumer-to-consumer payment innovations) and increasing the communications programs that support them. Anecdotal evidence provides some

support, though not scientifically proven yet, that these efforts are leading to increased consumer usage of electronic banking products.

To use a theoretical scope, the reason being, the opportunities and challenges on organizational performance of electronic banking is theoretically related to it.

Related Studies

The Adoption of E-banking in Developing Countries, according to Nayeema Islam in Bangladesh 2000, Electronic banking (e-banking) reduces the transaction costs of banking for both SMEs and banks. SMEs need not visit banks for banking transactions, providing round the clock services (Cheng et al., 2006). SMEs can apply for loans and do other banking services online (Smith and Rupp, 2003). Despite these benefits, little research has been conducted on factors affecting e-banking adoption by SMEs in developing countries. E banking has been discussed from a retail point of view (B2C) (Wan and Chow, 2005; Celik, 2008), however financial services to SMEs have so far received limited attention. (Gehling et al., 2007). Nonetheless, online financial services represent a critical issue for the survival of SMEs (Wright and Ralston, 2002). E-banking grows faster than other e-commerce sectors, as financial services are data intensive and require no physical delivery (Zekos, 2004). The Literature on SMEs in developed countries has mostly focused on e-commerce issues (Bunker and MacGregor, 2000), as unlike in developing countries, financing seems not to be a critical issue (Guglani, 2001). Khalifa and Davison (2006) mentioned that existing literature on the adoption of information technologies can be grouped into two approaches. One focuses on the rationalistic goal oriented behaviour of firms and the other focuses on external forces of institutions. These theories, however, are not mutually exclusive as both firms' related and institutional forces together determine adoption. Hence, there is a clear demand for an e-banking adoption model for SMEs in developing countries that incorporate both the goal oriented behaviour of firms as well as institutional pressure on technology adoption. E-banking services have been available in Bangladesh since 2001. As of 2007, 29 out of 48 banks have offered online

financial services (Rahman, 2007). However, the adoption of online banking channels by Bangladeshi SMEs has been rather slow when compared with the large companies in Bangladesh or SMEs in other developed countries. Dewan and Nazmin (2008) have reported that SMEs in Bangladesh lag behind in the use of ICTs. In Bangladesh, research has been done on electronic commerce issues (Azam, 2007), computer usage (Azam, 2005), Internet usage (Awal, 2004), telephone (Khan, 2001) and electronic banking (Bakta et al., 2007). But, no research has been done on e-banking issues in SMEs, although SMEs in Bangladesh Contribute 25 percent of GDP, 80 percent of employment creation (Rikta, 2007). Also more than 40 percent of SMEs are deprived from any kinds of external sources of finance (IFC Investment Climate Survey, 2003). The Importance of E-banking in Business, *according to Laura Acevedo, Demand Media*, 2010 in Australia Businesses rely on efficient and rapid access to banking information for cash flow reviews, auditing and daily financial transaction processing. E-banking offers ease of access, secure transactions and 24-hour banking options. From small start-up companies to more established entities, small businesses rely on e-banking to eliminate runs to the bank and to make financial decisions with updated information. In an information-driven business climate, companies who do not use e-banking are at a competitive disadvantage. Errors or delays can be noted and resolved quicker, potentially before any business impact is felt. In some cases, month-end reconciliations for credit card transactions and bank accounts can be automated by using e-banking files. Opting for e-banking minimizes business overhead and banking expenses.

In many cases, electronic files and daily reviews of banking data can be used to double or triple check vital accounting data, which increases the accuracy of financial statements.

E-banking offers visibility into banking activities, which makes it harder for under-the-table or fraudulent activities to occur.

Impact and importance of Electronic BANKING, According to Radojčić Biljana¹, Jovanović Dražen², in Bosnia 2001.

This study dealt with the electronic payment transactions which are nowadays a very significant segment of the banking business. The payment transactions assume every payment which is done via banking or similar organizations concerning any kind of legal affairs. A banking business is completely based on the appropriate models of electronic operations; that is why the research on electronic banking is of great importance particularly because this field is still being developed.

On the other hand, depositors have a wide range of investment alternatives so they are not obliged to keep deposits in banks. Precisely because of this, the modern banks have been forced to change lots of things, offer new services, open the organizational departments which deal with other financial services, introduce technological innovations, change payment systems, procedures and working methods. Nowadays, banks are complex financial institutions which offer the whole range of different services dedicated to a wide category of participants in economic and social life.

CHAPTER THREE

RESEARCH METHODOLOGY

Research Design

The study used the descriptive correlation design in order to find the relationship between opportunities and challenges of electronic banking on organizational performance in indigenous banks of Rwanda. This enabled the researcher to obtain a better understanding of the service performance of electronic banking and allowed comprehensive and intensive data collection providing an in-depth study on opportunities and challenges on organizational performance of e- banking in indigenous banks.

Research Population

The population of concern in this study consisted of: BRD, BNR

The banks above were taken into consideration because they represent the large indigenous banks that have adopted the E-banking technology.

The population size was 150.

Sample Size

In view of the nature of the target population where the number for both managers and customers are many, a sample was taken from each category. Table 1 below shows the respondents of the study with the following categories: target population and sample size. The Slovene's formula is used to determine the minimum sample size.

Table1.

Respondents of the Study

Banks	Population	Sample size
BRD	37	27
BNR	113	82
TOTAL	150	109

$$n = \frac{N}{1 + N(e)^2}$$

N: Population: 150

: 0.05

n: *Sample Size*:?

$$n = \frac{N}{1 + N(e)^2} : 150/1+150(0.05)^2=109$$

Sampling Procedures

The systematic random sampling method was used to choose the respondents for representative. According to above stratification of target population, the selection in each category was done according to the following procedure:

(1) Sampling frame randomly ordered, from 1 to N_h (N_h is the total number of individuals in the population of each stratum h).

(2) Determine the sampling interval I in the stratum h , as $I_h = N_h/n_h$ where n_h being the size of the sample in stratum h .

(3) Choose a random number between 0 and 1 using a calculator that gives random numbers between zero and one, multiply the random number by the value of I to obtain the random start number, expressed by R_h .

(4) The j^{th} sample unit (S_j) in the population can be selected as follows:

$$S_{hj} = R_h + (j-1)I_h \text{ With } j = 1, 2, \dots, n_h \text{ (round up)}$$

Where: S_j = selected number of j^{th} individual in the population

R = random starting point;

I = drawing line (interval)

n_h = sample size

Research Instrument

The instruments used to collect data were as detailed:

Primary data

1. Questionnaires- Two questionnaires were designed for this purpose

Geared to the managers under the IT department in the named banks (3 managers targeted)

The users of e- banking- Ten clients in each were bank were targeted.

These were designed in both open and closed-ended design. The method ensured proportion of responses and high return rates.

2. Interview -In this case we used face-to-face interview with the IT managers and users for quick response and for adequate information. The purpose was also to seek further clarification on the responses given and allowed for supplementary aims related to the study problem. The targeted clients were five (5) from each selected institution and 2 managers of IT department.

Secondary data

Secondary data was obtained by viewing published sources and information relating to electronic banking. They included; Textbooks, Journals, Magazines, Newspapers and E-banking websites

Validity and Reliability of the Instrument

The research instrument that the researcher intended to use was questionnaire. Before carrying out the study, the researcher consulted the supervisor to make sure that the instrument generated relevant information during the study. After consultation, the approval was given to go to field by supervisor. To ensure the reliability of the research instrument, the research proposal was examined by Ethics Committee/BNR to ensure that the study can be applied to the organization and the approval was given to conduct the research (Ref: EC/BNR/022/12).

In order to test and improve on the reliability of the questionnaire, the Content Validity Index (CVI) was calculated from the formula below:

$$CVI = n/N$$

Where, CVI: Content Validity Index, N: 8 (Total number of items in questionnaire), n: 7 (number of relevant items in the questionnaire)

$$CVI = 0.9$$

Since the CVI of research instrument was greater than 0.7, then the instrument was declared content valid.

The research also used SPSS output for Cronbach's alpha to test the reliability of the questionnaire to come up with the result as show in the following table.

A representation of cronbach's alpha reliability statistic

Cronbach's alpha	Cronbach's alpha based On standardized item	Not item
0.805	.796	9

According to above table the alpha coefficient for nine items was .839 suggesting that item in the questionnaire had relatively high reliability

Data Gathering Procedures

The researcher collected both primary and secondary data relevant to the study using questionnaires. The data collection process was organized and conducted in three stages:

Before the administration of the questionnaires

1. An introduction letter was obtained from the School of Post Graduate Studies and Research at Kampala International University, for the researcher to solicit approval to conduct the study from BRD and BNR
2. When approved, the researcher secured a list of the sampling frame of respondents. This was involved seeking permission by the researcher from the BRD and BNR after approval of the research proposal by Ethics committee/ BRD and BNR to protect qualified respondents from harm or harassment and their confidentiality and superiors' sensitive information.
3. The respondents were explained about the research study and enough questionnaires were reproduced for distribution.

4. The researcher selected assistants who would assist in the data collection; brief and orient them in order to be consistent in administering the questionnaires.

During the administration of the questionnaires

1. The respondents were requested to answer completely and not to leave any part of the questionnaires unanswered.
2. The researcher and assistants emphasized retrieval of the questionnaires within ten days from the date of distribution.
3. On retrieval, all returned questionnaires were checked if all are answered.

After the administration of the questionnaires

The data gathered was collected, encoded into the computer and statistically treated using the Statistical Package for Social Sciences (SPSS).

Data Analysis

Frequency tables and percentages distribution were used to determine the profile of respondents. Means were used to determine the level of opportunities and challenges on organizational performance of electronic Banking.

Pearson's correlation co-efficient was used to test for the significant relationships between opportunities and challenges on organizational performance of Electronic Banking. The analysis of Variance (ANOVA) was utilized to test the difference between opportunities and challenges of electronic Banking.

In order to interpret the data taken for the respondents, the following values and interpretation was used.

Mean range	Response mode	Interpretation
3.25 – 4.00	Strongly disagree	Very low
2.25 – 3.25	Disagree	Low
1.76 – 2.50	Agree	Moderate
1.00 – 1.75	Strongly agree	High

Ethical Considerations

To ensure confidentiality of the information provided by the respondents and to ascertain the practice of ethics in this study, the following activities were implemented by the researcher:

Seek permission to adopt the standardized questionnaire on bank through a written communication to the author.

The respondents and banks were coded instead of reflecting the names.

Solicit permission through a written request to the concerned officials of the banks included in the study. Request the respondents to sign in the Informed Consent Form (Appendix 3)

Acknowledge the authors quoted in this study and the author of the standardized instrument through citations and referencing. Present the findings in a generalized manner.

Limitations of the Study

In view of the following threats to validity, the researcher claimed an allowable 5% margin of error at 0.05 level of significance. Measures are also indicated in order to minimize if not to eradicate the threats to the validity of the findings of this study.

1. *Extraneous variables* which were beyond the researcher's control such as respondents' honesty, personal biases and uncontrolled setting of the study.

2. *Instrumentation*: The research instruments on resource availability and utilization are not standardized. Therefore a validity and reliability test will be done to produce a credible measurement of the research variables.

3. *Testing*: The use of research assistants can bring about inconsistency in the administration of the questionnaires in terms of time of administration, understanding of the items in the questionnaires and explanations given to the respondents. To minimize this threat, the research assistants will be oriented and briefed on the procedures to be done in data collection.

4. *Attrition/Mortality*: Not all questionnaires maybe returned neither completely answered nor even retrieved back due to circumstances on the part of the respondents such as travels, sickness, hospitalization and refusal/withdrawal to participate. In anticipation to this, the researcher will reserve more respondents by exceeding the minimum sample size. The respondents will also be reminded not to leave any item in the questionnaires unanswered and will be closely followed up as to the date of retrieval.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Characteristics of respondents

The respondents in this research were described according to their gender, ages, occupation and education. Respondents were requested to furnish such information about them. Their responses were sorted using frequencies & percentage distributions as indicated in table below.

Table2:

Demographic profile of Respondent

(n=109)

Profile of respondents	Category	Frequency	Percentage
Gender	Female	51	46
	Male	58	54
	Total	109	100
Age	21-30	16	15
	31-40	23	21
	41-50	43	39
	51-above	27	25
	Total	109	100
Occupation	managers	4	3.7
	customers	84	77
	Departmental officers	9	8.3
	others	12	11
	Total	109	100
Education	Tertiary level	46	42
	Secondary level	26	24
	Primary	17	16
	Others	20	18
	Total	109	100

Source: Primary Data (2012)

The findings show that 46% of the respondents were female and 54% were male. This indicates that women did not actively take part in the electronic banking in banking sector from Rwanda while male took the active role in electronic banking. This was attributed to the low level of women owning large business that participate in electronic banking.

From the above, 15% of the respondents were aged between 21 to 30 years, 21% were aged 31 to 40 years, 39% were aged 41 to 50 years and 25 % of the respondents were aged 50 years and above. This relatively shows that all age groups were actively involved in the electronic banking though those aged between 31 to 40 and 41 to 50 were more active than the rest of the groups.

The respondents were gathered in these categories according to their qualification and according to the research title, namely: managers, customers, Departmental officer and others. As the table above shown, the respondents were in majority of customers with 77% of the respondents against 3.7% of managers, 8.3% of departmental officers like director of information and technology, procurement officer and accountants and 11% of others like logistics officers ,procurement assistants, logistic assistants and cashiers .

This relatively shows that all positions were actively involved in the electronic banking which means that the employees or customers of this national bank of Rwanda and bank of development of Rwanda have enough encouragements of e-banking and encouragements is needed in order to perform well.

Basing on the findings, 42 % of the respondents were of tertiary level of education, 24% of the respondents were of secondary level of education, 16% of the respondents were of primary level and 18% of the respondents were of other education status including those who have never been to school. This indicates that only the educated had a better understanding of electronic banking hence their high involvement in electronic banking than people who were not of high levels education.

Level of opportunities and challenges of electronic banking in indigenous banks of Rwanda

The independent variable of this research is level of opportunities and challenges of electronic banking so in order to determine the second objective which is to determine the Level of opportunities and challenges of electronic banking.

It is important to take that the opinions of all categories of workers converge for the aspects mentioned in the table 3 below:

Table 3 A:

Level of opportunities and challenges of electronic banking

n=109

responses	Mean	Interpretation	Rank
There is the level of opportunities of electronic banking in your bank	3.69	High	1
The benefit enjoy through the use of e-banking is to give quality services and adequate information	3.57	High	2
The banks are available 24 hours a day, seven days per week and they are only a mouse click away	3.55	High	3
Electronic banking limits one according to the distance	3.49	High	4
Electronic bank sites generally execute and confirm transacting very quickly	3.43	High	5
There is no the level of opportunities of e-banking in your bank	3.14	moderate	6
Sub-total	3.48	high	
There is the level of challenges of electronic banking.	3.62	High	1
Customer's clients end up paying for hacker's exploits as firms pass the losses on in the form of higher price.	3.58	High	2
Most of the Rwandan populace tends to prefer to use cash in payment transaction rather than non-cash instruments.	3.38	High	3
The public acceptance of new systems (e-banking) has been	3.12	Moderate	4

slow.			
Data privacy and confidentiality- unless otherwise protected, all data transfers, including electronic mail, travel openly over the Internet and can be monitored or read by others.	3.09	Moderate	5
The implications and impact of these products and development on monetary policy and financial stability is yet to be fully comprehended by financial system regulation and government.	2.89	Moderate	6
The payment instruments available and the quality of banking services do not meet the needs of customers for a low cost, convenient and reliable payment medium that is essential to market economy.	2.85	Moderate	7
Sub-total	3.21	Moderate	

Table 3 B:

responses	Mean	Interpretation	Rank
The operating cost per unit services is lower for the banks.	3.68	High	1
It offers convenience to customers as they are not required to go to the bank's premises.	3.49	High	2
There is very low incidence of errors.	3.46	High	3
The customer can obtain funds at any time from ATM machines.	3.18	Moderate	4
The credit cards and debit cards enables the Customers to obtain discounts from retail outlets.	2.92	Moderate	5
Sub-total	3.34	High	
responses			
Real-time Banking	3.63	High	1
Security	3.57	High	2
Time out feature	3.54	High	3
Easy to Setup Account	3.50	High	4
Easy to Sign in	3.34	High	5
Sub-total	3.51	High	

Table 3 C:

responses	Mean	Interpreta tion	Rank
These are electronic terminals that let you bank almost any time	3.23	Moderate	1
Direct deposit lets you authorize specific deposits, such as paychecks and social security checks, to your account on a regular basis.	2.79	Moderate	2
It lets you telephone your financial institution with instruction to pay certain bills or to transfer funds between accounts.	2.08	Low	3
The money for the purchase is transferred immediately [from your bank account to the stores account.	1.07	Very low	4
Sub-total	2.29	Low	
responses			
This is a service that transports a viewer to a different part of the website or a completely different website by just clicking the mouse.	3.78	High	1
Financial institutions arrange for the storage of electronic files that make up the websites.	3.62	High	2
These are stored on one or more servers of the financial institution's premises.	3.32	High	3
Wireless banking is a delivery channel that can extend the reach and enhance the convenience of Internet banking services.	3.08	Moderate	4
one can make transaction and access his/her account in any part of the world through the Internet	3.00	Moderate	5
Sub-total	3.36	High	

Table 3 D:

responses	Mean	Interpretation	Rank
Any major disruption to a website by hackers can bring an Internet transaction to the brink of bankruptcy.	3.76	High	1
Effective information security comes only from establishing various controls and monitoring and testing methods which occur in different levels.	3.69	High	2
People dislike using cheques due to incidences of bouncing and the fact that bouncing of cheques has not been criminalized in the Rwanda laws.	3.61	High	3
Many people prefer cash to non-cash instruments when conducting payment transaction.	3.52	High	4
Viruses and other malicious programs pose a threat to system or networks that are connected to the Internet because they may be downloaded directly.	3.33	High	5
Old habits die —hard and accordingly some segments of our society are reluctant to give up paper for electronic system	3.29	High	6
Sub-total	3.53	High	
Average mean	3.24	Moderate	

Source: Primary Data (2012)

Results in table 3A as they are shown, the respondents were asked a question to indicate if the opportunities and challenges of electronic banking have an importance to the banks. There is the level of opportunities of electronic banking in your bank (mean = 3.69), equivalent to high, The benefit enjoy through the use of e-banking is to give quality services and adequate information (mean = 3.57), equivalent to high, The banks are available 24 hours a day, seven days per week and they are only a mouse click away (mean = 3.66), equivalent to high, Electronic banking limits one according to the distance (mean=3.49), equivalent to high, Electronic bank sites generally execute and confirm transacting very quickly (mean=3.43), equivalent to high, There is no the level

of opportunities of e-banking in your bank (mean=3.14) equivalent to moderate, There is the level of challenges of electronic banking (mean=3.62), equivalent to high, Customer's clients end up paying for hacker's exploits as firms pass the losses on in the form of higher price (mean=3.58), equivalent to high, Most of the Rwandan populace tends to prefer to use cash in payment transaction rather than non-cash instruments (mean=3.38), equivalent to high, The public acceptance of new systems (e-banking) has been slow (mean=3.12), equivalent to moderate, Data privacy and confidentiality- unless otherwise protected, all data transfers, including electronic mail, travel openly over the Internet and can be monitored or read by others. (mean=3.09) equivalent to moderate, The implications and impact of these products and development on monetary policy and financial stability is yet to be fully comprehended by financial system regulation and government, (mean=2.89) equivalent to moderate, The payment instruments available and the quality of banking services do not meet the needs of customers for a low cost, convenient and reliable payment medium that is essential to market economy, (mean=2.85) equivalent to moderate .According to table 3 B above, the operating cost per unit services is lower for the banks with a high level with mean=3.68, It offers convenience to customers as they are not required to go to the bank's premises, equivalent to high with mean=3.49, There is very low incidence of errors equivalent to high with mean=3.46, The customer can obtain funds at any time from ATM machines ,equivalent to moderate with mean=3.18 and The credit cards and debit cards enables the Customers to obtain discounts from retail outlets, equivalent to moderate with mean=2.92, Real-time Banking Equivalent to high (mean=3.63), Security equivalent to high (mean=3.57), Time out feature equivalent to high (mean=3.54), Easy to Setup Account to high with (mean=3.50) and Easy to Sign in to high with (mean=3.34).

These are electronic terminals that let you bank almost any time equivalent to moderate with mean of 3.23; direct deposit lets you authorize specific deposits, such as paychecks and social security checks, to your account on a regular basis equivalent to moderate

with mean of 2.79, It lets you telephone your financial institution with instruction to pay certain bills or to transfer funds between accounts, equivalent to low with mean of 1.07 and The money for the purchase is transferred immediately from your bank account to the stores account, equivalent to very low with mean of 1.07, This is a service that transports a viewer to a different part of the website or a completely different website by just clicking the mouse, equivalent to high (mean=3.78), Financial institutions arrange for the storage of electronic files that make up the websites, These are stored on one or more servers of the financial institution's premises, equivalent to high (mean=3.62), These are stored on one or more servers of the financial institution's premises, equivalent to high (mean=3.32), Bills payment services permit customer to electronically instruct their financial institution to transfer funds to a bank at some future specified date, equivalent to moderate (mean=3.08) and one can make transaction and access his/her account in any part of the world through the Internet, equivalent to moderate (mean=3.00).

Any major disruption to a website by hackers can bring an Internet transaction to the brink of bankruptcy equivalent To high (mean=3.76), Effective information security comes only from establishing various controls and monitoring and testing methods which occur in different levels, equivalent to high (mean=3.69), People dislike using cheques due to incidences of bouncing and the fact that bouncing of cheques has not been criminalized in the Rwanda laws, equivalent to high (mean=3.61), Viruses and other malicious programs pose a threat to system or networks that are connected to the Internet because they may be downloaded directly, equivalent to high (mean=3.52), many people prefer cash to non-cash instruments when conducting payment transaction, equivalent to high (mean=3.33) equivalent to high (mean=3.29) Old habits die —hard and accordingly some segments of our society are reluctant to give up paper for electronic system mean (3.24), equivalent to moderate

Level of organizational performance

The dependent variable in this study was organizational performance; To achieve the third objective which was to determine the level of organizational performance the respondents were asked to rate the questions using Likert scaled between one to four, where 4 = strongly agree; 3= agree; 2 = disagree; and 1 = strongly disagree. Their responses were analyzed using SPSS's summary statistics showing the mean as indicated in table4 below:

Table 4:

Level of organizational performance of indigenous banks of Rwanda n=109

responses	Mean	Interpretation	Rank
The banks recognize their expenses in order to assess their revenues requirements	3.66	High	1
Electronic banking can increase the performance of your bank	3.66	High	2
the public services that our bank offers are efficient, effective, and economical	3.63	High	3
There are customer's satisfaction,	3.56	High	4
The banks have reputation	3.53	High	5
There are employees' motivation,	3.52	High	6
The institution prepares financial statements, current internal balance sheet and income statement are required easily	3.44	High	7
e-banking increases number of customers because of good customer care	3.44	High	8
Improving customer service involves making a commitment to learning what our customers' needs and wants are, and developing actions, plans that implement customer friendly processes.	3.37	High	9
There are quality of Customer care in banks	3.28	High	10
Income increases because of electronic banking	3.19	Moderate	11
Progress of the banks	3.17	Moderate	12
Electronic banking helps staff and management committee members to see mistakes as opportunities for improving the services in order to combat against the Competitors	3.12	Moderate	13
Continual improvement (exceed customer expectations)	3.02	Moderate	14
Electronic banking helps staff and management Committee all committed to providing quality services	2.89	Moderate	15
Total	3.36	High	

The banks recognize their expenses in order to assess their revenues requirements is high (mean=3.36). Electronic banking can increase the performance of your bank at a high level (mean=3.66) , the public services that our bank offers are efficient, effective, and economical on a high level (mean=3.66), There are customer's satisfaction, high level (mean=3.63), The banks have reputation on high level with a mean=3.56, There are employees' motivation on high level (mean=3.53)

The institution prepares financial statements, current internal balance sheet and income statement are required easily on high level (mean=3.52).E-banking increases number of customers because of good customer care at a high level with a (mean=3.44), Improving customer service involves making a commitment to learning what our customers' needs and wants are, and developing actions, plans that implement customer friendly processes with a mean of 3.44.

There are quality of Customer care in banks with a high level (mean 3.37) Income increases because of electronic banking (mean=3.28) While they were agreed (mean=3.19) with that the institutions finance its activities and meet its cash requirements and its commitments.

Progress of the banks (mean=3.17) at a moderate level, Electronic banking helps staff and management committee members to see mistakes as opportunities for improving the services in order to combat against the Competitors (mean3.12); at moderate, Continual improvement (to meet or exceed customer expectations), (mean=3.02) at a moderate level, Electronic banking helps staff and management Committee all committed to providing quality services which is equal to (mean=2.89).

Relationship between opportunities and challenges of electronic banking on organizational performance

The last objective in this study was to determine if there is a relationship between the level of opportunities and challenges and the level of organizational Performance of

electronic banking in indigenous banks of Rwanda, for which it was not significantly correlated. To test this hypothesis, Pearson's Linear Correlation Coefficient (PLCC) was used. The summary of correlation between independent and dependent variables is demonstrated in table below.

Table 5:
Pearson's Linear Correlation Coefficient for the level of opportunities and challenges of electronic banking and the level of organizational Performance in indigenous banks of Rwanda

		opportunities and challenges	organizational Performance	Interpretation	Decision on Ho
opportunities and challenges	Pearson Correlation	1	.980	Positive and significant	Rejected
	Sig.		.000		
	N	7	7		
organizational Performance	Pearson Correlation	.980	1		
	Sig.	.000			
	N	7	15		

The results in table 5above show that there is a positive significant relationship between the level of opportunities and challenges of electronic banking and the level of organizational Performance in indigenous banks of Rwanda. For instance the level of opportunities and challenges is positively and significantly correlated with organizational performance ($r=0.980$, $\text{sig.} = .000$), it means that the opportunities and challenges of electronic banking have a considerable influence on the organizational performance. The researcher rejected the null hypothesis and affirmed that there is a significant relationship between the level of opportunities and challenges of electronic banking and the level of organizational Performance in indigenous banks of Rwanda

Table 6:

Regression Analysis of the level of opportunities and challenges and the level of organizational Performance of electronic banking in indigenous banks of Rwanda
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.980 ^a	.961	.961	.11957	.322

a. Predictors:(Constant),opportunities and challenges

b. Dependent Variable: level of organizational Performance

The table 6 above indicate that 96.1% of the dependent variable is explained by the independent variable ($r^2=0.961$).

Table7:

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	35.230	1	35.230	2.464E3	.000 ^a
Residual	1.415	99	.014		
Total	36.645	100			

a. Predictors: (Constant), opportunities and challenges

b. Dependent Variable: level of organizational Performance

The ANOVA analysis depict that there is no variation ($df = 1$) in the variables hence a positive regression and correlation of the relationships is viable.

CHAPTER FIVE

FINDINGS, CONCLUSION AND RECOMMENDATIONS

FINDINGS

To determine the profile of respondents

The first objective of this study was to determine the profile of respondents in terms of gender, age, occupation and education. The results on this objective indicate that there is a gender balance in Rwandan banking sector because 54% were male and 46 % were female. The large numbers of respondents are between 41 – 50 years with 39%.about occupation the respondents were in majority of customers with 77% , Most of respondents have a Tertiary level of education which represents 42%, the respondents were gathered in these categories according to their qualification and according to the research title namely accountant, procurements, department officer like directors of finance and directors of information and technology.

Explore the level of opportunities and challenges of electronic banking

According to the findings the respondents agree that the opportunities and challenges of electronic banking is high (mean = 3.24) in indigenous banks of Rwanda

The opportunities and challenges of electronic banking have a high importance (mean = 3.51) to the indigenous banks of Rwanda,

The study found out that the benefits of e banking into two that is, opportunities to the clients and opportunities to the banks.

To the Banks: The e- Banking reduced the cost of wages of tellers and back office personnel; it has resulted into dramatic productivity gains and Reduction in repetitive cost. Improved speed in receiving and processing instruction. Reduced crowding in banking halls.

To the Clients: Enjoy Direct Deposit, Ease of Account Access and Convenience, Customers can carry out their transaction without waiting in a line for service and It saves costs for stationary and cheque books E-Banking also makes it easier for customer to compare banks services and products hence give clients a variety of choices to make.

The challenge is that developing a successful e-banking initiative for poorer people entails managing of a host of interrelated issues, technology, pricing, financial problems functionality, delivery channels and regulations. The study found out also the challenges of e banking: Poor Telecommunication Infrastructure, Security Concerns, and Poor Internet Accesses.

Relationship between the level of opportunities and challenges of e banking and organizational performance

The study found a relationship between the level of opportunities and challenges of electronic banking and the level organizational performance of indigenous banks of Rwanda, for which it was not significantly correlated. To test this hypothesis, Pearson's Linear Correlation Coefficient (PLCC) was used. The results show that there is a positive significant relationship between the level of opportunities and challenges of electronic banking and the level of organizational performance of indigenous banks in Rwanda. For instance the level of opportunities and challenges of electronic banking is positively and significantly correlated with organizational performance of indigenous banks of Rwanda ($r=0.980$, sig. $=.000$), it means that the opportunities and challenges of electronic banking have a considerable influence on the organizational performance of electronic banking. The researcher rejected the null hypothesis and affirmed that there is a significant relationship between the level of opportunities and challenges of electronic banking and the level of organizational performance of indigenous banks in Rwanda.

The ANOVA analysis depict that there is no variation ($df = 1$) in the variables hence a positive regression and correlation of the relationships is viable.

CONCLUSION

Testing hypothesis

After testing the null hypothesis to establish whether there is a significant relationship between opportunities and challenges of electronic banking and organizational performance in study revealed a significant value of less than 0.05($r=0.980$, significant:0.000). This led to conclude that opportunities and challenges of electronic banking positively and significantly correlate to organizational performance.

Validating the theory

Basing on the study findings the study concludes that the theory of Brian Mantel (2000) is very valid.

Generation of new information

This study generated new detail information in this area of study and it is relevant of great help to BRD, BNR, stakeholders and future researchers.

Bridging the gap

The study bridged contextual gap since there is no similar studies that was concerned out on national bank of Rwanda and development bank of Rwanda. Banks have to upgrade and constantly think of new innovation, customer packages and services to remain competitive. The invasion of banking by the technology has created an information age and prioritization of banking services.

Banks have come to realize that survival in the new economy depends on delivery of some or all their banking services on the Internet while continuing to support their traditional infrastructure. The rise of e-banking is redefining business relationship and the most successful banks will be those that can truly strengthen their relationship with

their customers and without any doubt, the international scope of e-banking provides new growth perspective and Internet business is a catalyst for a new technology and new a business process.

RECOMMENDATION

Establish Goals and Monitor Performance-Performance goals measure the success of the PC banking program. The program should be re -evaluated periodically in light of strategic plans, customer satisfaction, and new technologies.

The resources should be sufficient to:

Provide Adequate Training- The institution's staff should be properly trained to implement the program. Specifically, they should be educated on new security procedures and control practices. Qualifications of external personnel should be evaluated prior to contracting with the vendor.

Provide Adequate Support Staff- Support staff (e.g., call center staff and customer service representatives) should be kept informed of any changes or updates to the program.

Establish adequate insurance coverage- Insurance providers should be consulted to confirm adequate coverage for e -banking activities.

An institution's information technology plan should include consideration of future system upgrades as more sophisticated security techniques and user options are developed.

To help ensure a secure e banking program that continues to meet customer needs, management should:

Management should evaluate new products, services, and vendors against strategic plan and in light of the aforementioned risks.

Budget for Technology Upgrades-Appropriate consideration should be given to the costs of technological upgrades to maintain appropriate security and adapt to customer expectations.

Management should consider the risks created by reliance on systems whose performance is beyond their control.

To ensure the institution has a reliable PC banking program, management should establish:

Policies and procedures-Policies can be used to delineate management's expectations, benchmarks, and standard operating procedures. Standardized procedures will also help to provide consistent service.

Financial institution should evaluate the risk associated with e banking and implement sound controls. Management and the Board should implement a comprehensive program to manage the inherent risks prior to implementation of e banking activities.

AREA FOR FURTHER RESEARCH

A study could be carried out to enlighten on the following areas.

How conduit institutions such as insurance firms and pension schemes can benefit from electronic services and products.

To find out the disparity that exists in the application of electronic commerce in Rwanda's businesses.

To find out the opportunities and challenges facing E-banking legislation.

A research to find out why there is more rapid adoption of electronic banking in the corporate sector than in the consumer market.

REFERENCES

- Acharya, R. and Lingam, A. (2008). Online banking applications and community bank performance. *The International Journal of Bank Marketing*, Vol. 26 No. 6, 2008 pp. 418-439
- Akinci, S., Aksoy, S., Atilgan, E. (2004). Adoption of Internet banking among sophisticated consumer segments in an advanced developing country. *The International Journal of Bank Marketing* Vol. 22 No. 3, 2004 pp. 212-232
- Aladwani, A. (2001). Online banking: A field study of drivers, development challenges, and expectations. *International Journal of Information Management*, 21(3), 213–225.
- Almogbil, A. (2005). Security, Perceptions, and Practices: Challenges facing Adoption of Online Banking in Saudi. Unpublished Ph.D. Thesis, George Washington University, Washington.
- Barczak, G., Ellen, P.S. and Pilling, B.K. (1997). Developing typologies of consumer motives for use of technologically based banking services. *Journal of Business Research*, Vol. 38 No. 2, pp. 131-9.
- Broderick, A. and Vachirapornpuk, S. (2002). Service quality in Internet banking: the importance of customer role. *Marketing Intelligence & Planning*, Vol. 20, No. 6, pp. 327 – 335
- Business Wire (1995). Stanford federal credit union pioneers online financial services.

- Business Wire, June 21, 1995.
- Casalo, L., Flavia'n, C., Guinali'u, M. (2007). The role of security, privacy, usability and reputation in the development of online banking. *Online Information Review*, Vol. 31 No. 5, 2007 pp. 583-603
- Chong, A., Ooi, K., Lin, B., Tan, B. (2010). Online banking adoption: an empirical analysis. *International Journal of Bank Marketing*, Vol. 28 No. 4, 2010 pp. 267-287
- Davis, F.D. (1989). 'Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, Vol. 13 No. 3, pp. 319-39. JIBC August 2011, Vol. 16, No.2- 22 -
- Daniel, E. (1999). Provision of electronic banking in the UK and the Republic of Ireland. *International Journal of Bank Marketing*, Vol. 17 No.2, 1999 pp.72-82
- Eriksson, K. Kerem, K., Nilsson, D. (2004). Customer acceptance of internet banking in Estonia. *International Journal of Bank Marketing*, Vol. 23 No. 2, 2005 pp. 200-216
- Gikandi, J., Bloor, C. (2009). Adoption and effectiveness of electronic banking in Kenya. *Electronic Commerce Research and Applications*, Vol. 9 (2010), pp. 277–282.
- Guriting, P. (2006). Borneo online banking: evaluating customer perceptions and behavioural intention. *Management Research News*, Vol. 29 No. 1/2, 2006 pp. 6-15

- Grabner-Krautter, S. (2008). Consumer acceptance of internet banking: the influence of internet trust. *International Journal of Bank Marketing*, Vol. 26 No. 7, 2008 pp. 483-504
- Gurau, C. (2002). Online Banking in transition economies: the implementation and development of online banking system in Romania. *International Journal of Bank Marketing* Vol. 20 No. 6, 2002, pp285-296
- Hasim, M. and Salman, A. (2009). Factors affecting sustainability of internet usage among youth. *The Electronic Library*, Vol. 28 No. 2, 2010 pp. 300-313
- Huang, X., Soutar, G.N., & Brown, A. (2004). Measuring new product success: An empirical investigation of Australian SMEs. *Industrial Marketing Management*, 33(2), 117–123.
- Hood, J.M. (1979). Demographics of ATMs. *Banker's Magazine*, November-December,

Appendix 1 - Transmittal Letter



Ggaba Road - Kansanga
P.O. Box 20000, Kampala, Uganda
Tel: +256 - 414 - 266813 / +256 - 772 - 322563
Fax: +256 - 414 - 501 974
E-mail: admin@kiu.ac.ug
Website: www.kiu.ac.ug

**OFFICE OF THE HEAD OF DEPARTMENT, ECONOMICS AND
MANAGEMENT SCIENCES
COLLEGE OF HIGHER DEGREES AND RESEARCH (CHDR)**

Date: 30th May, 2012

**RE: REQUEST MAZIMPAKA NOBERT MBA/36299/113/DU TO
CONDUCT RESEARCH IN YOUR ORGANIZATION**

The above mentioned is a bonafide student of Kampala International University pursuing Masters of Business Administration (Finance and Accounting).

He is currently conducting a research entitled **"Opportunities And Challenges Of Electronic Banking Facing Indigenous Banks In Rwanda"**

Your organization has been identified as a valuable source of information pertaining to his research project. The purpose of this letter is to request you to avail him with the pertinent information he may need.

Any information shared with him from your organization shall be treated with utmost confidentiality.

Any assistance rendered to him will be highly appreciated.

Yours truly,


Mr. Malinga Ramaghan
Head of Department,
Economics and Management Sciences, (CHDR)

NOTED BY:

Dr. Sofia Soli T. Gaite
Principal-CHDR

"Exploring the Heights"

Appendix II - Clearance from Ethics Committee

Date_____

Candidate's Data

Name_____

Reg.#_____

Course_____

Title of Study_____

Ethical Review Checklist

The study reviewed considered the following:

Physical Safety of Human Subjects

Psychological Safety

Emotional Security

Privacy

Written request for Author of Standardized Instrument

Coding of Questionnaires/Anonymity/Confidentiality

Permission to Conduct the Study

Citations/Authors Recognized.

Results of Ethical Review.

Approved

Conditional (to provide the Ethics Committee with corrections)


Disapproved/ Resubmit proposal.

Ethics Committee (Name and Signature)

Chairperson_____

Members_____

Appendix III – Informed consent

 Tel: (250) 575079/575080; Fax: (250) 573569; P.O Box: 1341 Kigali-Rwanda; email: brd@brd.rw

Kigali, 08/06/2012

N°DIR/ /DCA/RH/MBJ/mbj

1448

✓ MAZIMPAKA Norbert
Kampala International University (KIU)
Tel: 0788 681 472
E-mail: mazimpaka@yahoo.com
Kigali – Rwanda

Re: Your request for carrying out research and data collection

Dear Sir,

We acknowledge receipt of your letter on May 5th 2012 through which you requested the Bank to carry out a research and data collection on “opportunities and challenges of electronic banking facing indigenous banks in Rwanda”.

We are pleased to inform you that you are allowed to conduct your research in our organization.

Thanking you for your interest to our Bank, we remain,

Yours Sincerely,


KAYUNGA M. Stephen
Human Resources Manager




MUTIJIMA T. Hector
Director of Corporate Affairs

Banque Rwandaise de Développement
A Public Company Limited by shares, share Capital RWF 7,000,000,000
Company Code: 100002547, SWIFT Code: BRDHRW, VAT/TIN: 100002547, Website: www.brd.rw

Appendix IV - Research Instrument

QUESTIONNAIRE

Dear Sir/ Madam

I am a candidate for Master of Business Administration at Kampala International University and currently pursuing a Thesis entitled opportunities and challenges of electronic banking on organizational performance of indigenous banks in Rwanda.

In view of this empirical investigation, may I request you to be part of this study by answering the questionnaires. Rest assured that the information that you provide shall be kept with utmost confidentiality and will be used for academic purposes only.

As you answer the questionnaire, be reminded to respond to the items in the questionnaire thus not leave any item unanswered. Further, may I retrieve the filled out questionnaire within 5 days from the date of distribution?

Thank you very much in advance

Yours faithfully

Mr. Mazimpaka Norbert

RESEARCHER'S CURRICULUM VITA

To document the details of the researcher, his competency in writing a research and to recognize his efforts and qualifications, this part of the research report is thus meant.

Personal Profile

Gender: Male

Name: MAZIMPAKA Norbert

Nationality: RWANDAN

Educational Background

Master of Business Administration (K.I.U) (2012)

Bachelor of Arts in Management with Education (INATEK /KIBUNGO) (2010)

A LEVEL APAGIE/MUSHA /KIGALI CITY (2003)

Work Experiences

2 years Secondary School Teaching /APEM/NGARAMA

3 years as accountant in Ngarama health center

2 years as cashier in Banque populaire du Rwanda ltd

1 year as Managing Director of LION BIG TRADING COMPANY LTD

