



ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

**CHALLENGES AND PROSPECTS OF ELECTRONIC
BANKING; THE CASE OF DASHEN BANK**

By

ADDIS BOGALE TERESA

JUNE, 2017

ADDIS ABABA, ETHIOPIA

**CHALLENGES AND PROSPECTS OF ELECTRONIC BANKING;
THE CASE OF DASHEN BANK**

By

ADDIS BOGALE TERESA

**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES ST.
MARY'S UNIVERSITY IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS
ADMINISTRATION (GENERAL MBA)**

JUNE, 2017

ADDIS ABABA, ETHIOPIA

ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES

CHALLENGES AND PROSPECTS OF ELECTRONIC BANKING;
THE CASE OF DASHEN BANK

By

ADDIS BOGALE

APPROVED BY BOARD OF EXAMINERS

Dean, Graduate Studies

Signature & Date

Advisor

Signature & Date

External Examiner

Signature & Date

Internal Examiner

Signature & Date

DEDICATION

I dedicate this work to my late mother Tewabech W/Eyesus and to my friends for their love and encouragement

ACKNOWLEDGEMENTS

I am most grateful to Almighty God who through His infinite mercy and love guided me throughout the duration of the program.

I am deeply grateful to my advisor Dr. Afework Getachew for his precious comments and suggestions during the course of this study. In addition to his contribution to this thesis,

I also like to thank his thoughtful contributions to my stock of knowledge. I am extremely indebted to my friends; especially, Kalkidan, Emnet and Semhal for their support and encouragement throughout my life.

Last but not least, I would like to express my deep gratitude to the staffs and managers of the Six Branches of Dashen Bank who participated in this study during the data collection process. Finally

I would like to thank Dashen Bank Airport Branch for granting me a study leave.

Table of Contents

Acknowledgements.....	i
List of Table.....	iv
Acronyms.....	vi
Abstract.....	vii
CHAPTER ONE: Introduction.....	1
1.1 Background of the Study.....	1
1.2 Statement of the Problem.....	2
1.3 Basic Research Questions.....	5
1.4 Objectives of the Study.....	5
1.4.1 General Objective.....	5
1.4.2 Specific Objectives.....	6
1.5 Significance of the Study.....	6
1.6 Scope of the Study.....	7
1.7 Organization of the Research Report.....	7
CHAPTER TWO: Literature Review.....	8
2.1 Theoretical Review.....	8
2.1.1 Introduction to E-Banking.....	8
2.1.2 Definition of E-Banking.....	9
2.1.3 Evolution of E-Banking.....	10
2.1.4 E-Banking Channels.....	11
2.1.4.1 Internet banking.....	11
2.1.4.1.1 Growth in Internet Banking.....	12
2.1.4.2 Types, Benefits and Features of Electronic Payment Methods.....	13
2.1.4.2.1 Types.....	13

2.1.4.2.2 Benefits of E-Cards.....	14
2.1.4.3 Mobile Banking.....	14
2.1.4.4 Tele Banking	15
2.1.4.5 Home Banking.....	15
2.1.4.6 Point of Sale Terminal.....	15
2.1.4.7 Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT) ..	16
2.1.5 Importance of E-Banking	16
2.1.5.1 From the Banks Point of View	16
2.1.5.2 Benefits from the Customers' Point of View	18
2.1.5.3 Benefits to General Economy.....	18
2.1.6 E-Banking Risks.....	19
2.1.7 Typical Security Technologies Applicable to Control System Networks.....	21
2.1.8 Banking in Ethiopia.....	23
2.1.8.1 Banking History in Ethiopia.....	23
2.1.8.2 Review of Commercial Banking Practices in Ethiopia	24
2.2 Empirical Evidence.....	25
2.2.1 Challenges and prospects of E-Banking Adoption.....	25
2.2.2 Perceived Advantages that Initiate Banks to Adopt E-Banking.....	27
2.2.3 Drivers and Barriers of E-Banking Adoption.....	28
CHAPTER THREE: Research Methodology	29
3.1 Introduction.....	29
3.2 Research Design.....	29
3.3 Sampling Techniques.....	29
3.4 Data Source.....	31
3.5 Validity and Reliability of Instruments.....	32
3.5.1 Validity.....	32

3.5.2 Reliability	32
3.6 Method of Collection	32
3.7 Method of Data Analysis	33
3.8 Ethical Considerations	33
CHAPTER FOUR: Data Analysis and Interpretation.....	34
4.1 Response Rate.....	34
4.2 Demographic Characteristics of Respondents	34
4.3 Push Factors for Implementation and Expansion of E-Banking.....	36
4.4 Benefits Realized from the Implementation and Expansion of E-banking in Dashen Bank ..	38
4.4.1 Operational Benefits.....	39
4.4.2 Service Benefits.....	40
4.5 Challenges of Implementation and Expansion E-banking Technology in Dashen Bank	41
4.5.1 Organizational Factors	42
4.5.2 Environmental Factors	43
4.5.3 Technological Factors	45
4.6 Opportunities for Implementation and Expansion of E-Banking Technology in Dashen Bank.	
.....	46
CHAPTER FIVE: Conclusions and Recommendation.....	48
5.1 Conclusion	48
5.2 Recommendations.....	49
References.....	51
ANNEXES	55

List of Table

Table 1: Response rate	34
Table 2: Demography of the respondent.....	35
Table 3: Push factors.....	37
Table 4: operational benefits of E-banking.....	39
Table 5: Service benefits of E-banking.....	40
Table 6: Organization Factors Affecting implementation and expansion of E-Banking Technology in Dashen bank.....	42
Table 7: Environmental Factors Affecting implementation and expansion of E-Banking Technology in Dashen bank.....	44
Table 8: Technological factors that affecting the implementation and extending of E-banking technology in Dashen bank.....	45
Table 9: Opportunities for implementation and expansion of E-Banking technology in Dashen Bank.....	46

ACRONYMS

ATM	Automated teller machine
DB	Dashen Bank
E-banking	Electronic banking
E-Channels	Electronic Channels
IT	Information technology
PC	Personal computer
POS	Point of sale
PIN	Personal identification number
FTOC	Fund transfer out going customer transfer
FTCH	Fund transfer out going customer transfer by check
SSL	Secure socket layer
NAT	Network Address Translation
ROI	Return on investment
ICT	Information communication technology
SPSS	Statistical package for social science

ABSTRACT

The purpose of this study is to evaluate the implementation and expansion of E-banking technology in Dashen bank. Dashen bank employees in Addis Ababa are the target population. Purposive sampling technique was used to select the sample from the target population. Accordingly the total sample size for the study is 172 employees from selected six branches found in east district. Descriptive research design was employed to conduct this study by using questionnaire. The result of the study indicated that, existence of high competition in the banking industry and rapid change of customer needs and preferences were the main push factors for implementation and expansion of E-Banking technology in Dashen bank, in which mean score are founded 4.67 and 4.52, respectively. The study identified service and operational benefits from implementation and expansion of E-banking technology and as operational benefits it reduces paper work; enhance foreign currency generation and increase reliability and reducing errors and as service benefit E-banking is convenient, in terms of 7 days and 24 hours service i.e. accessibility (Mean = 4.72), Enhance accessibility of the bank's service (in terms of place) (Mean = 4.55) and Improve customer service (Mean = 4.30). The major challenges Dashen bank faces in the implementation and expansion of E-banking technology are, cost of ICT equipment and network, software and re-organization and lack of technical and managerial skills, absence of financial networks that links different banks, lack of law mandating the bank to adopt E-banking technology, loss of audit trail and lack of confidence with the security aspects. The study also indicated existing opportunities for E-banking implementation and expansion such as increment of educated potential customer, improvement in the banking habit of the society, late adopter opportunities and the existence of high demand for E-banking service. Finally the study recommended banks to facilitate proper and continuous training for their employees, increasing security for E-banking products, create deep awareness about E-banking technology to the community while the government should support banking sector by facilitating sufficient ICT infrastructure development and issue clear and workable legal frameworks to ease the implementation and expansion of E-banking technology.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Like all other social entities the financial institutions are being constantly shaken by technological innovations and inventions. For instance, till recently bank clients were used to stand in line and perform their financial transactions, but now because of the development of the Information and Communication Technology (ICT) and introduction of E-Banking they can perform it at any time and even from home. In E-Banking funds are transferred through electronic signals between financial institutions, rather than exchange of cash, cheques or other negotiable instruments. In E-Banking Automated Teller Machine (ATM), debit cards, password, Mobile Banking, Internet Banking and Personal Identification Numbers (PIN) are used for funds transfer; and the transfers of funds between financial institutions are recorded on computer systems connected by electronic lines. Customer identification and access to the electronic transaction system is ensured by code, such as password or PIN, instead of a signature on cheques or other documents. Basic services of E-Banking are: (i) view account balances and transaction histories, (ii) paying bills, (iii) transferring funds between accounts, (iv) requesting debit card advanced, and (v) ordering checks. One of a very important characteristic of E-Banking services is the client's uninterrupted round-the-clock access to account. It reduces service and transport costs, sinks radically wastage of time, increases speed of the services and enhances the comfort of making payments (Shyamapada B, Abu T., and Salman S. Shinwary, 2011).

According to Mary and Brian the three technological realities allowing for the development of online banking are the computer, the Internet, and encryption and firewalls (the development of secure transmitting systems over the expansive, wide-open world of the Internet) (Dixon and Nixon, 2000).

In May 1995, Wells Fargo became the first bank in the world (according to the Online Banking Report) to begin offering customers access to their accounts over the internet. However, this early system only allowed customers to see, not access, their accounts. Wells Fargo has a come a

long way since the days when it transmitted or delivered money in a stage coach. Today, it is a leader in electronic banking. Wells Fargo (*www.wellsfargo.com*) no longer moves at the speed of horses but rather at the speed of electrons.

The growth of the Web and Internet as new channels, the growth in their use by customers, and the floor of companies entering the market, presents a series of key challenges to companies. It is easy and cheap to put up a website. But to create an environment delivering effective service on the Web to a significant proportion of your customer base requires an E-Banking strategy. Electronic Banking offers different online services like balance enquiry, request for cheque books, recording stop payment instructions, balance transfer instructions, account opening and other form of transitional Banking services. (Shyamapada B, Abu T., and Salman S. Shinwary, 2011)

As per Dashen bank's website, Dashen bank is the first bank established in 2006 G.C in Ethiopia to provide a full-fledged payment card services as a principal plus member of visa international and master card, the world leader card association. The bank is engaged in both card issuing and transaction acquiring business. Dashen bank's current E-Banking services are ATM, POS, Internet banking, Mobile banking and Agency banking that could be used to effect payment at merchant outlets and to withdraw cash from ATM machines installed at different location in the country.

As per Annual Report of Dashen Bank, 2015, the card acceptance network has expanded to 115 Automatic Teller Machine (ATM) and 788 point of sale (POS) terminals. The total numbers of cardholders are 263,598 as per E-Banking policies and procedures manual, 2007 Visa card is uniquely identified by its embossed feature as it is designed to be used both on electronic terminals and paper based merchant outlets. Therefore, this study is designed to assess challenges and prospects of E-Banking in Dashen bank.

1.2 Statement of the Problem

In this era of globalization, with increased competition around the globe in all sectors, a strong Banking industry is important in every country and can have a significant effect in supporting Economic development through efficient financial services; as a result many banks in the World

are modifying their strategies to reach customers worldwide more easily and cheaply. Therefore, banks are developing the technologies that will help them deliver banking products and services by the most cost-effective channels and one of such channel are implementation of E-banking or electronics banking. E-Banking is a way to keep existing customers and attract new Ones to the bank. The transaction costs of providing these services are lower than the traditional approach. The rapidly growing information and communication technology is knocking the front door of every organization in the world (Booz & Hamilton, 1997).

Despite this growth of IT worldwide, Ethiopian banks continue to conduct most of their banking transactions using traditional methods. In Ethiopia, however, cash is still the most dominant medium of exchange, and electronic payment systems are at an infant stage. In the face of rapid expansion of electronic payment systems throughout the developed and the developing world, Ethiopia's financial sector remain behind in expanding the use of the system. Certainly, the banking industry in Ethiopia is underdeveloped. With a growing number of import-export businesses, and increased international trades, increase the demand of the customer and international relations, the current banking system is short of providing efficient and dependable services. Debit cards, Credit cards, Tele banking, Internet banking, Mobile banking and others are new to the Ethiopian banking sector. E-Banking which refers to the use of modern technology that allows customers to access banking services electronically whether it is to withdraw cash, transfer funds, to pay bills, or to obtain commercial information and advices are little known in Ethiopia (Mohammad ,2008).

In Ethiopia, it is difficult to withdraw money without presenting the passbook even if it is recently amended in some bank's Dashen bank is one example for this to withdraw money up to 5000.00 (five thousand) by presenting identity card only and money transfer is allowed only in between branches of the same bank is also looked by some bank's specially Dashen bank have been working on this system and it is possible to transfer money from one bank to another by the system called FTOC (Fund transfer out going customer transfer) and FTCH (Fund transfer out going customer transfer by check) However, it is week in that of delivering to the customers the transferred money from the public and the economy there is a strong need for strengthening linkages among banks in order to allow healthy flow of financial resources among financial

institutions and optimize the contributions of the entire financial system to the development processes as whole. (Dashen Bank, August 2016)

As stated on Dashen bank's mission statement, Dashen bank is a business organization engaged in delivery of financial services efficiently and customer focused domestic and international banking services. However it requires a better knowledge about the need of its customers, so it is important to know the need of the customers and integrate it to the entire system.

As per of the researcher observation on E-Banking manual and a discussion with some of the users as part of a preliminary survey, the existing E-banking service of Dashen bank has some shortcoming that may reduce user's satisfaction, some of the inherent problems are summarized as follows:

- E-Banking is a new technology especially for developing countries like Ethiopia because of this, there is lack of awareness about the importance of the service
- Dashen bank's E-Banking service includes issuing countrywide debit cards but the bank is not in a position to issue international debit and credit card due to the tight foreign currency regulation by National Bank of Ethiopia; because of this Ethiopian people travelling abroad are obliged to carry a lot of paper money instead of a single card.
- The Dashen bank's two main software (core banking and flex cube base 24) which enable the bank to implement E-Banking especially carding systems are highly dependent on Ethio-Telecom internet broad band system. If any connection problem from Ethio-Telecom happens, the whole networking system will be offline. This means every customer account will not be updated automatically till the system became online.
- The bank's Automatic Teller Machines (ATM) are installed mostly around business centers and high service areas, however those ATM's mostly become out of money depending on users need and amount of transaction so, most of the time customers face shortage of money.
- Dashen bank is the only bank that issue American express golden and green card to its customers however, with in one day that card allows the customer to withdraw ETB

60,000.00 and 25,000.00 respectively but the customer is expected to have initial deposit of 100,000.00 and 25,000.00 respectively.

- The other problem in E-Banking service of Dashen bank is the amount allowed to withdraw for domestic customers within 24 hours for cash withdrawal is limited to be ETB 5,000.00 (five thousand) in ATMs and ETB 8,000.00 (eight thousand) in POS. (www.dashenbank.com).

Therefore this study intended to identify factors that positively or adversely affect E- Banking system based on the research problems discussed above

1.3 Basic Research Questions

The research tries to address following questions:

1. What are the practice E-Banking service at Dashen bank ?
2. What are the push factors towards the implementation of E-Banking service in Dashen bank?
3. What are the major benefits of E-Banking service from the viewpoint of the bank?
4. What are the major challenges for the implementation and expansion of E-Banking service in in Dashen bank?
5. What are the existing opportunities for the expansion of E-Banking service in Dashen bank?

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of this study is to assess the challenges and prospects of E-Banking in the case of Dashen bank.

1.4.2 Specific Objectives

The specific objectives of the study are:

- To explore the current practice of E-Banking service in Dashen bank
- To find the benefits realized by the bank in the practice of E-Banking to compliment its service delivery channels.
- To identify the push factors towards the implementation of E-Banking service in Dashen bank
- To identify the major challenges for implementation and expansion of E-Banking service in Dashen Bank.
- To identify the existing opportunities for the expansion of E-Banking service in Ethiopia.

1.5 Significance of the Study

One of the products of global technological changes is the advent of electronic banking (E-Banking). E-Banking has become prevalent and employed by many financial institutions to reduce costs associated with having personnel serve customers physically, shorten processing periods, increase speed, improve flexibility of business transaction and provide better service in all (Shih & Fang, 2004).

In our country Ethiopia banking industry is expanding rapidly. The overall effect of E-Banking is not limited to Dashen bank, but also it affects the overall economy of the country. Therefore, the study is significant in assessing the challenges and prospect of E-Banking service which helps to identify the prevailing problems and give possible recommendation to solve them. Besides, it gives some idea about the challenges and prospect of E-Banking service to the reader and researchers who are interested in this area of study as a preliminary study.

1.6 Scope of the Study

This study is delimited to Dashen bank, but it is more productive if the study included all banks that offer E-Banking service. The researcher conducted the study on a sample base because Dashen bank has 263,598 numbers of cardholders in more than 260 branches in Addis Ababa and upcountry. Hence it is difficult to assess all those branches because of the researcher's time and resource limitation. Moreover, the study focuses only on the assessment of the opportunities and challenges for the adoption of e-banking from the viewpoint of the bank.

1.7 Organization of the Research Report

This study is organized into five chapters. The first chapter includes the background of the study, statement of the problem, basic research questions, objectives of the study, definition of terms, significance of the study, and delimitation and scope of the study. The second chapter has the literature review followed by the third chapter, method of the study, describing the type and design of the research. The fourth chapter shows the results or findings of the study and discussions of findings. And the last chapter presents the summary, conclusion, and recommendation part of the study.

CHAPTER TWO

Literature Review

This chapter contains both the theoretical and empirical review of the study. The theoretical framework includes: introduction to E-Banking, definition of E-Banking, evolution of E-Banking, E-Banking channels, importance of E-Banking, E-Banking risks and banking in Ethiopia respectively. In addition, it also includes empirical review of the study from different researchers in different countries.

2.1 Theoretical Review

2.1.1 Introduction to E-Banking

According to Mohammed shamsuddoha (2008), electronic Banking is transforming the financial services industry through various innovations. The quantity of cross-border trading and other financial activities is increasing geometrically make possible by technology. It has been made possible by technology, particularly information technology to generate, collect and process information about bank operation and bank customers efficiently and effectively.

It provides the ability to create more effective systems of controls in individual institutions and in the market themselves. Compared to the paper based operation, Electronic Banking Systems, in its most proficient form, offer instant verification and transfer and reduces the flow of costly paper in the record keeping process. Application of technology results efficient resource utilization. Banks have developed electronic banking service for three main reasons.

- To protect and increase market share
- To reduce operating cost by substituting physical capital and technology for labor
- To generate new revenue

Electronic banking allow banks to expand their markets for traditional deposit taking and credit extension activities, and to offer new products and services or strengthen their competitive position in offering existing payment services. In addition, electronic banking could reduce

operating costs for banks. More broadly, the continued development of electronic banking and electronic money may contribute to improving the efficiency of the banking and payment system and to reducing the cost of retail transactions nationally and internationally. Although many financial instrument and systems are now considered as “Electronic Banking” came into the terminology of the financial world in the late 1980s, with the possibility of emergence of true electronic money. All sorts of back-office information management technology and financial services using electronic devices can be included into the term “Electronic Banking”. The development in information technology has contributed positively to economic growth through several channels. ICT has led to a productivity growth through the impact on activity processes. Banks have been increasing their own size and financial strength and expanding the scope of their products lines to meet the growing demand of their customers.

2.1.2 Definition of E-Banking

E-Banking is the modern delivery channel for banking services. Banks have used electronic channels for years to communicate and transact business with both domestic and international corporate customers. With the development of the Internet and the World Wide Web (WWW) in the latter half of the 1990s, banks are increasingly using electronic channels for receiving instructions and delivering their products and services to their customers. This form of banking is generally referred to as E-Banking or Internet banking, although the range of products and services provided by banks over the electronic channel vary widely in content, capability and sophistication. E-Banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. The definition of E-Banking varies amongst researches partially because electronic banking refers to several types of services through which bank customers can request information and carry out most retail banking services via computer, television or mobile phone (Daniel, 1999; Mols, 1998; Sathye, 1999). For example, Burr (1996) describes it as an electronic connection between bank and customer in order to prepare, manage and control financial transactions.

According to Singh & Malhotra (2004), E-Banking can be defined as the deployment of banking services and products over electronic and communication networks directly to customers. These

electronic and communication networks include Automated Teller Machines (ATMs), direct dial-up connections, private and public networks, the Internet, televisions, mobile devices and telephones. Among these technologies, the increasing penetration of personal computers, relatively easier access to the internet and particularly the wider diffusion of mobile phones has drawn the attention of most banks to E-Banking . **E- banking** includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet or mobile phone.

Customers access E-Banking services using an intelligent electronic device, such as a personal computer (PC), personal digital assistant, automated teller machine (ATM), kiosk, or Touch Tone telephone. Or ‘E-Banking refers to the provision of retail and small value banking products and services through electronic channels. Such products and services can include deposit-taking, lending, account management, the provision of financial advice, electronic bill payment, and the provision of other electronic payment products and services such as electronic money.

2.1.3 Evolution of E-Banking

Since the late 1990s E-Banking has developed from virtual insignificance to tens of millions of users worldwide (OECD, 2001). However, E-Banking is the product of different generations of electronic transactions. The current web-based internet is the latest of several generations of systems: Automated Teller machine (ATMs), Phone Banking, PC or House Banking. Automated teller machines (ATMs) were the first well-known machines to provide electronic access to customers where as in phone banking, users call their bank’s computer system on their ordinary phone and use the phone keypad to perform banking transactions. PC banking superseded phone banking and allowed users to interact with their bank by means of a computer with a dial-up modem connection to the phone network. Phone and PC banking entailed maintenance costs associated with keeping up to date with diverse modems and with avoiding prohibitively complex installation procedures. After those generations Deutsche Bank launched the very first Internet banking project in Latin America in 1996 and Citibank has developed a special “e-toolkit” across all its branches worldwide (UNCTAD, 2002).

E-Banking uses the web browser for the user interface and the Internet for data transfer and download of software, and so has a potential for reducing maintenance costs. For users, E-Banking provides current information, 24-hours-a-day access to banking services. The primary services provided by e-banks are transferring money among one's own accounts, paying bills, and checking account balances. Loans, brokering, share trading, service bundling, and hosts of other financial services are being added to these primary services). E-Banking is widely used in, among other places (Dewan & Seidmann, 2001).

2.1.4 E-Banking Channels

2.1.4.1 Internet banking

According to Booz, Allen & Hamilton (1999), "Internet banking" refers to systems that enable bank customers to access accounts and general information on bank products and services through a personal computer (PC) or other intelligent device. Internet banking products and services can include wholesale products for corporate customers as well as retail and fiduciary products for consumers. Ultimately, the products and services obtained through Internet banking may mirror products and services offered through other bank delivery channels.

Based on the levels of access granted, internet-banking products are divided into 3 types. They are:

- I) Information Only System:** General purpose information like interest rates, branch location, bank products and their features, loan and deposit calculations are provided in the banks website. There exist facilities for downloading various types of application forms. The communication is normally done through e-mail. There is no interaction between the customer and bank's application system. No identification of the customer is done. In this system, there is no possibility of any unauthorized person getting into production systems of the bank through internet.
- II) Electronic Information Transfer System:** The system provides customer- specific information in the form of account balances, transaction details, and statement of accounts. The information is still largely of the 'read only' format. Identification and authentication of the customer is through password. The information is fetched from

the bank's application system either in batch mode or off-line. The application systems cannot directly access through the internet.

III) Fully Electronic Transactional System: This system allows bi-directional capabilities. Transactions can be submitted by the customer for online update. This system requires high 11 degree of security and control. In this environment, web server and application systems are linked over secure infrastructure. It comprises, technology covering computerization, networking and security, inter-bank payment gateway and legal infrastructure (Booz, Allen & Hamilton 1999).

2.1.4.1.1 Growth in Internet Banking

Numerous factors including competitive cost, customer service, and demographic considerations are motivating banks to evaluate their technology and assess their electronic commerce and Internet banking strategies. Many researchers expect rapid growth in customers using online banking products and services.

Some of the market factors that may drive a bank's strategy to use internet banking include the following:

Competition - Studies show that competitive pressure is the chief driving force behind increasing use of internet banking technology, ranking ahead of cost reduction and revenue enhancement, in second and third place respectively. Banks see internet banking as a way to keep existing customers and attract new ones to the bank.

Cost Efficiencies - banks can deliver banking services on the internet at transaction costs far lower than traditional brick-and-mortar branches. The actual costs to execute a transaction will vary depending on the delivery channel used. For example, according to Booz, et.al, as of mid-1999, the cost to deliver manual transactions at a branch was typically more than a dollar, ATM and call center transactions cost about 25 cents, and internet transactions cost about a penny. These costs are expected to continue to decline. Banks have significant reasons to develop the technologies that will help them deliver banking products and services by the most cost-effective channels.

Geographical Reach - Internet banking allows expanded customer contact through increased geographical reach and lower cost delivery channels. In fact some banks are doing business exclusively via the internet; they do not have traditional banking offices and only reach their customers online. Other financial institutions are using the internet as an alternative delivery channel to reach existing customers and attract new customers.

Branding - Relationship building is a strategic priority for many banks. Internet banking technology and products can provide a means for banks to develop and maintain an ongoing relationship with their customers by offering easy access to a broad array of products and services. By capitalizing on brand identification and by providing a broad array of financial services, banks hope to build customer loyalty, cross-sell, and enhance repeat business.

Customer Demographics - Internet banking allows banks to offer a wide array of options to their banking customers. Some customers will rely on traditional branches to conduct their banking business. For many, this is the most comfortable way for them to transact their banking business. Those customers place a premium on person-to-person contact. Other customers are early adopters of new technologies that arrive in the marketplace. These customers were the first to obtain PCs and the first to employ them in conducting their banking business. The demographics of banking customers will continue to change. The challenge to banks is to understand their customer base and find the right mix of delivery channels to deliver products and services profitably to their various market segments.

2.1.4.2 Types, Benefits and Features of Electronic Payment Methods

2.1.4.2.1 Types

Cheques and drafts have replaced the traditional payment system with money as a medium of settlement and further development in the field has been with the advent of electronic cards.

The most commonly used electronic cards include ATM cards, Debit cards, Credit cards and Smart cards. ATM card is a kind of plastic card, which allows a cardholder to withdraw money from his bank account through automated teller machine. This card can be used also for other

banking services like deposit and transfer to any other account by using the ATM machine. Credit card is the modern electronic plastic card that may be used repeatedly to borrow money or buy products and services on credit. VISA, Master Card, American Express and Discover is commonly known and widely used credit cards throughout the world. The decision with which card to go depends on the comparison of the features of the specific card (not the brand). The most important features, of course, are Interest rate and Annual fees.

Debit cards are electronic plastic cards directly tied to bank account and the amount of money the cardholder can spend with it is limited to the amount of money he/she has in the bank. It is called debit card because when cardholder uses a debit card, the transaction debits (withdraws) the amount of the transaction from cardholders' account, usually on the same day (C.S.V Murthy, 2004).

2.1.4.2.2 Benefits of E-Cards

According to C.S.V Murthy, (2004), E-cards offer a number of benefits to the issuing banks and customers of the bank including:

- Dramatically reduce printing, mailing, and financial handling costs associated with processing transaction.
- Enhance payment security by minimizing theft or loss.
- Prevent fraud through automated controls
- Increase customer satisfaction and enhance service to constituents.
- Ensure continuity of service to cardholders in emergency or disaster situations
- Improve operational efficiency and profitability of the issuing banks.

2.1.4.3 Mobile Banking

Mobile banking (also known as M-banking or SMS banking) is a term used for performing balance checks, account transactions, payments etc. via a mobile device such as a mobile phone.

Mobile banking is most often performed via SMS or the Mobile Internet but can also use special programs called clients downloaded to the mobile device. The standard package of activities that mobile banking covers are: mini-statements and checking of account history; alerts on account activity or passing of set thresholds; monitoring of term deposits; access to loan statements; access to card statements; mutual funds/equity statements; insurance policy management; pension plan management; status on cheque, stop payment on cheque; ordering check books; balance checking in the account; recent transactions; due date of payment (functionality for stop, change and deleting of payments); PIN provision, change of PIN and reminder over the internet; blocking of (lost/stolen) cards; domestic and international fund transfers; micro-payment handling; mobile recharging; commercial payment processing; bill payment processing; peer to peer payments; withdrawal at banking agent and deposit at banking agent (Rahman, 2006).

2.1.4.4 Tele Banking

Tele banking refers to the services provided through phone that requires the customers to dial a particular telephone number to have access to an account, which provides several options of services (Rahman, 2006).

2.1.4.5 Home Banking

Home banking frees customers from visiting branches and most transactions will be automated to enable them to check their account activities, transfer funds and to open L/C sitting in their desk with the help of a personal computer and a telephone (Rahman, 2006).

2.1.4.6 Point of Sale Terminal

An advanced payment system, which enables customers to use an ATM card to pay for goods and services, electronically debiting the cardholders account and crediting the account of the merchant (Rahman, 2006).

2.1.4.7 Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT)

It is a bank owned non-profit co-operative based in Belgium servicing the financial community worldwide. It is a highly secured messaging network enables banks to send and receive fund transfer, L/C related and other free formal messages to and from any banks active in the network. Having SWIFT facility, banks will be able to serve its customers more profitable by providing L/C, payment and other messages efficiently and with at most security. Especially it will be of great help for clients dealing with imports and exports etc (Mohammed shamsuddoha, 2008).

2.1.5 Importance of E-Banking

Understanding E-Banking service is important for several stakeholders, since it helps them to derive benefits from it. Many banks and other organizations have already implemented or are planning to implement E-Banking because of the numerous potential benefits associated with it. Some of these major benefits according to Shah & Clarke (1997) are briefly described below.

2.1.5.1 From the Banks Point of View

Attracting High Value Customers: - E-Banking often attracts high profit customer with high income and education level, which helps to increase the size of revenue streams. For a retail bank, E-Banking customers are therefore of particular interest, and such customers are likely to have a higher demand for banking products. Most of them are using online channels regularly for a variety of purposes, and for some there is no need for regular personal contacts with the bank's branch network, which is an expensive channel for banks to run (Berger & Gensler, 2007). Some research suggests that adding the Internet delivery channel to an existing portfolio of service delivery channels results in nontrivial increases in bank profitability (Young, 2007). These extra revenues mainly come from increases in noninterest income from service charges on deposit/current accounts. These customers also tend to be of high-income earners with greater profit potential.

Enhanced Image: E-Banking helps to enhance the image of the organization as a customer focused innovative organization. This was especially true in early days when only the most

innovative organizations were implementing this channel. Despite its common availability today, an attractive banking website with a large portfolio of innovative products still enhances a bank's image. This image also helps in becoming effective at e-marketing and attracting young/professional customer base.

Increased Revenues: Increased revenues as a result of offering e-channels are often reported, because of possible increases in the number of customers, retention of existing customers, and cross selling opportunities. Whether these revenues are enough for reasonable return on investment (ROI) from these channels is an ongoing debate. It has also allowed banks to diversify their value creation activities. E-Banking has changed the traditional retail banking business model in many ways, for example by making it possible for banks to allow the production and delivery of financial services to be separated into different businesses. This means that banks can sell and manage services offered by other banks (often-foreign banks) to increase their revenues. This is an especially attractive possibility for smaller banks with a limited product range. E-Banking has also resulted in increased credit card lending as it is a sort of transactional loan that is most easily deliverable over the internet. Electronic bill payment is also on rapid rise (Young, 2007) which suggests that electronic bill payment and other related capabilities of E-Banking have a real impact on retail banking practices and rapidly expanded revenue streams.

Easier Expansion: Traditionally, when a bank wanted to expand geographically it had to open new branches, thereby incurring high start up and maintenance costs. E-channels, such as the Internet, have made this unnecessary in many circumstances. Now banks with a traditional customer base in one part of the country or world can attract customers from other parts, as most of the financial transactions do not require a physical presence near customers living/working place.

Load Reduction on Other Channels: E-Channels are largely automatic and most of the routine activity such as account checking or bill payment may be carried out using these channels. This usually results in load reduction on other delivery channels, such as branches. This trend is likely to continue as more sophisticated services such as mortgages or asset finance are offered using E-Banking channels. In some countries, routine branch transactions such as cash/cheque deposit

related activities are also being automated, further reducing the workload of branch staff, and enabling the time to be used for providing better quality customer services.

Cost Reduction: The main economic argument of E-Banking so far has been reduction of overhead costs of other channels such as branches, which require expensive buildings and a staff presence. It also seems that the cost per transaction of E-Banking often falls more rapidly than that of traditional banks once a critical mass of customers is achieved. The research in this area is still inconclusive, and often-contradicting reports appear in different parts of the world. The general consensus is that fixed costs of E-Banking are much greater than variable costs, so the larger the customer base of a bank, the lower the cost per transaction would be. Whilst this implies that cost per transaction for smaller banks would in most cases be greater than those of larger banks, even in small banks it is seen as likely that the cost per transaction will be below that of other banking channels.

Organizational Efficiency: To implement E-Banking, organizations often have to re-engineer their business processes, integrate systems and promote agile working practices. These steps, which are often pushed to the top of the agenda by the desire to achieve E-Banking, often result in greater efficiency and agility in organizations. However, radical organizational changes are also often linked to risks such as low employee morale, or the collapse of traditional services or the customer base. In addition, Electronic banking has also helped banks in proper documentation of their records and transactions

2.1.5.2 Benefits from the Customers' Point of View

The main benefit from the bank customers' point of view is significant saving of time by the automation of banking services processing and introduction of an easy maintenance tools for managing customer's money. The main advantages of E-Banking for corporate customers as per (BankAway! 2001; Gurău, 2002) are as follows:

2.1.5.3 Benefits to General Economy

Electronic Banking as already stated has greatly serviced both the public and the banking industry. This has resulted in creation of a better enabling environment that supports growth,

productivity and prosperity. Besides many tangible benefits in the form of reduction of cost, reduced delivery time, increased efficiency, reduced wastage, banking electronically controlled and thoroughly monitored environment and discourage many illegal and illegitimate practices associated with banking industry like money laundering, frauds and embezzlements. Further E-Banking has helped banks in better monitoring of their customer base. This is a useful tool in the hand of the bank to device suitable commercial packages that are in conformity with customer needs. As e- banking provide opportunity to banking sector to enlarge their customer base, a consequence to increase the volume of credit creation which results in better economic condition. Besides, E-Banking has also helped in documentation of the economic activity of the masses (Mahdi Salehi, 2004).

2.1.6 E-Banking Risks

Although E-Banking has bright prospects, it involves some financial risks as well. The major E-Banking risks according to FSA (2010) include:

Operational risks - Banks faces three main types of operations risk: such as volume forecasts, management information systems and Outsourcing.

Accurate volume forecasts have proved difficult - One of the key challenges encountered by banks is how to predict and manage the volume of customers that they will obtain. Many banks going on-line have significantly misjudged volumes. When a bank has inadequate systems to cope with demand it may suffer reputational and financial damage, and even compromises in security if extra systems that are inadequately configured or tested are brought on-line to deal with the capacity problems. The second type of operations risk concerns management information systems. Again, this is not unique to E-Banking. Banks may have difficulties in obtaining adequate management information to monitor their eservice, as it can be difficult to establish/configure new systems to ensure that sufficient, meaningful and clear information is generated. Such information is particularly important in a new field like E-Banking. Finally, a significant number of banks offering E-Banking services outsource related business functions, e.g. security, either for reasons of cost reduction or, as are often the case in this field, because they do not have the relevant expertise in-house. Outsourcing a significant function can create material risks by potentially reducing a bank's control over that function

Security risk: Security issues are a major source of concern for everyone both inside and outside the banking industry. E-Banking increases security risks, potentially exposing hitherto isolated systems to open and risky environments. Security breaches essentially fall into three categories; breaches with serious criminal intent (e.g. fraud, theft of commercially sensitive or financial information), breaches by ‘casual hackers’ (e.g. defacement of web sites or ‘denial of service’ - causing web sites to crash), and flaws in systems design and/or set up leading to security breaches (e.g. genuine users seeing / being able to transact on other users’ accounts). All of these threats have potentially serious financial, legal and reputational implications.

Reputational risk: This is considerably heightened for banks using the Internet. For example, the Internet allows for the rapid dissemination of information, which means that any incident, either good or bad, is common knowledge within a short space of time. Internet rumors can easily become self-fulfilling prophecies. The speed of the Internet considerably cuts the optimal response times for both banks and regulators to any incident. Banks must ensure their crisis management processes are able to cope with Internet related incidents (whether they be real or hoaxes).

Any problems encountered by one firm in this new environment may affect the business of another, as it may affect confidence in the Internet as a whole. There is therefore a risk that one rogue e-bank could cause significant problems for all banks providing services via the Internet. This is a new type of systemic risk and is causing concern to E-Banking providers. Overall, the Internet puts an emphasis on reputational risks. In addition, legal risks (e.g. without proper legal support, money laundering may be influenced); Strategic risks; credit risks; market risks; and liquidity risks are also E-Banking risks. Therefore, identification of relevant risks, and formulation and implementation of proper risk mitigation policies and strategies are important for banks while performing E-Banking. Among these security risk that affects the network system is the major one FSA (2010).

2.1.7 Typical Security Technologies Applicable to Control System Networks

According to Juniper (2010), the following are among the major typical security technologies applicable to control System Networks:

Firewalls: A firewall is simply a program or hardware device that filters the information coming through the Internet connection into the private network or computer system. If an incoming packet of information is flagged by the filters, it is not allowed through. A firewall limits a control system's network access to specific ports and protocols from specified networks. It can also provide the ability to create distinct security zones using Network

Address Translation (NAT), which enables multiple areas of a private network to access the Internet using a single public IP address and Virtual Private Networks). The firewall's main task is to regulate traffic between network segments at different trust levels—for example, between the Internet, as a zone with no trust, and the internal control network, a zone of higher trust.

Intrusion Detection and Protection: its appliance provides a more advanced layer of defense. Such defense (known as intrusion prevention system) can be deployed to help prevent attacks, or simply to detect attacks using intrusion detection systems. Information is sent through the network in small blocks of data known as packets. It goes deeper than a firewall by assessing each packet based on the network protocols, the context of the communication, and its tracking of each session (the time the user spends communicating on the network). Akin to antivirus software on a desktop, it contains a large repository of signatures that help to identify potential attacks by matching attempts to exploit known vulnerabilities.

Authentication/Authorization Systems: Authentication and authorization systems protect applications by verifying user identity, providing access to devices based on that user's role and privilege level, and logging all access attempts in order to audit any infringement or misuse of critical plant functions. The use of passwords alone is not a secure enough mechanism, yet it is still the norm to find devices in the field that rely on the manufacturer's default password. Most security standards require two-factor authentication, which requires the combination of two methods of identification, such as a password and a certificate.

Network Access Control: This might include ensuring those users and their laptops or other devices meet a minimum baseline of security in order to gain access. Such policies can be based on various criteria, such as user identity, device identity, device health, and device and/or network location. A solution including it ensures that both user and device properly make the appropriate connection to the appropriate network. It also ensures that users and their devices meet all authentication and security policies. Since network access control applies to users as well as devices, this can become a reliable method for rogue device mitigation over wireless or wired networks.

Encryption of Critical Data: Encryption is the process of transforming information, such as a document or important message, by using an algorithm or cipher to make it unreadable to anyone who does not have the key to the cipher. It is a standard method for protecting highly confidential information. However, as heavily encrypted messages can slow network performance unless managed effectively, its use is often restricted to non-real-time messaging and data.

Monitoring for Administration and the Audit Trail: An increasingly important aspect of today's security solutions is the ability to monitor and administer the entire network to keep it at optimum performance, identify weaknesses, maintain consistent security policies, track a constant history of activity, and assure the complete safety of information.

Secure Remote Access: on top of these security capabilities, contractors, engineers and managers may remotely communicate via remote access virtual networks enabled by the secure socket layer (SSL) based security protocols. Found in all standard web browsers, SSL provides a more secure, efficient and effective way to access control networks from an outside location or even outside the organization. This set of protocols allows secure communications via the Internet for gathering sensor data, sending instructions to field devices, performing remote maintenance and administrative data transfer task

Configuration Management: A final aspect of security is helping to assure high network performance to avoid problems of availability, access and lack of service. A good security solution provides support for configuration management and control, a model that focuses on establishing and maintaining knowledge of the system and network configuration, including

security. Based on this approach, operations personnel have the ability to manage security features and assurances through control of changes made to hardware, software, firmware, testing and documentation throughout the lifecycle of the systems Juniper (2010).

2.1.8 Banking in Ethiopia

2.1.8.1 Banking History in Ethiopia

A reference to the Ethiopian history reveals that the first bank in the country, Bank of Abyssinia was founded during the reign of Emperor Menelik II in February 1905. Due to a foreign domination of its management (mainly the British), the then Bank of Abyssinia was forced to dissolve and in its place was established the Bank of Ethiopia in 1931 whose management was still left to foreigners due to the then lack of skilled manpower in the country. The Bank of Ethiopia was later replaced by the State Bank of Ethiopia soon after the war with Italy. The latter was the first bank in the country fully controlled and owned by the Ethiopian government. In the mean time, however, a number of foreign banks had opened their branches in the country, most of them with an interest to have control over the nation's economy. It was the State Bank of Ethiopia that gave rise to the present Commercial Bank of Ethiopia (CBE) and National Bank of Ethiopia (NBE). During the Dergue reign, CBE had remained as the only participant in the country's commercial banking sector. However, following the 1991 takeover by the present government and accompanying encouragement of private investment, a number of private banks have emerged in the country's financial sector. Accordingly, Monetary and Banking proclamation No.83/1994 and the Licensing and Supervision of Banking Business No.84/1994 laid down the legal basis for investment in the banking sector. Consequently, shortly after the proclamation the first private bank, Awash International Bank was established in 1994 by 486 shareholders and by 1998 the authorized capital of the Bank reached Birr 50.0 million. Dashen Bank was established on September 20, 1995 as a share company with an authorized and subscribed capital of Birr 50.0 million. 131 shareholders with subscribed and authorized capital of 25.0 million and 50 million founded bank of Abyssinia. Wegagen Bank with an authorized capital of Birr 60.0 million started operation in 1997. The fifth private bank, United Bank was established on 10th September 1998 by 335 shareholders. Nib International Bank that started operation on May 26, 1999 with an authorized capital of Birr 150.0 million. Cooperative Bank of

Oromia was established on October 29, 2004 with an authorized capital of Birr 22.0 million. Lion International Bank with an authorized capital of Birr 108 million started operation in October 02, 2006. Zemen Bank is started operation on June 17, 2008 with capital of Birr 87.0 million and Oromia International Bank is started operation on September 18, 2008 with an authorized capital of Birr 91 million. In addition, recently Buna international bank and Birhan international bank are started operation in the country (NBE, 2009).

2.1.8.2 Review of Commercial Banking Practices in Ethiopia

In Ethiopia, 12 private and three state owned banks are operating at the end of June 2009. Despite a rapid increase in the number of financial institutions since financial liberalization, the Ethiopian banking system is still underdeveloped compared to the rest of the world. The use of checks is mostly limited to government institutions, NGOs and some private businesses. Commercial banks in Ethiopia provide the same services with the same operational style that they used to offer before decades. The common banking functions provided by public and private banks in Ethiopia are deposit mobilization, credit allocation, money transfer and safe custody. Banks in Ethiopia are unable to improve customer service, design flexible and customized products, and differentiate themselves in a market where product features are easily cloned. Ethiopian banking is unable to come from long way of being sleepy to a high proactive and dynamic entity.

The Ethiopian banking industry as a whole has a net work of 636 branches as per the fourth quarter bulletin 2008/09 of the National Bank of Ethiopia, which is the lowest compared to the size of the country (1.1million square km) and number of population (78 million) and this shows that the number of population being served by a single branch stood at around 105,000 With such highly scattered branch network and disintegrated working system it is hard to ensure efficient flow of financial resources and optimize the contributions of the entire financial system to the development processes. All banks in Ethiopia are too late to move with technological advancement and they should clearly chart out the time schedule for their integration and technological advancement. Some of the banks even today do not have information websites, which can help them to provide at least the information on financial services offered by them (NBE , 2008/09).

2.2 Empirical Evidence

2.2.1 Challenges and prospects of E-Banking Adoption

Challenges

According to M. M. Rahman (2008) in Bangladesh despite huge demand from the business community as well as the retail customers particularly the urban customers, electronic banking (E-Banking) is still at a budding state due mainly to a number of constraints such as unavailability of a backbone network connecting the whole country; inadequacy of reliable and secure information infrastructure especially telecommunication infrastructure; sluggish ICT penetration in banking sector; insufficient legal and regulatory support for adopting E-Banking and so on. 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 and business-to-customer transactions. However, in true sense, E-Banking includes activities like payment of bills and invoices, transfer of funds between accounts, applying for a loan, payment of loan installments, sending funds to third parties via emails or internet connections regardless of where the client is located. Leow, Hock Bee (1999) state that the terms PC banking, online banking, Internet banking, telephone banking or mobile banking refers to a number of ways in which customer can access their banks without having to be physically present at the bank branch. Therefore, E-Banking covers all these ways of banking business electronically. Since E-Banking offers some smart services benefiting both banks and customers compared with traditional banking system, it has become imperative to make necessary room for banks to flourish e- banking. Among others, attractiveness of E-Banking includes: it lowers transaction cost; provide 24- hour services; ensure increased security and control over transactions; reduces fraud risk; performs higher volume of transactions with less time; increases number and volume of value payment through banks; allows remote transactions facilities that replace physical presence of a customer in a bank branch and; increases transaction speed and accuracy. On the other hand, traditional banking is time-consuming and more costly and therefore, E-Banking is replacing traditional banking all over the world. In addition, an exploratory study that was conducted in Zimbabwe by Chitura Tofara (2008) indicated that incompatibility with the existing system, cost of implementation, security concerns, lack of

expertise, inadequate legislation and consumer acceptance are the major challenges for the adoption of E-Banking in the country's banking industry.

Prospects of E-Banking

According to M., M Rahman (2008) in Bangladesh E-Banking is now a global phenomenon. Apart from the developed countries, the developing countries are experiencing strong growth in E-Banking. The government's emphasis on setting up ICT park, raising allocation for developing ICT infrastructure, waiving taxes on computer peripherals and other measures including the automation program of banking sector and competition among the scheduled banks in improving customer services have accelerated the prospects of E-Banking .

In addition, as investigated by Alhaji Ibrahim H. (2009) using exploratory study, the following are among the critical challenges for the adoption of E-Banking in Nigeria:

- Lack of Technological Infrastructure – the implementation of e-payment is been impeded by unavailability of ICT infrastructure. Most rural areas where majority of small and medium scale industries are concentrated have no access to internet facilities
- ICT Equipment Costs – where available, the cost of ICT is a critical factor relative to per capital income. This makes the cost of entry higher compared to developed countries.
- Regulatory and Legal Issues – inexistence of proper legal and regulatory framework.
- Non-readiness of banks and other stake holders (acceptability) – even though some have shown impressive willingness, some banks are still not fully ready to for this new payment regime.

Resistance to changes in technology among customers and staff due to □Lack of awareness on the benefits of new technologies,

- Fear of risk among banks
- Lack of trained personnel in key organizations and
- Tendency to be content with the existing structures

- People are resistant to new payment mechanisms;
- Security - where disclosure of private information, counterfeiting and illegal alteration of payment data may be rampant.
- Frequent connectivity failure in telephone lines
- Frequent power interruption

2.2.2 Perceived Advantages that Initiate Banks to Adopt E-Banking

The study that was conducted in Omani banks by Al-Sabbagh, I., & Molla, A. (2004) using exploratory research found that bank manager' perceptions of four concepts: perceived relative advantage, Perceived organizational performance, perceived customer/organizational relationship and perceived ease of use provided a broader understanding of E-Banking adoption in the banking industry.

The first construct: Perceived Relative Advantage construct relates to the degree to which bank managers think that Internet technology might help their bank gain advantages in the industry. From the literature, three major issues emerged relating to the perception of relative advantage: convenience of services; innovative use of IT; and management of banking services.

The second construct: Perceived Organizational Performance is associated with how much a bank manager thinks Internet technology could improve their organizational performance.

Three issues: profitability; market environment and employee productivity were utilized to explore this construct in depth. From the broad question related to profitability, two impediments are indicated: high technology investment cost and the need for economies of scale for Internet technology use are inhibiting the rate of E-Banking adoption. Productivity of employees was another issue of interest. Most respondents expected that their business efficiency could be improved on the Internet. The third construct: Perceived Customer/Organizational Relationship relates to how a bank manager perceives Internet technology adoption in terms of improving the relationship with their customers. In the literature, three major issues emerge related to the

perception of customer/organizational relationship: customer trust, customer commitment, and customer satisfaction.

The final construct: Perceived Ease of Use measures how easy a bank manager believes that Internet technology is to use. The literature suggests that if technology is perceived to be easy to use then the rate of adoption will increase. The research threw up three major issues related to perceived ease of use: easy to navigate, easy to learn and easy to manage. The last issue related to management of financial transactions on the Internet.

2.2.3 Drivers and Barriers of E-Banking Adoption

An exploratory research conducted by Mahdi Salehi (2004) in Iran indicate that the adoption status of E-Banking is the transition of pre-development to development phase and the main drivers for adopting E-Banking are downsizing, gaining competitive advantage, increasing market share and improving bank's image. The analysis further reveals that inefficient ICT infrastructure, political challenges and traditional organizational culture are barriers for adoption of E-Banking.

In addition to the above factors, the case study that was conducted in china by Sherah Kurnia, Fei Peng, Yi Ruo Liu (2005) suggests that the government support is also a strong driver for E-Banking adoption. The government support is manifested in two ways. Firstly, the Government is establishing an electronic commerce (EC)-friendly environment in the country. The government in recent years to revamp the national ICT and logistic infrastructures has committed heavy investments. New EC laws and regulations have also been passed and adjusted to provide legal protections for EC activities in general. Secondly, the government also directly offers financial incentives to promote E-Banking adoption.

CHAPTER THREE

Research Methodology

3.1 Introduction

Designing appropriate research methodology is a prerequisite in order to conduct a good Research work. Accordingly, this chapter discusses about the methodology by which the researcher used to conduct this study. Thus, background of the study area, research design, sampling, data source and method of collection and method of data analysis are presented below respectively.

3.2 Research Design

According to Kothari (2004), the research design to be adopted depends on the nature of the study. The author has classified the research designs in to three broad categories. The first one is exploratory which is used in case of exploratory research studies, the main purpose of which is formulating a problem for more precise investigation. The second research design is experimental which is used in case of hypothesis testing research studies where in the researcher tests the hypotheses of causal relationship between variables. The third one is descriptive, used when conducting descriptive research studies and is concerned with describing characteristics of a particular individual, or of a group.

Hence, the research design of the study is descriptive as the study is concerned with narration of facts and characteristics regarding group of employees of the Bank.

3.3 Sampling Techniques

Dashen bank employees in Addis Ababa are the target population. Purposive sampling technique is used to select the sample from the target population.

Based on the company headquarter report as of February 17, 2017 it has 5,607 permanent employees and among these 3,370 employees were assigned in Addis Ababa. Out of these 3,370 Addis Ababa employees, 943 were staffed under at east district and out of this 300 employees is

found in selected six (6) branches. From these branches, the researcher select two branches from grade A, two branches from grade B and two branches from grade C. The branch selection reason is to obtain mere dependable information; diversified groups of respondents were involved to give information for the study. Sample size is selected by using purposive sampling technique, which means the selection of the respondent is made in a way to get sufficient data regarding E-Banking .

The total sample size was determined by using the following sample size determination formula developed by Taro Yamane (1967).

$$n = \frac{N}{1+Ne^2}$$

Where:

n; The sample size

N; The population size

e; The level of precision or sampling error (0.05).

Accordingly, the total sample size for the total number of Dashen bank employees is calculated as follow.

$$n = \frac{300}{1+300*(0.05)^2}$$

$$n = 172$$

Hence, the total sample size is 172. Since the number of people in each bank is not the same, the number of samples for each bank was calculated by the following formula:

S.No	List of branches	Population size	Sample size
1	Bole	70	41
2	Bole Medhanialem	50	29
3	Yerer	40	23
4	Hayahulet	40	23
5	Megenagna	50	28
6	Africa Andenet	50	28
TOTAL		300	172

$$n1 = \frac{nN1}{N}$$

N

Where

n= total number of samples

N= total number of population

N1= total number of population in each bank

n1= number of samples in each bank

Source: - own computation

3.4 Data Source

The study was conducted by collecting data from both primary and secondary sources. Primary data were collected from the respondents.

There are two types of sources when collecting data; primary and secondary data sources. Primary sources are directly related to the study purpose. Primary data consists of all the data collected throughout the study. Secondary data on the other hand, contains relevant data that has been collected for a different purpose but from which the conclusion is valuable for the purpose.

3.5 Validity and Reliability of Instruments

3.5.1 Validity

The researcher tries to adopt the instrument used in previous research at Ethiopian context. Three subject matters were provided to check for its validity. The employees were chosen based on their experience and attachment with the service.

Generally in his approach employees were invited to respond on three point scale 1=not necessary 2=useful but not essential 3= essential where 'essential' items were the one that best represents the goal. The researcher had no additional comments on items wording or missing contents on the other hand the researcher was aware of problems of validity that may occur when interpreting the English version of questionnaire and translating them in to Amharic. Potential mistakes were there for minimized through double checking any terms and expressions that might otherwise cause undesirable confusion and misunderstanding.

3.5.2 Reliability

Reliability differs from validity in that it relates not to what should be measured but instead to how it is measured to confirm whether the adopted instruments understood or not by the respondent a pilot reliability test were conducted a total of 10 (ten) questionnaire were distributed to the respondents the participants for this pilot test was selected for each service process based on their easily accessibility to the researcher then the returned 10 (Ten) pilot instrument were responded fully.

3.6 Method of Collection

The researcher uses both primary and secondary data sources. Primary data is used through conducting questionnaire. Secondary data is used through a theoretical study comprised of books, research thesis, articles journals, internet and annual reports.

For the proper achievement of the objectives of the study; the researcher used primary data Source. Primary data was collected using structurally designed questionnaire and it includes both closed ended and open-ended questions. Questionnaires were distributed to the employees of the bank at selected branches.

3.7 Method of Data Analysis

In order to meet the stated research objectives, the collected data analyzed based on the nature of the objective, accordingly since all the information that were collected are qualitative in nature. Descriptive type of analysis by using tables, percentages, means and standard deviaton is employed to analyze each objective.

3.8 Ethical Considerations

In order to keep the confidentiality of the data given by respondents, the respondents did not required to write their name and assured that their responses were treated in strict confidentiality. The purposes of the study were disclosed in the introductory part of the questionnaire. Furthermore, the researcher has tried to avoid misleading or deceptive statements in the questionnaire. Lastly, the questionnaires were distributed only to voluntary participants.

CHAPTER FOUR

Data Analysis and Interpretation

This chapter presents analysis and interpretation of findings from data that were gathered from the employees of Dashen bank found in Addis Ababa. The data was obtained through questionnaires. To obtain more dependable information, diversified groups of respondents were involved to give information for the study.

4.1 Response Rate

The sample sizes as discussed in chapter 3 a total of 172 questionnaires were prepared to potential respondents to fill the structured questions. Out of the 172 potential respondents, a total of 130 questionnaires were collected and the remaining 42 were not returned. In the end, a total of 130 respondents filled and returned the questionnaire. The overall respondent rate for the survey was approximately 75.58%.

Table 1: Response rate

NO.	Respondent category	Frequency	Percentage
1	Responded	130	75.58
2	Didn't respond	42	24.42
Total		172	100

Source: - own computation

4.2 Demographic Characteristics of Respondents

Demographic characteristics under the study include gender, age, level of education, years of experience and position of respondents.

As we can see from the result most respondents were females (60.77%), while 39.23% were males.

The majority of respondents' age was between 20-30 years old, which represents 90 (76.15%) of the total sample. Moreover, the remaining 31 (23.85%) of the respondents indicated that they belong to the age category of 31-40 years old.

Furthermore, respondents were asked about their educational status. Accordingly, the most majority of the respondents (95.38%) were having BA Degree, and only 4.62% of the respondents were having MA/MSc Degree.

Table 2: Demography of the respondent

Respondent Gender frequency					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	79	60.77	60.77	60.77
	Male	51	39.23	39.23	100
	Total	130	100	100	
Respondent Age frequency					
	20-30	99	76.15	76.15	76.15
	31-40	31	23.85	23.85	100
	Total	130	100	100	
Respondent Education frequency					
	BA degree	124	95.38	95.38	95.38
	MA/MSc degree	6	4.62	4.62	100
	Total	130	100	100	
Respondent work experience frequency					
	Below 1	11	8.46	8.46	8.46
	1 – 5	105	80.77	80.77	89.23
	6 – 9	14	10.77	10.77	100
	Total	130	100	100	
Respondents position					
	Managerial	44	33.85	33.85	33.85
	Clerical	86	66.15	66.15	100
	Total	130	100	100	

Source: - SPSS output form Survey Data, 2017

Respondents were also asked about their occupational experience and from the total of 130, the greater portion were having 1 to 5 years of work experience which accounts 80.77%. On the other hand, 10.77% of them were having less than one year work experience. Only 8.46% of the sample respondents have a work experience of 6 to 10 years.

Finally the respondents were asked about their position in the bank and majority of the respondent were clerical employees and the remaining are managerial position employees of Dashen bank found in selected Addis Ababa branches.

According to the survey result, Dashen Bank are providing E-Banking services to their customer through almost all E-Banking channels or tools such as Automated Teller Machine (ATM), Mobile Banking, Point of Sale (POS) Terminals, debit card, Mobile Banking and Internet Banking.

4.3 Push Factors for Implementation and Expansion of E-Banking

A total number of 7 questions on “push factors” for adoption and extension of E-banking services in Dashen Bank were asked to indicate the extent to which each respondent agrees to corresponding closed ended statements rated on a five-point Likert type scales ranging from ‘1’ “Strongly Disagree” to ‘5’ “Strongly Agree”. The summary of the results for all statements or variables under the research study and the result with respect to each statement is indicated below. Accordingly, the researcher tried to interpret the Mean value and the associated other literatures findings.

Table 3: Push factors for implementation and expansion of e-banking at Dashen bank

No.	Push Factors	N		Mean	Std. Deviation
		Valid	Missing		
1	To improve organizational performance and productivity	130	-	3.95	0.847
2	To improve the customer service	130	-	4.48	0.621
3	To cover wide geographical area	130	-	4.12	0.723
4	To build organizational reputation	130	-	3.85	0.948
5	To reduce transaction cost	130	-	4.02	0.789
6	To satisfy rapid change of customer needs and preferences	130	-	4.52	0.614
7	Existence of high competition in the banking industry	130	-	4.67	0.568

Source: - SPSS output from Survey result

There are push factors that affect the implementation and extension of E-Banking technology products in Dashen bank. As depicted in the above Table 4.3 indicated that most respondents agreed that existence of high competition in the banking industry and to satisfy rapid change of customer needs and preferences were the main push factors for implementation and expansion of E-Banking technology in Dashen bank, in which mean score are founded 4.67 and 4.52, respectively. Hence, adoption and expansion of E-Banking technology is used as a defensive mechanize against competitive activities. This result is in line with finding by Isaac (2005).

The result further revealed that most respondents asserted that to improve the customer service, to cover wide geographical area and to reduce transaction cost are found as the main push factors for adoption and expansion of E-Banking technology in Dashen bank. This is evidenced by the data collected from the respondents with mean score of 4.48, 4.12, and 4.02, respectively.

Last but not least, other push factors that commence Dashen bank for implementation and expansion of E-Banking technology are to improve organizational performance and productivity and to build organizational reputation. This agreement is based on the responses of the respondents with mean score 3.95 and 3.85 respectively.

The next question is “What bank services are available for Dashen bank customers by using E-Banking?” and majority of the respondents’ response is summarized as follows;

- Check Balance
- View account historical records
- Transfer Fund with in the same bank
- Pay bills
- Order/print account statement
- Cash Withdrawal
- Local money transfer
- Foreign exchange service

4.4 Benefits Realized from the Implementation and Expansion of E-banking in Dashen Bank

A total of 11 questions on “Benefits” of implementation and expansion of E-Banking were asked to indicate the extent to which each respondent agrees to corresponding closed ended statements rated on a five-point Likert type scales ranging from ‘1’ “Strongly Disagree” to ‘5’ “Strongly Agree”. Statistical results on the variables under the benefits of E-Banking including the Mean

and Standard Deviation of the data points. The “Valid” column shows the number of respondents who provided answer for each corresponding variables. On the other hand, the “Missing” column depicted the variables which were not answered by respondents. The mean tried to tell the averages where the data points fall for each specific variable while the standard deviation column showed the variability of the data points for each variable under consideration.

Accordingly, the researcher tried to interpret the mean of the data points. The following section summarizes respondents’ views of expectations and perceived benefits for E-Banking adoption and expansion. For analysis purpose perceived benefits are classified in to operational benefit and service benefits (Futcher, 2003).

4.4.1 Operational Benefits

Despite different challenges faced by implementing and extending of E-Banking technology in Dashen bank, there are enormous benefits expected from implementation and growth of E-Banking technology which includes operational and services benefits. Operation benefits covered in the survey are presented here below in the table 4.4

Table 4: operational benefits of E-banking

	No.	Operational Benefits	N		Mean	Std. Deviation
			Valid	Missing		
Operational Benefits	1	Reduced paper work	130	-	4.69	0.566
	2	Low transaction cost	130	-	4.03	0.687
	3	Enhance productivity in the bank	130	-	4.21	0.706
	4	Enhance foreign currency generation	130	-	4.53	0.616
	5	Increase reliability and reducing errors	130	-	4.48	0.612

Source: - SPSS output from Survey result

The operational benefits of E-Banking technology as perceived by the bank identified in this study and the respondents strongly agreed that implementation and expansion of E-Banking technology at Dashen bank and it reduces paper work, Enhance foreign currency generation and Increase reliability and reducing errors. This is evidenced by the data collected from the respondents with mean score of 4.69, 4.53 and 4.48 respectively. According to the June 2016 report, Dashen Bank has generated 607 million dollar through international card transaction for the past eight years. This implies that implementation of E-Banking technology has a crucial factor not only for the bank performance but also for economic growth of the country through improving the capital inflow and solve foreign currency shortage that the country faced.

The result further revealed that implementation of E-Banking technology enhances productivity in the bank and reduce transaction cost. This agreement is based on the responses of the respondents with mean score 4.21 and 4.03 respectively.

4.4.2 Service Benefits

In addition to operational benefits, there are also service benefits that the bank can attain from implementation and expansion of E-Banking technology. Such service benefits covered in the survey are presented here below in the table 4.5.

Table 5: Service benefits of E-banking

	No.	Service Benefits	N		Mean	Std. Deviation
			Valid	Missing		
Service Benefits	1	E-banking is convenient, in terms of 7 days and 24 hours services i.e. accessibility	130	-	4.72	0.420
	2	Enhance accessibility of the bank's services (in terms of place)	130	-	4.55	0.641
	3	Improve customer service	130	-	4.30	0.689
	4	Improving transaction speeds	130	-	4.10	0.802
	5	Reduce queues in the banking hall	130	-	4.22	0.705

Source: - SPSS output from Survey result

The most ranked service benefits identified in this study that large number of respondent agreed on service benefits perceived from implementation and expansion of E-Banking technology in Dashen bank is that E-banking is convenient, in terms of 7 days and 24 hours service i.e. accessibility (Mean = 4.72), Enhance accessibility of the bank's service (in terms of place) (Mean = 4.55) and Improve customer service (Mean = 4.30).

Lastly but not least, another service benefit of implementation and expansion of E-Banking technology in Dashen bank is it improving transaction speeds and reduce queues in the banking hall. This agreement is based on the responses of the respondents with mean score 4.10 and 4.22 respectively.

So we can conclude that from table 4.4 and table 4.5, Dashen bank has both service benefit and operational benefits from implementation and expansion of E-Banking technology.

4.5 Challenges of Implementation and Expansion E-banking Technology in Dashen Bank

As cited in chapter two, there are so money challenges that negatively affect implementation and expansion of the E-banking technology. The factors affecting the successful implementation and expansion of new technologies, such as E-banking are common in nature. Such as cost factors, security and trust factors and lack of adequate ICT infrastructure (particularly in developing countries like Ethiopia). However, reasons vary widely among banks and countries and also important to note that challenges to E-banking technology implementation and expansion work differently according to organizational type and culture. A total of 17 questions on challenges of implementation and extending of E-banking technology obtained from different literatures were asked to indicate the extent to which each respondent agrees to corresponding closed ended statements rated on a five-point Likert type scales ranging from '1' "Strongly Disagree" to '5' "Strongly Agree". Statistical results are presented under each section of the factors considered using the table including the number of frequencies, the Mean and Standard Deviation of the data points. Accordingly, the researcher tried to interpret the Mean of the data points.

For analysis purpose challenges are categorized in to organizational, environmental and technological factors. According to Tornatzky and Fleisher (1990). This are factors in which, it

is considered as negatively affecting the expansion and implementation of e- banking survice at Dashen bank.

4.5.1 Organizational Factors

Most cited organizational factors in the different literature are; IT users' community; organizational structure; firm's process; firm size; technological capabilities of the organization's members; the technological and financial resources available; process of selecting and implementing the IT; management backing and support for the project (Harrison, 2012). In this study costs related to implementation and running of E-banking technology, resistance to changes in technology, customer awareness, technical and managerial skills required to implement E-banking technology are considered as organizational factors and the survey result is shown on table 4.6 as follows:

Table 6: Organization Factors Affecting implementation and expansion of E-Banking Technology in Dashen bank

	No .	Challenges on Expansion of E-banking system	N		Mean	Std. Deviation
			Valid	Missin g		
Organizational Factors	1	Lack of customer awareness with E-banking product	130	-	3.67	1.082
	2	Lack of technical and managerial skills in implementation and expansion of E-banking technology	130	-	4.03	0.862
	3	High cost of implementation of E-banking. (such as cost of ICT equipment and network, software and re-organization)	130	-	4.09	0.834
	4	Resistance to changes in technology among by Board, top Management and staff	130	-	3.70	0.994

Source: - SPSS output from Survey result

Tables 6 shows that high cost of implementing of E-banking technology such as cost of ICT equipment and network, software and re-organization and lack of technical and managerial skills

in implementation and expansion of E-banking technology is the major organizational challenge for implementation and expansion of E-banking technology in Dashen bank, in which the mean score and mode were found 4.09 and 4.03 respectively.

The respondent also agreed that resistance to changes in technology among by Board, top Management and staff and lack of customer awareness with E-banking product is considered as a factor that negatively affecting the successful implementation and expansion of E-banking technology as the average result in the Likert scale is found 3.70 and 3.67 respectively.

In general, the result revealed that high cost of implementation of E-banking technology, customer's unfamiliarity with the E-banking products and their benefits, lack of technical and managerial skills in implementation and development of E-banking technology and resistance to changes in technology by management and staff are considered as organizational factors that hinders Dashen bank to implementation and expansion E-banking technology.

4.5.2 Environmental Factors

According to Tornatzky and Fleischer (1990) another factors influencing technology innovation is environmental factors. The issues raised in this study in relation with environmental factors are infrastructure, role of government, regulation and law, computer literacy and other are considered as organizational factors and the survey result is shown on table 4.7 as follows:-

Table 7: Environmental Factors Affecting implementation and expansion of E-Banking Technology in Dashen bank

	No.	Challenges on Expansion of E-banking system	N		Mean	Std. Deviation
			Valid	Missing		
Environmental Factors	1	Lack of legal framework for E-banking	130	-	3.90	0.850
	2	Lack of law mandating the bank to adopt E-banking technology	130	-	4.23	0.823
	3	Limitation in network infrastructure and internet related support services	130	-	3.89	0.851
	4	Customer low levels of computer literacy	130	-	3.81	0.772
	5	Limitation in ICT infrastructure	130	-	3.62	0.905
	6	Absence of financial networks that links different banks	130	-	4.27	0.815
	7	Frequent power disruption	130	-	3.85	0.814
	8	Tight foreign currency regulation	130	-	4.06	0.834

Source: - SPSS output from Survey result

The above table 7 highlighted that Absence of financial networks that links different banks, lack of law mandating the bank to adopt E-banking technology, tight foreign currency regulation and lack of legal framework for E-banking are the basic environmental challenge for implementation and expansion of E-banking technology in Dashen bank. As per the response of the sampled participants, the mean results are 4.27, 4.23, 4.06 and 3.90 respectively.

As we furthering our survey, limitation in network infrastructure and internet related support services, frequent power disruption, customer low levels of computer literacy and limitation in ICT infrastructure are considered as a challenge that will have a negative impact on the

implementation and expansion of E-banking technology in Dashen bank with the Mean value of 3.89, 3.85, 3.81 and 3.62.

4.5.3 Technological Factors

Even though there are many benefits associated with adoption of new technology, there are many hindrance technological factors that affect effective implementation and extending of the technology. The issues raised herein under the technological factors were relative disadvantages that hinder banking industries from implementation and expansion of E-banking technology such as customer fear of risk, security risk, lack of trust with the technology, loss of the audit trail and all of the respondents participated in this study were asked that such factors are consider as challenges that the banks faced while implementation and extending of E-banking technology and the survey result is shown on table 8 as follows:-

Table 8: Technological factors that affecting the implementation and extending of E-banking technology in Dashen bank

	No.	Challenges on Expansion of E-banking system	N		Mean	Std. Deviation
			Valid	Missing		
Technological Factor	1	Lack of confidence with the security aspects	130	-	3.86	0.851
	2	Loss of Audit Trail	130	-	3.96	0.704
	3	Money laundering and other financial crimes are easily facilitated through e-banking	130	-	3.01	1.216
	4	Users do not trust the E-banking technology provided by the bank	130	-	3.10	0.955
	5	Customer fear of risk to use E-banking technology	130	-	3.13	0.975

Source: - SPSS output from Survey result

Responses captured in the above table 8 shows that, the respondents asked to give their view on loss of audit trail and lack of confidence with the security aspects on the E-banking products

provided by Dashen bank and the descriptive statistics result gives mean value of 3.96 and 3.86. This means this technological factor have a negative impact for implementation and growth of E-banking technology.

The result further revealed that customer fear of risk to use E-banking technology, users do not trust the E-banking technology provided by the bank and money laundering and other financial crimes are easily facilitated through E-banking are the other technological factors that have negative impact on implementation and expansion of E banking technology in Dashen bank with mean value of 3.13, 3.10 and 3.01 respectively.

According to Delali (2010) consumer's confidence, trust in the traditional payments system has made customers less likely to adopt new technologies and new technologies will not dominate the market until customers are confident that their privacy will be protected and adequate assurance of security is guaranteed and also new technologies also requires the test of time in order to earn the confidence of the people, even if it is easier to use and cheaper than older methods.

4.6 Opportunities for Implementation and Expansion of E-Banking Technology in Dashen Bank

Table 9: Opportunities for implementation and expansion of E-Banking technology in Dashen Bank

No.	Opportunities	N		Mean	Std. Deviation
		Valid	Missing		
1	Improvement in the banking habit of the society	130	-	4.53	0.496
2	Late adopter opportunities	130	-	4.41	0.589
3	Commitment of the government to strengthen the banking industry	130	-	3.34	0.858
4	Commitment of the government to facilitate the expansion of ICT infrastructure	130	-	4.29	0.727
5	The existence of high demand	130	-	4.35	0.656
6	Increment of educated potential customer	130	-	4.79	0.241

Source: - SPSS output from Survey result

Respondents were asked whether they 'Strongly agreed, Agreed, Neutral, Disagreed or Strongly disagreed' based on the six questions shown in the table 4.9 above to confirm the existence of the opportunities for implementation and expansion of E-banking technology in Dashen bank, Accordingly, the sampled respondents agreed with the idea that increment of educated potential customer, improvement in the banking habit of the society, late adopter opportunities, the existence of high demand, commitment of the government to facilitate the expansion of ICT infrastructure and commitment of the government to strengthen the banking industry are existing opportunities fostering the implementation and expansion of E-banking technology in Dashen bank. This is evidenced by the data collected from the respondents with mean score of 4.79, 4.53, 4.41, 4.35, 4.29 and 3.34 respectively.

So Dashen bank is expected to use those opportunities like that of increment of educated potential customers, late adopter opportunities and others. As a result it is easy to give or feed information to educated customers and also lately adopting customers because they are willing to apply those information that they got from employees of the bank with this the bank can increase the extent of e-banking and over come on those challenges to have a good service quality on e-banking activates.

CHAPTER FIVE

Conclusions and Recommendation

This chapter concludes the findings and discusses the conclusions drawn from the study also it provides recommendation.

5.1 Conclusion

The objective the study was to identify push factors, benefits, challenges and opportunities for implementation and expansion of E-banking technology in Dashen bank. Accordingly, this part of the research concludes the major findings of the study as follows;

The study revealed lists of push factors that initiate Dashen bank for implementation and expansion of E-banking technology as agreed by the participants such as the existence of high competition in the banking industry, to satisfy rapid change of customer needs and preferences, to improve the customer service, to cover wide geographical area, to reduce transaction cost, to improve organizational performance and productivity and to build organizational reputation are the factors that have a strong influence on E-banking technology implementation and expansion in Dashen bank.

The study revealed lists of benefits that Dashen bank realized from implementation and extension of E-banking technology. The benefits were classified as operational and service benefits. Operational benefits identified in this study as agreed by the participant include reduces paper work, enhance foreign currency generation, increase reliability and reducing errors, enhances productivity in the bank and reduce transaction cost. The study has also described lists of service benefits in the implementation and extension of E-banking technology at Dashen bank as agreed by the participants, convenient, in terms of 7 days and 24 hours service i.e. accessibility, Enhance accessibility of the bank's service (in terms of place), improve customer service, improving transaction speeds and reduce queues in the bank hall.

Despite the numerous benefits that E-banking technology brings to the nation, banks and individuals, it also has its own challenges. The challenges as discussed in the study can be categorized into three main groups i.e. Organizational, environmental and technological. Cost of

ICT equipment and network, software and re-organization, lack of technical and managerial skills in implementation and expansion of E-banking technology, resistance to changes in technology among by Board, top Management and staff and lack of customer awareness with E-banking product are described in the study as organizational challenges for implementation and expansion of E-banking at Dashen bank. Absence of financial networks that links different banks, lack of law mandating the bank to adopt E-banking technology, tight foreign currency regulation, lack of legal framework for E-banking, network infrastructure and internet related support services, frequent power disruption, customer low levels of computer literacy and limitation in ICT infrastructure are environmental challenges for implementation and expansion of E-banking technology at Dashen bank.

In connection with technology factors, audit trail, lack of confidence with the security aspects, customer fear of risk to use E-banking technology, users do not trust the E-banking technology provided by the bank and money laundering and other financial crimes are easily facilitated through E-banking are the basic challenge implementation and expansion of E-banking technology at Dashen bank.

Finally, increment of educated potential customer, improvement in the banking habit of the society, late adopter opportunities, existence of high demand, commitment of the government to facilitate the expansion of ICT infrastructure and commitment of the government to strengthen the banking industry are existing opportunities fostering the implementation and expansion of E-banking technology in Dashen bank.

5.2 Recommendations

Based on the findings the researcher came up with the following possible recommendations to policy makers, Dashen bank, and the government in order to overcome the challenges, exploits the untapped opportunities in implementation of E-banking technology and to ensure a successful practice of E-banking technology.

- Dashen Bank should create deep awareness to community concerning the E-banking products and the benefits associated with using E-banking services through advertising its products and services on the internet, mass media as well as through organizing public

exhibition and talk shows. Besides, the bank should attract the community to use the technology by diverse incentive campaigns. This way, customers' interest would be aroused;

- Dashen Bank should work to improve customers' confidence by providing adequate security protocol of transaction with E-banking this will be possible by subsidize e-banking activates of the bank with other bank like that of ATM services.
- Dashen Bank should facilitate proper and continuous training courses for their employees and management to have adequate understanding of the E-banking technology so as to achieve the desired objectives side by side giving some incentives or reward for the employees who are strongly working that is used to initiates other.
- High cost of ICT equipment and network, software and re-organization has been a challenge that the bank facing in the implementation and expansion of E-banking. The researcher therefore, recommend that either bank should raise fund by issuing share to public in order to acquire these facilities needed in the industry or the banks jointly acquire the ICT equipments to use together as other countries banks did for instance the banks have an opportunity to use one of bank's ATM together in order to overcome the challenge as well as to reduce the damaging of the foreign currency to import the ATM machines.
- Government should support banking sector by facilitating development of sufficient ICT infrastructure for the successful implementation and expansion of E-banking services for example by weaving charges on ICT equipments.
- The central bank should issue suitable legal frameworks for implementation of the E-banking technology.

References

- Abiy D. (2008, March, 17). Capital, weekly news paper, Addis Ababa
- Alhaji Ibrahim H. (2009). Understanding the e-payment system in Nigeria
- Al-Sabbagh, I., and Molla, A. (2004). "Adoption and Use of Internet Banking in the Sultanate of Oman: An Exploratory Study. "Journal of Internet Banking and Commerce 9(2): 1-7.
- BankAway(2001). Net Banking Benefits! Sheer Acceleration, Electronic Banking: The Ultimate
- Berger, S. C., & Gensler, S. (2007, April). Online Banking Customers: Insights from Germany.
- Booz, D., and Hamilton, K. (1997). 'E-banking: A Global Study of Potential Effects', New York,NY.
- Booz-Allen and Hamilton (1999). Corporate internet banking: A global study of potential Effects', New York, NY.
- Burr, W.(1996) "Wie Information stechnik die Bank organization verändern könnte," Bank und Markt, 11, pp. 28–31.
- Business in Ethiopia, Dashen bank payment news, Dashen bank (www.dashenbanksc.com), retrieved on April, 2013,
- Business in Ethiopia, Dashen bank payment news, Dashen bank (www.dashenbanksc.com), retrieved on August,2015,
- C.S.V. Murthy(2004). "E-commerce, Concepts, models and Strategies(ed), Himalya Publishing House, Mumbai.
- Chitura T., Chuma W., Dube T and Runyowa L (2008). "Electronic Commerce benefits and adoption barriers in small and medium enterprises in Gweru, Zimbabwe", Discussion Paper University of Kwa Zulu Natal, South Africa.
- Daniel, E. (1999). "Provision of electronic banking in the UK and Republic of Ireland", International Journal of Bank Marketing, Vol. 17 No. 2, pp.72-82.

- Delali, L. (2010). E- Banking in Estonia: Reasons and Benefits of The Rapid Growth, Faculty
- Dewan, R., and A. Seidmann (2001). "Communications of the ACM," Current issues in E-Banking (Special section), 44(6): 31-57.
- Dixon and Nixon, (2000). On-line banking: Strategic and management challenges pergamon. pp: 4-5
- Futcher, B. (2003). Consumers Perspectives on Online Banking Services. International Journal of Consumer Studies, Vol. 30 (6), pp.552–560.
- Guide to Business and Technology of Online Banking.
- Harrison, (2012). The Banking Industry in the Emerging Market Economies: Competition, Consolidation and Systemic Stability: An Overview. No. 4, pp: 43-44.
- <http://www.scribd.com/doc>, retrieved on April, 2010,
- Isaac Awuondo (2005). The Future of e-Banking in Africa.
- Journal of Internet Banking and Commerce, 12(1).
- Juniper (2010), [http://www.juniper.net/us/en/whitepapers-control system cyber vulnerabilities and potential mitigation of risk for utilities](http://www.juniper.net/us/en/whitepapers-control%20system%20cyber%20vulnerabilities%20and%20potential%20mitigation%20of%20risk%20for%20utilities), retrieved on April, 2010.
- Kothari, Research Methodology Methods & Techniques, 2nd edition , New Delhi :New age International publisher, 2004, pp. 1-2.
- Leow, Hock, Bee (1999). New Distribution Channels in Banking Services, Bankers Journal
- Mahdi Salehi(2004). E-Banking in Emerging Economy: Empirical Evidence of Iran (Corresponding author) Accounting and Management Department, Zanjan University, Iran Ma Zhiyong,
- Mohammad Mizanur Rahman (2008). E-Banking in Bangladesh: Some Policy Implications.
- Mohammed shamsuddoha (2008). Development of electronic banking service in Bangladesh, journal Of Business Solutions, Vol. 1, No.2.December 2008

- Mols, Niels. (1998). The Behavioral Consequences of PC banking, *International Journal of Bank Marketing*, pp. 195–201.
- National Bank of Ethiopia (2008/09). Fourth quarter bulletin of the national bank of Ethiopia.
- National bank of Ethiopia (2009) .The history of banking and other financial institution in Ethiopia,
- OECD, Paris. Online Banking Reports (www.wells.fargo.com) of Economics and Business Administration, University of Tartu
- Organization for economic cooperation and development (OECD, 2001). Electronic finance: Economics and Institutional Factors, occasional paper No 2, financial affairs division,
- Rahman, M.(2006). Innovative Technology and Bank Profitability: The Bangladesh Experience.
- Sathye M.(1999). “Adoption of internet banking by Australian consumers: and empirical Investigation”, *International Journal of Bank Marketing*, Vol. 17, No. 7, pp. 324-334, MCB University Press.
- Shah and Clarke (1997). E-Banking-Management-Issues-Solutions-and-Strategies
- Sherah Kurnia, Fei Peng, Yi Ruo Liu, (2005). Understanding the Adoption of Electronic Banking in China, the University of Melbourne Sherahk@unimelb.edu.au
- Shih, B. & Fang, K. (2004). The use of decomposed theory of planned behaviour to study internet banking in Taiwan. *Internet Research*, 3(14), 213-223
- Shyamapada B, Abu T., and Salman S. Shinwary, (2011). Online banking: a field study of drivers, development challenges and expectations. *International Journal of Information and Management*, 2 (1), 213–225
- Singh, B. and Malhotra, P. (2004). Adoption of Internet banking: An empirical investigation of Indian banking Sector. *Journal of Internet Banking and Commerce*, 9 (2).
- Taro Yamane (1967). “Analysis of sample size in consumer surveys”, 2nd Ed., New York.

The financial service authority (FSA) <http://www.fsa.gov.uk>. E-banking risks, retrieved on may,2010

Tornatzky and Fleisher (1990). E-Banking Problems and Prospects.

United Nations Conference on Trade and Development (UNCTAD) (2002). E-Commerce and Development Report 2000 (New York & Geneva: United Nations

Young, R. D., Lang, W. W., & Nolle, D. L. (2007). How the Internet affects output and performance at community banks. *Journal of Banking & Finance*, 31, 1033– 1060

ANNEXES

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Research Questionnaire for Bank Employees

Dear Sir/Madam

This research questionnaire is prepared to collect data from the respondents in order to assess the opportunities and challenges of E-banking service in Dashen Bank. I am undertaking a research project on the assessment of the opportunities and challenges for of E-banking service in Dashen Bank. The quality of the result of this research will be based on the accuracy of the information you provided. Eventually, I promise you, the information you will provide me is going to be reported and communicated in aggregate and utmost care will be taken for its confidentiality.

I would like to thank you for your cooperation and allowing me to take a few minutes of your valuable time.

NOTE:-

- No need of writing your name
- Your confidentiality maintained sincerely

I. Respondents personal information

1	Sex	Male	Female			
2	Age	<20	20 – 30	31 – 40	40 – 49	Above 50
3	Education level	Diploma	BA/BSC	MA/MSC		
4	Years of experience	> 1	1 to 5	6 to 9	>=10	
5	Position in the bank	Managerial		Clerical		

II. Research questions about challenges and opportunities of E-banking in Dashen bank.

6. What type of E-banking services is provided by the bank? (You can choose more than one)

- ATM
- Mobile Banking
- Internet Banking
- Point-of-Sale Terminals

7. If any, please specify _____

8. Do you believe that the following reasons are push factors for the implementation of E-banking service for Dashen bank? Please fill the question by considering the level of agreement

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree

S.No		1	2	3	4	5
1	To improve organizational performance and productivity					
2	To improve the customer service & relationship with customers					
3	To cover wide geographical area					
4	To build organizational reputation					
5	To reduce transaction cost					
6	Existence of high competition in the banking industry					
7	To satisfy rapid change of customer needs and preferences					

9. If any, please specify other push factors

10. What bank services are available for Dashen bank customers by using E-banking?

11. The following are some of the benefits the Banks realized from adoption and expansion of E-banking system; please indicate your level of agreement.

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree

		1	2	3	4	5
Operational Benefits	Reduced paper work					
	Low transaction cost					
	Enhance productivity in the bank					
	Enhance foreign currency generation					
	Increase reliability and reducing errors					
Services Benefits	E-banking is convenient, in terms of 7 days and 24 hours services i.e. accessibility					
	Enhance accessibility of the bank's services (in terms of place)					
	Improve customer service					
	Improving transaction speeds					
	Reduce queues in the banking hall					

12. If any, please mention some benefits of the Bank from adoption of E-banking system?

13. Please indicate the extent you agree or disagree of the Potential challenges that affect to adoption or development use of E-banking technologies.

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree

		1	2	3	4	5
Organizational Factors	Lack of customer awareness with E-banking product					
	Lack of technical and managerial skills in implementation and development of E-banking technology					
	High cost of implementation of E-banking. (such as cost of ICT equipment and network, software and reorganization)					
	Resistance to changes in technology among by Board, top Management and staff					
Environmental Factors	Lack of legal framework for E-banking					
	Lack of law mandating the bank to adopt E-banking technology					
	Limitation in network infrastructure and internet related support services					
	Customer low levels of computer literacy					
	Limitation in ICT infrastructure					
	Absence of financial networks that links different banks					
	Frequent power disruption					
	Tight foreign currency regulation					
Technological Factor	Lack of confidence with the security aspects					
	Loss of Audit Trail;					
	Money laundering and other financial crimes are easily facilitated through e- banking;					
	Users do not trust the E-banking technology provided by banks					
	Customer fear of risk to use E-banking technology;					

14. If any, Please mention Potential challenges that affect to adoption or development use of E-banking technologies?

15. What are the existing opportunities in the country that initiates the adoption and expansion of E-banking?

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree

S.NO	Opportunities	1	2	3	4	5
1	Improvement in the banking habit of the society					
2	Late adopter opportunities					
3	Commitment of the government to strengthen the banking industry					
4	Commitment of the government to facilitate the expansion of ICT infrastructure					
5	The existence of high demand					
6	Increment of educated potential customer					

16. If any, please mention some other opportunities for E-banking?

Thank you for your cooperation!

DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for Degree in any other university and that all sources of materials used for the thesis have been Duly acknowledged.

Declared by:

Name: **Addis Bogale**

Signature_____

Date_____

Confirmed by Advisor:

Name: Dr. **Afewerk Getachew**

Signature_____

Date_____

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

Signature & Date

Advisor