



ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES

**ASSESSMENT ON THE CHALLENGES AND PROSPECT OF E-BANKING IN
ETHIOPIAN BANKING INDUSTRY: A CASE OF SELECTED COMMERCIAL
BANKS**

BY:
MURAD ABRAR

ADVISOR: ZEMENU AYNADIS (ASSISTANT PROFESSOR)

May 2017
Addis Ababa, Ethiopia

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**A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES OF
ST.MARY'S UNIVERSITY IN PARTIAL FULFULIMENT OF THE
REQUIRMENT FOR MASTER OF GENERAL BUSINESS ADMINSTRATION**

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MURAD ABRAR

Approved By Board of Examiners

Dean, Graduate Studies

Signature

Advisor

Signature

External Examiner

Signature

Internal Examiner

Signature

Declaration

I, the undersigned, declare that this thesis is my original work, has not been presented for degree in any other university and has made it independently with the close advice and guidance of my advisor. In addition, that all sources of materials used for the thesis have been duly acknowledged.

Declared by

Name: MURAD ABRAR

Signature _____

Date_____

Place and Date of Submission:

St. Mary's University Date, MAY 2017

Table of Contents

Contents	Pages
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.2 Statement of the Problem	4
1.3 Research Questions	5
1.4 Objectives' of the Study.....	5
1.4.1 General Objectives of the Study.....	5
1.4.2 Specific Objective of the Study	6
1.5 Significance of the Study	6
1.6 Scope and Limitation of the Study	7
1.7 Organization of the Paper.....	7
CHAPTER TWO	9
REVIEW OF RELATED LITERATURE	9
2.1 Definition of Electronics Banking.....	9
2.2 Historical Background of Banking in Ethiopia	10
2.3 Commercial Banking Practice in Ethiopia	12
2.4 Evolution of E-banking	12
2.5 E-banking System in Ethiopian Banking Industry	14
2.6 Factors Influencing Banks to Adopt E-Banking System	17
2.7 Types of E-banking	23
2.7.1 ATM	23
2.7.2 Point of Sale Machines	24
2.7.3 Mobile Banking	25
2.7.4 Internet Banking	26
2.7.5 Tele Banking.....	26

2.7.6 Debit Cards	27
2.7.7 Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT).....	27
2.8 Responsibilities of Ethio Switch Share Company in the Development of E-Banking in Ethiopia.....	28
2.8.1 Ethio Switch Share Company.....	28
2.9 Challenges of Adopting E-banking.....	30
2.9.1 Challenges of Adopting E-banking in Ethiopia.....	31
2.10 Benefits of Adopting E-banking.....	32
2.11 Empirical Studies Related with E-banking Challenges and Prospects	37
CHAPTER THREE	47
RESEARCH DESIGN AND METHODOLOGY	47
3.1 Description of the Study Area.....	47
3.2 Research Design.....	47
3.3 Research Approach	48
3.4 Source of Data.....	48
3.5 Data Collection Methods.....	48
3.6 Definition of Target Population	49
3.7 Sampling Design	50
3.8 Data Analysis	51
3.9 Ethical Considerations.....	51
CHAPTER FOUR.....	52
RESULTS AND DISCUSSION	52
4.1 Introduction	52
4.2. Demographic Information of the Respondents	52
4.3. Challenges of Adopting E-banking System in Ethiopia	54
4.3.1. Environmental Factor	54
4.3.1.1. Lack of Government Support.....	55

4.3.1.2 Lack of Legal and Regulatory Framework	57
4.3.1.3 Lack of Competitive Pressure	59
4.3.1.4. Lack of adequate ICT Infrastructure.....	60
4.3.2. Organizational Factor	62
4.3.3 Technological Factor	64
4.3.3.1. Perceived Risk	64
4.4. Perceived Benefits of Electronic Banking of Adopting E-banking System in Ethiopian Banking Industry.....	66
4.4.1. Perceived Ease of Use	67
4.4.2. Perceived Usefulness.....	68
4.4.2.1. Time Saving	68
4.4.2.2. Cost Saving.....	70
4.5 Analysis of the Interviews.....	71
4.5.1 Interview with Six-selected Bank Electronics Banking Department Heads/ Manager	71
4.5.2 Interview with National Bank of Ethiopia (NBE) Payment Settlement and System Director	75
CHAPTER FIVE	78
SUMMARY OF FINDINGS, CONCLUSION And RECOMMENDATION	78
5.1 Summary of Findings	78
5.2 Conclusion.....	79
5.3 Recommendation.....	80
REFERENCES.....	82
APPENDICES.....	91

Acknowledgment

“All praise and thanks is to Allah, the Lord of existence, the most Gracious, the most Merciful” (Alhamdulillah Rebil Alemin).

Secondly, a heartfelt gratitude and appreciation goes to my advisor, Zemenu Aynadis (Asst.prof), for his genuine approach, valuable guidance and in depth understanding that he extended to me during the entire work of this paper and enabled me to complete this research paper.

I also would like to express my deepest indebtedness to my parents and my wife Zeynbe Kassim, as always they were there, right beside me in my sorrow and joy, and may Allah reward them all with his highest blessings.

True, this paper has been made possible through the direct and indirect cooperation of various persons, for all I wish to express my appreciations and gratitude.

Finally, I wish to acknowledge the efforts and support of those individuals and their institutions that led to the success of this study such as six commercial banks employees and their official IT Manager

Key Words: e-banking, challenges of e-banking and prospects, mobile banking, internet banking, POS, ATM.

Acronyms

ATM	Automated Teller Machine
ACH	Automated Clearance House
AVR	Automated Voice Record
CBE	Commercial Bank of Ethiopia
CSF	Critical Success factor
CEO	Chief Executive officer
CORE	Centralize Online Real-time and Electronics
DIT	Diffusion Innovation Theory
E-Banking	Electronic Banking
E-Commerce	Electronic commerce
EFT	Electronic Fund Transfer
EATS	Ethiopians automated Transfer System
ERP	Enterprise Resource Planning
GDP	Gross Domestic Product
ICT	Information communication Technology
IT	Information Technology
LC	Letter Of Credit
NBE	National Bank of Ethiopia
NPS	National Payment System
PC	Personal Computer
PDA	Personal Digital Assistant
PEOU	Perceived Ease of Use
PIN	Personal Identification Number

POP	Point Of purchase
POS	Point Of Sales Machine
PSBs	Public Sector Bank
PSSD	Payment Settlement and System Director
PU	Perceived Usefulness
RTGS	Real TIME Gross Settlement
SPSS	Statistical Package for Social science
SWIFT	Society For world Wide Inter-Bank Facial Telecommunication
TAM	Technology Acceptance Model
TBP	Theory of Planned Behavior
TOE	Technology Organization Environment

LIST OF TABLE

	Pages
Table 2.1 All banks various access channels distribution in 2016 and 2017.....	15
Table 2.2 E-Banking Services Provided by six Ethiopian Banks	16
Table 3.1 E-banking professional staffs in each bank	50
Table 4.1 Demographic information of the respondents	53
Table 4.2 Customers are not to accept E-banking service	55
Table 4.3 the development level of providing infrastructure impacts of ne banking	56
Table 4.4 Government support	57
Table 4.5 Cross-country legal and regulatory impact on the adoption of e banking service.....	58
Table 4.6 lack of legal frame works that enforce banking industries to adopt technological innovation.....	58
Table 4.7 Legal and regulatory framework.....	59
Table 4. 8 lack of competition among local and foreign bank.....	60
Table 4.9 Lack of ICT Infrastructure	61
Table 4.10 Organizational factor	63
Table 4.11 Technological factor	64
Table 4.12 Perceived use of ease	67
Table 4. 13 perceived usefulness in terms of time saving	69
Table 4. 14 Perceived usefulness in terms of cost saving.....	70

LIST OF FIGURE

	Pages
Figure 2. 1 Technology-organization-Environment framework (TOE)	18
Figure 2.2 Technology Acceptance Model (TAM)	19
Figure 2. 3 List of Technology-Organization-Environment frameworks (TOE)	21

ABSTRACT

This study attempts to assess and evaluate the challenges and prospects of electronic banking facilities in the Ethiopian banking industry. With respect to the challenge, this can influence firms from taking advantage of E-banking system and expected prospect by adopting the system. The study was conducted based on the data gathered from six banks in Ethiopia; five private banks. (Dashen bank, Zemen bank, Awash international bank, United bank, Abyssinia bank) and one state owned bank (commercial bank of Ethiopia).descriptive research approach was implemented. The study was used purposive sampling technique target population the study were electronic banking staff. Mixed research approach was uses to answer the research questions that emerge through the review of existing literature. The study data has been obtained from the survey questionnaire and interview also the study was use descriptive analysis techniques .research framework developed based on technology-organization-environment framework and Technology acceptance model to guide the study.

The result of the study indicated that, the major challenge Ethiopian banking industry faces in the adoption of Electronic banking are on to technology-organization-environmental model, security risk, lack of trust, lack of legal and regulatory frame work, Lack of ICT infrastructure like electric power and telecom network, lack of sufficient government support. In addition, absence of competition between local and foreign banks, The study also identified perceived ease of use and perceived usefulness as a prospect of adopting E-banking system under technology- acceptance model, such as increase convenience, transaction minimization, cost saving, improvements in speed and efficiency items of time and cost saving.

The study recommends that Ethio telecom should have to support banking industry by investing on ICT infrastructure developments, government should support the banking industry by introducing financial education program, establishments of a comprehensive legal and regulatory frame works on the use of technological innovation.

Key Words: e-banking, challenges of e-banking prospects, mobile banking, internet banking, POS, ATM

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The application of ICT is paramount concern to the banks in today's business environment and internet. In particular, the Internet has increasingly become the major platform for all financial, banking and commercial transactions (Magembe and Shemi.2002). It is an invaluable and powerful tool driving development, supporting growth, promoting innovation and enhancing competitiveness (Kamel, 2005 and Nath, and Par, 2001).

The evolution of banking technology has been driven by changes in distribution channels as evidenced by Automated Teller Machine (ATM), debit card, visa card, mobile banking, point of sale machine (POS) terminals, PC banking and most recently internet banking. The paperless banking has become inevitable (Goi .2005).

Most banks in developed and some developing parts of the world are now offering E-banking service with various levels of sophistication (Gurau, 2002). The most recently delivery channel introduced is online or E-banking (Daniel & Storey, 1997). Online or E-banking systems give everybody the opportunity for easy access to their banking activities.

Currently, there is rising competitiveness in the financial service market, which resulted in force to expand and exploit different delivery mechanisms to stay and sustain in the market. A strong banking sector is vital in every nation and can have an important consequence in supporting economic development through efficient financial services. The role of the banking sector is going with the globalization movement at the practical level. This change will comprise moving from conventional service to electronic service delivery of banking services. E-Banking scheme has paved the way of opportunity to the existing banks and financial sector. This technology allows business process re-engineering, serving borderless market, to attain zero latency leading to development in customer service levels and better risk administration because of real-time settlement. Since its evolution in the 90s, it is having unprecedented growth. The growth rate is

higher in developed nations and lower in least developed nations (Chang, 2003; Gallup, 2008).

According to Jensen (2003), most countries in Africa, except South Africa, have Internet infrastructure only in their major cities. Lack of suitable legal and regulatory framework for E-commerce and E- payment is another impediment for the adoption of new technology in banking industry.

The appearance of E-banking in Ethiopia goes back to the late 2001, when the largest state owned, commercial bank of Ethiopia (CBE) introduced automatic teller machine to deliver service to the local users. Electronic banking facilities provided by most Ethiopian Banks are very basic.

Ethiopia has not yet enacted legislation that deals with E-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies and High rates of illiteracy. Low literacy rate is a serious impediment for the adoption of E banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-banking, they should not only know how to read and write but also possess basic ICT literacy (Gardachew 2010). However, risks related with security issue, lack of competition among local & foreign banks and social awareness on the E-banking system were not addressed.

Financial service industry has recently emerged a new advanced technology and advancing rapidly in all areas of financial intermediation and financial markets. The new information technology is turning in to the most important factor in the future development of banking, influencing banks marketing and business strategies. In recent years, the adoption of electronics banking (E banking) began to occur quite extensively as a channel of distribution for financial service due to rapid transformation of technology. In addition to this, the rapid growing of information and communication technology (ICT) is knocking the front door of every organization in the world, where Ethiopian banks would never be exceptional. In the face of rapid expansion of E-payment system throughout the developed and the developing world, Ethiopian's financial sector cannot remain an exception in expanding the use of system (Gardachew, 2010).

All most, all banks operated in Ethiopia with some exemptions² provide service to customers by using traditional systems, that is why every bank customer is highly dissatisfied by the disappointing status of financial development in Ethiopia. Even the time wasted in travelling for search of bank branches and the long waiting time to access the account is disappointing. This is particularly because of the non-integration of branches of the same bank, i.e. even within individual banks, their branches are not linked to each other and it is must to physically visit the branch in which an account has been opened. As stated in different E-banking literature, some of the problems related with adoption of E- banking are low level of internet penetration and poorly developed telecommunication infrastructure.

Most of the Ethiopian banking industry operations are supported by ICT to increasing their competitive advantage. One of the advanced technologies is electronics banking (E-banking) which includes several kinds of services.

- Mobile banking
- Internet banking
- Debit card
- ATM machine
- POS machine terminals etc.

E-banking services provide different services for their customer among services are fund transfer, cash withdrawal, balance enquire, financial statement, letter of credit, salary payment, standing order, PIN change, account-to-account transfer, sending money for their partners who have no bank account and other alike. The driving force behind the rapid transformation of banks are the application of ICT and innovations in financial products in order to cope up with the dynamic nature of customers demand, liberalization and consolidation of financial markets, and deregulation of financial intermediation.

1.2 Statement of the Problem

The role of information technology to the bank sectors are getting bigger. As a result, banks are adopting technologies that help them deliver banking services by the most cost effective channels and one of such channel is adoption of e- banking or internet banking (Booz and Hamilton, 1997)

E-banking services are at an infant stage in Ethiopia; even though expansion of e-banking throughout the developed and the developing world is rapid, Ethiopia's financial sector remain behind in expanding the use of the service. Certainly, the banking industry is not well developed with a growing number of international trades; increase the demand of the customer and international relations. The today's banking system has problems of offering efficient and dependable services (Gardachew, 2010).

In Ethiopia, most banks practicing online banking are facing challenges such as customer preference of the online banking facility, very poor connection, trust of the people in the modern technology, convenience of clients to utilize and adopt online banking facilities (Mattewos, 2016). The transaction costs of providing E-banking or ICT 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).

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.

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 unable to providing efficient and dependable services. The customers of Ethiopian commercial banks have missed to enjoy with the technological advancement in banking sector, which has been entertained elsewhere in African and the rest of the world. The modern e-banking methods like ATM, Debit cards, Credit cards, Tele banking, Internet banking, Mobile banking and others are new to the Ethiopian banking sector.

Previous studies discussed about Challenges and prospects of E-banking in Ethiopia, focuses only on automatic teller machine (ATM) and point of sale(POS), however this study was focus on including recently launched technologies like internet banking, mobile banking, and also ATM and point of sale. Therefore based on the research problems discussed above this study intended to assess challenges and prospect on adoption of E-banking system in Ethiopian financial industry.

1.3 Research Questions

In order to achieve the intended research objectives and to address the research problem properly, the following research questions are designed

1. What are the existing challenges for the adoption of electronics banking service in Ethiopia banking industry?
2. What are the benefits of electronics banking service from the viewpoint of the bank?
3. What is the current practice of E-banking adoption in Ethiopian Commercial Banks?

1.4 Objectives' of the Study

1.4.1 General Objectives of the Study

The main objective of this study was to investigate the challenges and prospects on adopting of Electronics banking in Ethiopian banking industry (in case of selected commercial bank).

1.4.2 Specific Objective of the Study

The specific objectives this study will be as follows:

- ❖ To assess the current challenges in adoption of e-banking in Ethiopia
- ❖ To identify the benefits of Ethiopian banking industry and its customers derive force from E-banking.
- ❖ To analysis, the current practice of E-banking adoption in Ethiopian Commercial Banks.
- ❖ Recommend appropriate actions to be taken to promote E-banking system in Ethiopia

1.5 Significance of the Study

Now a day IT based banking service in the Banking industry is one of the core resources for competitiveness and assurance of better service. Currently the internet and internet-based technologies have revolutionized the way banks operate and interact with their environment. A major force behind the development of bank is technology, which is breaching geographical, industrial and regulatory barriers, creating new products, services and market opportunities and developing more information and system oriented business and management process (Liao & Cheung 2002).

One of the products of global technological changes is the advent of online banking (E-banking). Online 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. It has been identified as the fastest growing area for business (Aladwani, 2001) and many banks are improving on use of their online banking facilities to move along with global trend.

This study tries to identify the solution by investigating different opportunities and challenges for the adoption of this service delivery channel and by recommending solutions for the identified problems.

This study was help banks to benefit from the adoption of E-banking service and customers to gain effective 24/7 service from the bank because of E-banking. The findings of this study would be useful to policy makers in the banking sector in formulating appropriate strategies to build customer satisfaction, and a guide to create cashless society in Ethiopia through adoption of electronic banking in Ethiopia to facilitate economic and social growth. In addition, it also reflected better insight to researchers and students about the problem and stimulate future investigation of the E-banking issue.

1.6 Scope and Limitation of the Study

As stated above, this research was focus on investigate major challenges and benefits of adoption of E-banking in the Ethiopian banking industry. The study was also target on the various types of E-banking products and service that have been providing by the related commercial banks in Ethiopia. Due to time constraint and the attention needed from the officials and respondents of the bank, this study was limited to only one state owned bank and five selected commercial banks in Ethiopia only their branch are operated in Addis Ababa. it excluded other financial institutions to explore the intent of the study.

Those banks were selected from the total population; based on their familiarity with technological innovations in Ethiopia. This study was used the purposive sampling procedure decreases the generalizability of findings and this study might not be generalizable to all areas of financial institutions

1.7 Organization of the Paper

The research was be organized in to five chapters and the outline of each chapter is gives as follow

Chapter one – this chapter was discuss the introduction, background of the study, statement of the study, research question, objectives of the study, significance of the study, scope and limitation of the study and organization of the study.

Chapter two – it was include literature review from relevant books, journals, articles, websites and other referenced sources. It was also include the theoretical framework was uses for the study.

Chapter three – this chapter was cover the research methodologies were uses for the study including the study design sampling and sampling techniques.

Chapter four – was present and analysis of data by way of figures, graphical presentation, and statistics and interpreted.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Definition of Electronics Banking

Electronics Banking is the use of a computer to retrieve and process banking data (statements, transaction details etc.) and to initiate transactions (payments, transfers, requests for services) directly with a bank or with other financial service provider remotely via a telecommunications network (Yang 1997). E banking is a form of banking service where funds are transferred through an exchange of electronic signal between financial institutions, rather than exchange of cash, checks or other negotiable instruments (Kamrul, 2009).

E banking is the automated delivery of new and traditional banking product and services directly to customers through electronic medium (Mols, 1998). This system allows customer to access their accounts, transact business, make enquires and have prompt responses from banks.

E banking is forms of banking service were funds are transferred through an exchange of cash, checks and other negotiable instruments (Kamrul, 2009). E banking also known as Electronic Funds Transfer (EFT) is simply the use of electronic means to transfer funds directly from one account to another, rather than by check or cash (Malak, 2007).

The e- banking is transforming the banking and financial industry in through various innovations in terms of the nature of core products or services and the way these are packaged, proposed, delivered and consumed. It is invaluable and powerful tool driving development, supporting growth promoting innovation and enhancing competitiveness (Kamel 2005).

According to Daniel (1997) describes electronics as the provision of banking services to customers through internet technology. E-banking is defined also the automated delivery of new

In addition, traditional banking products and services directly to customers through electronic, interactive communication channels.

E banking can be defined as the deployment of banking services and products over electronic and communication network directly to customers (Singh & Malhotra 2004).

E banking is a delivery of banking service to customers at their office and home with the help of electronic technology is termed as e banking. According to Daniel (1997) defines e- banking as the delivery of banks information and services by banks to customers via different delivery of banks and information and services by banks to customers via different delivery platforms. It can be used with different terminal device such as a personal computer and a mobile phone with browser or desktop software, telephone, digital television.

E 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 many consumers-banking means 24/7, (hr. /day) access available to cash through an ATM or direct deposit of paychecks into checking or saving accounts (FTC, 2010).

2.2 Historical Background of Banking in Ethiopia

The history of modern banking in Ethiopia goes back to 1900 when an agreement was reached in 1905 between emperor Menelik II and Mr. Gillivray, representative of the British owned national bank of Egypt. This period witnessed the establishment, as most readers will know, of the country's first bank called the Bank of Abyssinia, or in Amharic "Ye-Ityopya Bank", it was an affiliate of the National Bank of Egypt, and was founded in 1905 (Pankhurst, 2012.).

Following the agreement, Bank of Abyssinia was inaugurated in Feb 16 1906 by the emperor with agreed capital of 500, 000-pound sterling.

National Bank of Egypt having been entrusted of the project, the new institution was chartered in Cairo and its shares were subscribed in a number of countries besides Ethiopia. The Bank of Abyssinia was given a 50-years concession and was engaged in issuing notes, collecting deposits and granting loans, but its clients were mostly foreign businesspersons and wealthy Ethiopians. A new bank, the Bank of Ethiopia, under Government control was established in 1931 and retained management, staff, premises

and clients of the old bank. Italian occupation in 1936 brought the liquidation of the Bank (Arnaldo, 2003).

- i. The Italian invasion of 1935 put a different complexion on the evolution of banking in Ethiopia. The operations of Bank of Ethiopia were replaced by subsidiaries of the Italian parent banks of Banco d' Italia, Banco di Roma Banco, di Napoli and Banco Nazionale del Lavoro. After the end of the fascist occupation, it was the turn of a British based bank Barclays Bank, to set up shop on Ethiopian soil in 1941; but it was shortly afterwards (1943) replaced by the state Bank of Ethiopia. The state bank of Ethiopia continued the dual role of a central and a commercial bank it had inherited from its predecessors (Tekle-Birhan, 2007).

The year 1963 was yet another landmark in the annals of the history of banking in Ethiopia. A formal Monetary and Banking law was proclaimed for the first time, separating the functions of central and commercial banking. Hence the National Bank of Ethiopia and the Commercial Bank of Ethiopia were separately created as a central bank and a commercial bank, respectively (Tekle-Birhan, 2007).

Monetary and Banking proclamation of 1994 established the national bank of Ethiopia as a judicial entity, separated from the government and outlined its main function. 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 million. Dashen Bank was established on September 20, 1995 as a share company with an authorized and subscribed capital of Birr 50.0 million. Bank of Abyssinia started their operation with 131 shareholders with subscribed and authorized capital of 25.0 million and 50 million respectively founded bank of Abyssinia. The fifth private bank, United Bank was established on 10th September 1998 by 335 shareholders. Zemen Bank started operation on June 17, 2008 with an authorized capital of Birr 87.0 million. (NBE, 2012).

2.3 Commercial Banking Practice in Ethiopia

Currently in Ethiopia has two states owned and 16 private banks are operating until the end of April 2017. Recently Ethiopia has three state owned banks but now construction and Business Bank merge with Commercial Bank of Ethiopia. The Ethiopian banking system is still underdeveloped compared to the developed countries like USA, Europe and Asian countries. However, the service provision is better from the earliest service, which was provided by the bank in Ethiopia. As a result of competition from the rest of the world, the bank tries to introduce different kind of product and service but the problem is the developed countries rich in updated and recent technology and our banks tries to achieve and join this technology the foreign banks again introduce the technology and update themselves.

The common banking functions provided by public and private banks in Ethiopia are deposit mobilization, credit allocation, money transfer and safe custody, electronic payments like card banking, fund transfer, buying goods and service in the POS terminal, E-banking including internet banking, mobile banking, agent banking and others (Birritu, no 120, 4th quarter Bulletin 2008/9).

2.4 Evolution of E-banking

The banking industry is constantly responding to changes in customer preferences and needs; increasing competition from non-banks, changes in demographic and social trends, information technology advances, channel strategies, and government deregulations of the financial service sector (Byers & Lederer, 2001).

Electronic innovation in banking industry can be traced back to 1970, when the computerization of financial institutions gained momentum (Malak 2007), However; a visible presence of this was evident to the customers since 1980, with the introduction of ATM. Innovative banking has grown since then, aided by technological developments in the telecommunications and information technology industry. The early decade of the 1990s witnessed the emergence of automated voice response (AVR) technology. By using the AVR Technology, banks could offer telephone-banking facilities for financial services. With further advancements in technology, banks were able to offer services,

through PC owned and operated by customers at their convenience, with intranet propriety software. The users of these services were, however, mainly corporate customers rather than retail ones (Sohail & shanmugham 2003).

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). The security first network bank was the first Internet banking in the world that was built in 1995 in USA. After that, some famous banks introduced their internet banking one after another, such as Citibank and bank of America.

In the search for sustainable competitive advantages in the competitive and technological financial service industry, banks have recognized the importance to differentiate themselves from other financial institutions through distributions channels. This has

resulted in banks developing, and utilizing new alternative distribution channels to reach their customers (Daniel, 1999).

2.5 E-banking System in Ethiopian Banking Industry

The banking industry is constantly responding to changes in customer preferences and needs; increasing competition from non-banks, changes in demographic and social trends, information technology advances, channel strategies, and government deregulations of the financial service sector (Byers & Lederer, 2001).

The appearance of E-banking in Ethiopia goes back to the late 2001, when the largest state owned, commercial bank of Ethiopia (CBE) introduced ATM to deliver service to the local users. Electronic banking facilities provided by most Ethiopian Banks are very basic. However, e-banking facilities provided are at par with those in the region.

As per Zemen bank official web site (www.zemenbank.com) electronic banking facilities are multichannel based and include internet banking, ATM banking, Call center banking and SMS banking. In addition to eight ATM Located in Addis Ababa, CBE has had Visa membership since November 14, 2005. However, due to lack of appropriate infrastructure it failed to reap the fruit of its membership. Despite being, the pioneer in introducing ATM based payment system and acquired visa membership, CBE Lagged behind Dashen bank, which worked aggressively to maintain its lead in E-payment system. As CBE continues to move at a snail's pace in its turnkey solution for Card Based Payment system, Dashen Bank remains so far the sole player in the field of E-Banking since 2006. (Gardachew 2010)

Dashen bank, a forerunner in introducing E-banking in Ethiopia, has installed ATMs at convenient locations for its own cardholders. Dashes ATM are available 24 hours a day, seven days a week and 365 days a year providing service to Debit Cardholders and International Visa Cardholders coming to the country. At the end of June 2009, Dashen bank has installed more than 40 ATMs in its area branches, university compounds, shopping malls, restaurants and hotels. In the year June 30, 2015, the payment card services have witnessed significant strides, ATM machine deployed 1,234 and POS machine deployed 3,343 but in the current year increase this number to 1,639 and 7,337 respectively. (Annual report of the bank 2017 NBE)

Table 2.1 All banks various access channels distribution in 2016 and 2017.

S.N	Channels	As at June 30,2016	As at June 30,2017
1	ATM machine deployed	1,234	1,639
2	POS machine deployed	3,343	7,337
3	Number of bank branches	2614	3050
4	Connected bank branches	2464	2740
5	Number of debit card holder	2,329,285	4,165,231
6	Number of internet banking users	17,239	42,935
7	Number of mobile banking users	526,455	1,470,805
8	Agent banking	370	1153

N.B: primary data(2017):Source Annual report of NBE

Available services on Dashen Bank ATMs are: Cash withdrawal, Balance Inquiry, Mini statement, Fund transfer between accounts attached to a single card and Personal Identification Number (PIN) change. Currently, the bank gives debit card service only for Visa cards. Dashen bank clients can withdraw up to 5000 birr in cash and can buy goods and services up to 8,000 birr per day. Expanding its leadership, Dashen Bank has begun accepting Master Card in addition to Visa cards. Dashen won the membership license from MasterCard in 2008 and now accepting the American Express card via dashen ATM machine and POS machine.

The agreement signed by three private commercial banks to launch ATM and POS terminal network, in February 2009 is welcoming strategy to improve electronic card payment system in Ethiopia. Three private commercial banks Awash International Bank S.C. Nib International Bank S.C. and United Bank S.C. have agreed in principle to establish an ATM network called Fattan ATM network. There will be one ATM at every branch of the consortium banks, all domestic airports serviced by Commercial service, shopping complexes and merchants gradually the banks increase in to six Birhan International Bank, Addis International Bank and Cooperative Bank of Oromia but now join Ethio switch all banks. The agreement is the first significant cooperation between competing banks in Ethiopia, which others should be encouraged to follow as there is no single bank in Ethiopia that can afford to provide Extensive geographical coverage and access (Binyam 2009).

Table 2.2 E-Banking Services Provided by six Ethiopian Banks

S.N	Banks	Service provided
1	Commercial Bank Of Ethiopia (CBE)	Automated Teller Machine,(ATM), Telephone banking, bill payments, point of sales terminal(POS) Mobile Banking, Internet Banking and Agent banking
2	Dashen Bank (DB)	Automated teller machine (ATM), Mobile Banking (Modbirr), point of sale (POS) terminals, Telephone banking
3	Awash International Bank (AIB)	Automated Teller Machine (ATM), Point Of Sale (POS), Mobile Banking, Internet Banking, Telephone Banking, Utility payment
4	Bank of Abyssinia (BOA)	Automated teller machine (ATM), Point of sale Terminals (POS), Internet Banking, Agent banking
5	United Bank (UB)	Automated teller machine (ATM), Mobile Banking, Point of sale Terminals (POS), Internet Banking and Agent banking
6	Zemen bank(ZB)	Automated teller machine, (ATM), online banking, Point of sale (POS) terminals, internet banking, Mobile/phone banking

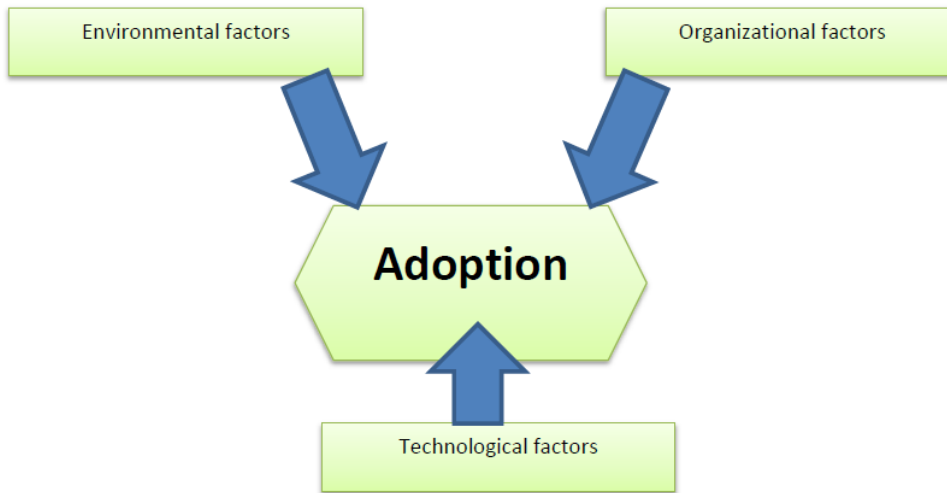
Source: Interviewee

2.6 Factors Influencing Banks to Adopt E-Banking System

Electronic banking adoption has gained special attention in academic studies during the past years to investigate factors of adoption. Many researchers have been used different frame works in the study of adopting new technological innovation. Among frameworks that have been developed based on the past studies includes.

- (Davis,1989) **Technology Acceptance Model (TAM)** (Pikkarainen 2004); (Cheng, 2006), which posit the two sets of beliefs, i.e., perceived ease of use (PEOU) and perceived usefulness (PU) to determine individual's acceptance of a technology. PEOU refers to the degree to which an individual believes that using a particular system would be free of physical and mental effort, PU on the other hand is related to users perception of the degree to which using a system will be beneficial (Alsabbagh & Molla2004).
- **Theory of Reasoned Action (TRA)** originally proposed by Fishbein and Ajzen (1975) (Gefen, 2003) and
- **Theory of Planned Behavior (TPB)** (Shih and Fang, 2004) originally proposed by Ajzen (1991).
- **Technology-organization-Environment framework (TOE)** Tornatzky & Fleischer 1990,which identifies three basic Factors for the adoption of technological innovation, i.e. technological factors, organizational and environmental factors.

Figure 2.1 Technology-organization-Environment framework (TOE)



Source: Tornatzky and Fleischer (1990)

1 The Theory of Reasoned Action (TRA)

It is probably one of the most influential theories used to explain human behavior. According to this theory, the behavioral intention can be explained by the attitude towards behavior and subjective norm. The attitude towards behavior is defined as individual's positive or negative feelings about performing the target behavior (Fishbein and Ajzen, 1975). Subjective norm refers to perception that most people who really matter to the individual think that he either should or should not perform the behavior in question" (Fishbein and Ajzen, 1975).

2 The Theory Planned Behavior (TPB)

Ajzen (1991) as an extension of TRA (Fishbein and Ajzen, 1975) for situations proposed these where people have incomplete volitional control. This suggests that a central factor in human behavior is behavioral intention, which is affected by attitude toward behavior, subjective norm, and perceived behavioral control (Ajzen, 1991). This construct reflects how people perceive the internal and external limitations to their behavior. It refers to how easy or difficult people believe it would be to perform certain behaviors (Ajzen, 1985)

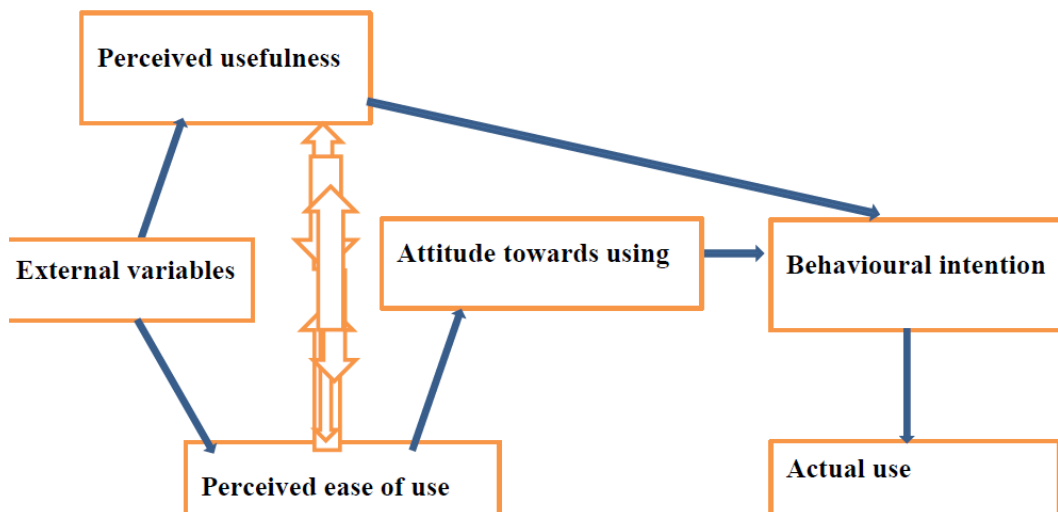
3 The Technology Acceptance Model (TAM)

Introduced by Davis (1985) is one of the most cited theoretical frameworks to predict the acceptance and use of new information technology within organizations. This model derives from the TRA. The Technology Acceptance Model hypothesizes that system use is directly determined by behavioral intention to use, which is in turn influenced by users' attitudes toward using the system and the perceived usefulness of the system. Attitudes and perceived usefulness are also affected by perceived ease of use. The two most important determinants are summarized as follows

3.1 Perceived ease of use: - refers to the degree to which a person that using a particular system would be free from effort (Davis 1986).

3.2 Perceived usefulness: - refers to the degree to which an organization that using a particular system would enhance or improve its job performance. According to Masrom and Hussein (2008), the adoption of whether to use an information system for a particular individual is very much dependent on the perceived usefulness and perceived ease of use of the information system. Figure 2.2 shows the links between all the factors found in TAM

Figure 2.2 Technology Acceptance Model (TAM)



Source: Davis (1986)

TAM was developed to explain and predict particular IT usages. However, this particular Model has been using by many researchers in studying adoption and diffusion of various IT technologies. For this study researcher uses two basic factors of TAM, i.e., perceived ease of use and Perceived usefulness to analyze the perception of users on the adoption of E-banking system in Ethiopia. The frameworks discussed above have their own advantage and disadvantages based on the nature of the study.

4. Technology-organization-Environment Framework (TOE):

Tornatzky and Fleischer; (1990) it is designed for studying the likelihood of adoption success of technology innovations proposed TOE framework. This framework is a comprehensive and well-received framework in the context of innovation adoption by organizations and has been used in many studies (Salwani& Ellis 2009; Chang 2007, Zhu & Kraemer 2006). According to Tornatzky and Fleischer (1990), technology adoption within an organization is influenced by factors pertaining to the technological context, the organizational context, and the external environment. Based on this, the researcher adopts the TOE framework to summarize possible key factors affecting E-banking adoption as shown in Figure 2.3. The technological factor refers to adopter's perception of E-banking attributes. Typical characteristics of technology considered in technology adoption studies are based on the assumption of Roger's diffusion of innovation (Rogers 2003), Which include relative advantages (perceived benefits), and relative disadvantages (perceived risks). While, the organizational factor refers to the organizations characteristics that influence its ability to adopt and use of E-banking system. The environmental factor refers to the external environment in which an organization operates and its condition for supporting the development of E-banking services. For each context, various factors have been identified from the literature but only those that are considered relevant for E-banking adoption are included in the framework. Details of factors considered in this study are discussed below.

Technological Factors

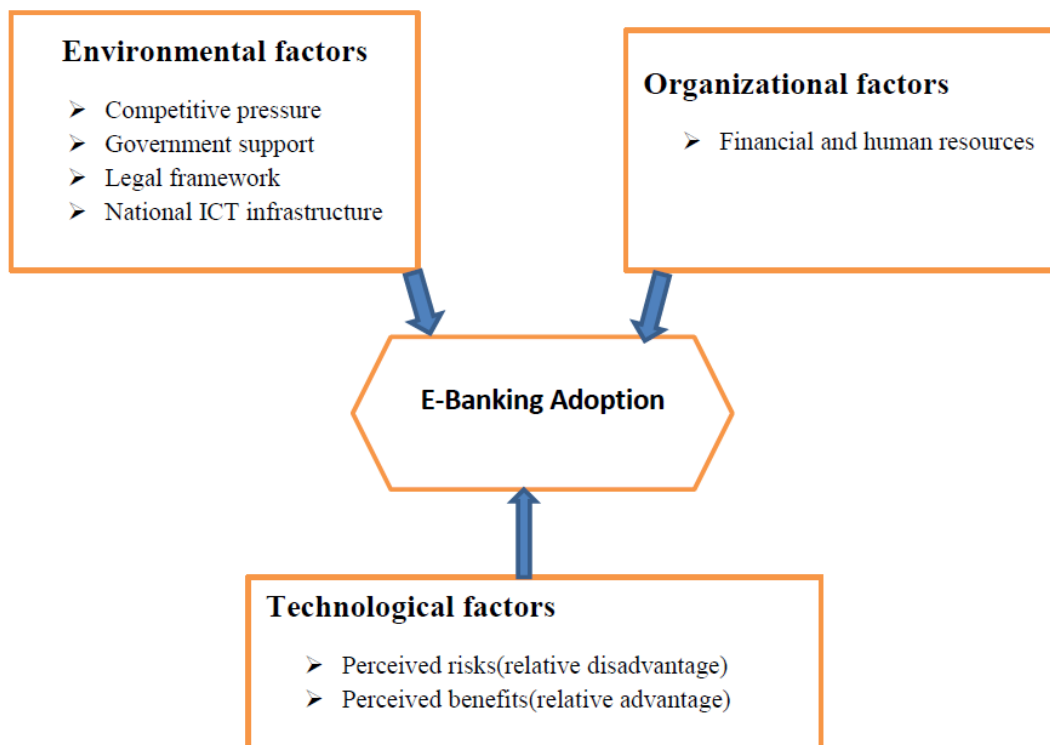
It appears that there is a lack of consensus on what factors belong to this context. For example, one study (Salwani 2009) includes technology competence covering existing technology infrastructure and skills to utilize the technology in this context, while other

studies (Ellis 2009 & Chang 2007) consider some relevant characteristics of technology. To avoid overlapping between technology and organizational contexts, researcher chooses two basic factors related to technology competence, which have relevant to the organizational factors, i.e. perceived benefits and perceived risks are considered in this study from the technological factors.

A. Perceived benefits: - Perceived benefits of E-banking cover both direct and indirect benefits for the banking industry as well as for the consumers. Direct benefits include the savings on operational cost, improved organizational functionality, productivity gain, improved efficiency and increased profitability. Indirect benefits include the opportunity

On the other hand, intangible benefits such as improved customers satisfaction through improved services, improved banking experience and fulfillment of their changing needs and lifestyle (Lu2005; Kuan &Chau 2001 & Iacovou 1995)

Figure 2.3 List of Technology-Organization-Environment frameworks (TOE)



Source: Tornatzky and Fleischer (1990)

B. Perceived risks: - One of the important risks faced by banking institutions in offering E-banking services is the customers resistance to use the services which significantly hinder the growth of E-banking (Zhao 2008 & Laforet 2005). Issues related to security have always been a concern when dealing with technologies related to online transactions such as E-banking (Chang 2007 & Rogers 2003). Therefore, the perception of the risks regarding E banking is expected to influence its adoption and further growth.

Organizational Factors

Organizations are different in their preference to adopt technological innovation (Iacovou 1995 & Grover 1993) influenced by a number of factors, like firm size, top management support and financial and human resources. In the framework for this study, researcher uses one basic organizational factor as discussed below.

Financial and human resources: - Financial resources are an important factor in facilitating innovation adoption for any organization and they are often correlated with the firm size (Kuan 2001 & Iacovou 1995). Therefore, it is expected that the availability of financial resources within the adopting firms is important for E-banking adoption. These resources enable banking institutions to obtain human related resource including the required skills and expertise to develop and support provision of E-banking services.

Environmental factors

Researcher identified factors related to the environmental context that play a crucial role in technology adoption and some factors in this category are arguably more influential than others, especially when countries under study have an authoritative government leadership.

The Four factors relevant for E-banking adoptions included in this study are-

Legal Frameworks: - The existence and maturity of E-commerce legal frameworks within a country influence the diffusion of online transactions including E banking as demonstrated in various studies (Tan & Wu 2002; Martinson & Trappey 2001).

The National ICT infrastructure: - National ICT infrastructure is a major factor that supports the adoption of E-banking as the case for other E-commerce initiatives.

Without an adequate development level and quality of a nations ICT infrastructure, E-banking adoption and use cannot do well (Efendioghu 2004 & Scupola 2003).

Competitive pressure: - Competitive pressure can strongly influence any bank to develop and adopt E-banking initiatives and it may affect the banks perception towards E-banking system. As implied in previous studies (Quaddus & Hofmeyer 2007; Gibbs, Kraemer & Dedrick 2003).

Government Support: - Government can either directly or indirectly affect the adoption of E-banking in terms of creating a favorable environment and impetus for banking institutions and their customers so that the services can be diffused with the community (Kuan 2001 & Iacovou 1995).

In this study use, TAM and TOE acceptance model were used to have a more precise forecast on the benefits and challenges of adopting E-banking system in Ethiopian banking i

E -banking includes the systems that enable bank customers to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet. Customer's access E-banking services using an intelligent electronic device, such as a Personal Computer (PC), Personal Digital Assistant (PDA), Automated Teller Machine (ATM), telephone (Ibrahim 2006).

2.7 Types of E-banking

There are many electronic banking delivery channels to provide banking service to customers. Among them ATM, POS, Mobile banking and internet banking, Tele banking, debit card and SWIFT are the most widely used and discussed below.

2.7.1 ATM

ATM (Automatic Teller Machine) is a device, which offers a range of services to users that are authorized by using a PIN-code. From a cash ATM, user is able to make payments, withdraw money or view account information (Myllynen, 2009). ATM is an electronic machine in a public place, connected to a data system and related equipment and activated by a bank customer to obtain banking services without going in to the

banking hall. It allows customers to access banking services such as withdrawals, transfers, inquiries about account balances, requests for cheque books, account statements, direct deposits, foreign currency exchange etc. (Fenuga, 2010). Using an ATM requires an ATM card and a pass code, often referred to as a PIN (Personal Identification Number).

Automated teller machines have reduced costs per transactions to almost one-fourth as compared to the branches. ATMs support a variety of transactions such as cash withdrawal, cash deposits, chequer deposits, placement of service requests, including the request for a chequebook. New technology has facilitated the installation of in-wall ATMs, which are weatherproof, can be established in shopping malls or busy commercial localities, and have further reduced the transactions and operations costs for banks (Sambamurthy and Ashvin, 2010).

An automated teller machine or automatic teller machine (ATM), also known as an automated banking machine (ABM) is a computerized telecommunications device that provides the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank teller. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip, which contains a unique card number and some security information (Humphrey, 2004).

2.7.2 Point of Sale Machines

Point of Sale (POS) also sometimes referred to as Point of Purchase (POP) checkout is the location where a transaction occurs. A "checkout" refers to a POS terminal or more generally to the hardware and software used for checkouts, the equivalent of an electronic cash register. 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). A POS terminal manages the selling process by a sales person accessible interface. The same system allows the creation and printing of the receipt (Shittu, 2010). A POS uses a debit card to activate an Electronic Fund Transfer Process (Chorafas, 1988). Point-of-Sale Transfer Terminals allow consumers to pay for retail purchase with a check card, a new name for debit card.

This card looks like a credit card but with a significant difference, the money for the purchase is transferred immediately from your account to the store's account. Increased banking productivity results from the use of EFT and POS to service customers shopping payment requirements instead of clerical duties in handling cheques and cash withdrawals for shopping. Furthermore, the system continues after banking hours, hence continual productivity for the bank even after banking hours.

Now, POS devices have been linked to financial institution computers, allowing retail customers to receive approval for check cashing and electronically initiate transfers from their accounts to the retailer's, the latter being POS full funds transfer. In some installations, customers can make deposits to their accounts. POS devices accept either a plastic credit card or a plastic debit card, depending on whether the customer wants to delay payment by charging the purchase or wants the purchase deducted directly from his/her account. As electronic POS systems proliferate, their use will probably replace many of the paper transactions accomplished through cash payments, check, and credit transactions (Deiterich, 2014)

2.7.3 Mobile Banking

Mobile banking (also known as M-banking or SMS banking) is a term used for performing balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device such as a mobile phone or Personal Digital Assistant (PDA). 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 earliest mobile banking services were offered over SMS, a service known as SMS banking. 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). Mobile banking is used in many parts of the world with little or no infrastructure, especially remote and rural areas. This aspect of mobile commerce is also popular in countries where banks can only be found in big cities, and customers have to travel several miles to the nearest bank. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information (Tiwari & Buse, 2007).

2.7.4 Internet Banking

Internet banking is conducted by completing bank transactions by directly accessing the bank through the internet. Nowadays, internet-banking customers can access many different services online, which make physical banks open even after office hours. Internet banking allows customers of a financial institution to conduct financial transactions on a secure website operated by the institution. Internet banking can be conducted either by accessing the internet with a computer or by using a phone that has internet features (Alabar & Timothy, 2012).

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. Some examples

Of wholesale products and services, include Cash management, wire transfer, automated clearinghouse transactions, Bill presentment and payment.

2.7.5 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).

2.7.6 Debit Cards

A debit card (also known as a bankcard or cheque card) is a plastic card that provides an alternative payment method to cash when making purchases. Functionally, it can be called an electronic cheque, as the funds are withdrawn either directly from the bank account or from the remaining balance on the card. In some cases, the cards are designed exclusively for use on the internet, and so there is no physical card (Mavri & Ioannou, 2006). In many countries the use of debit cards has become so widespread that their volume of use has overtaken or entirely replaced the cheque and, in some instances, cash transactions. Like credit cards, debit cards are used widely for telephone and Internet purchases and, unlike credit cards, the funds are transferred immediately from the bearer's bank account instead of having the bearer pay back the money at later date.

Debit cards may also allow for instant withdrawal of cash, acting as the ATM card for withdrawing cash and as a check guarantee card.

2.7.7 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 etc... (Mohammed shamsuddoha, 2008)

2.8 Responsibilities of Ethio Switch Share Company in the Development of E-Banking in Ethiopia

2.8.1 Ethio Switch Share Company

ET Switch S.C., the industry-owned company behind the project, was created with the sole purpose of bank-to-bank integration and the aim is to globalize the payment system. Eth-Switch was established in 2011 by 16 banks with 80.5 million Br following the recommendation by National Bank of Ethiopia, on June 2009, it is the industry's answer to these challenges. The technology, which is expected to be connected to the National Payment System (NPS), operates under National Bank of Ethiopia (NBE). It will enable clearing of cheques and using the ATM of any bank and use POS.

Currently owned by 18 banks, with the central bank also a shareholder, and recently join banks are Enat bank, Addis International Bank and Debub Global Bank. It is entrusted to administer the national switch system. It hired a Dutch-based IT vendor, BPC Banking Technologies BV, which was one of two companies short-listed after submitting proposals worth over 10 million dollars - a far cry from the resources the company had budgeted. The model employed operates at a much smaller size, but is scalable whenever the industry's requirements increase, according to this person. Nevertheless, those involved claim its current size lets it easily handle all the transactions that currently take place, and then some.

Yet, ET Switch has not officially launched the program, though it is an achievement that is a huge milestone, industry actors opined. The complexity of system integration and fear of instability of the system seem to be the reasons behind the quiet operation.

The solution, or Switch, is a conglomeration of many elements. It comprises the country's network, the network and database of each member bank, and even individual ATMs. The malfunction of any of those parts could result in a malfunction of part or all of the system.

The successful implementation of the system could have a negative effect on other businesses that have sprung up following the machines. In addition to bank branches, ATMs are placed in storefronts, in public buildings and hotel lobbies. As more and more

banks started to utilize the system, buildings in key locations took notice of both demand and supply. They started to prepare convenient places in which place ATM machines. Not only do their occupants benefit from the foot traffic generated, but they also make the banks pay rent.

The much-anticipated Eth-Switch, which is expected to centralize all banks' online real-time and electronic (CORE) banking solutions, is to commence its pilot project on May 28, 2015.

The project will have two phases: the first phase is the one that will be launched as a pilot project, which is mainly bringing inter-operability, and second phase will focus on introducing and expanding services, added Bizunhe. It is expected to introduce more than 40 services.

The first phase will mostly focus on launching basic services that will facilitate inter-operability among banks, eight services including automated teller machines (ATM) and Points of Sales (POS). These include cash withdrawal and balance check, which could be done on ATM, as well as purchasing, reversing and refunding services, enabled through POS.

While on the second phase, different kinds of money transfer services will be integrated, such as mobile and internet banking system.

As of now, Moti has supplied 650 ATMs for the Commercial Bank of Ethiopia (CBE), 70 for Wegagen Bank, 70 for Dashen Bank, 59 for Zemen Bank, 10 for Abay International Bank (AIB) and 4 for Berhan International Bank S.C. It also recently supplied 25 ATMs to the Corporative Bank of Oromia (CBO) and 50 ATM to Nib international Bank (NIB).

The belated national e-payment switch, Ethio-Pay, serving the integration of Automated Teller Machines (ATMs) and Point of Sale (POS) machines, celebrated its official launch on May 12, 2016.

Delayed procurement and delivery of necessary hardware and banks' lack of readiness to commit were among causes of the late inauguration, Daryl Berg, managing director of BPC Banking Technologies in Africa, Eth-switch's software vendor, stated. (Solian Alemayehu, ET Switch S.C., Addis FORTUNE, Thursday, July 28, 2016)

The charge for the service costs the customer 50 cents for each 100 Br withdrawn. As people have finally started to use the system, banks and Eth-Switch had equally split the 22,500 Br in service charges collected from users since the „soft launch“ on April 20. The fees for using ATMs owned by banks other than the one that issued the card, are incurred by the customer only. All member banks audit their transaction on a daily basis.

According to Bizuneh Bekele (CEO of Ethio-Switch S.C) Ethio switch have own their regulation to solve possible audit dispute between banks. It also has a system to prove the audit's accuracy.

The National Bank of Ethiopia (NBE) launched the Ethiopian automated transfer system (EATS) in May 2011, to implement this system. Within EATS, there is the Real Time Gross Settlement (RTGS), for low volume high value transactions, and the Automated Clearing House (ACH), for high volume low value transactions. The National Switch is the third part of this strategy, after RTGS and ACH Byer (2001).

2.9 Challenges of Adopting E-banking

There are many reasons which obstacles the popularity of E-banking services in spite of the fact that bankers and customers can get benefit from electronics banking. An extended study conducted by Daft (1982) revealed that the introduction of E-banking may be good idea but on the part of customers, they are keener to risk associated with the particular type of innovation. Daft identified what he described Strategic Risk by inference a financial institution's board and management should understand the risks associated with E-banking services and evaluate the resulting risk management costs against the potential return on investment prior to offering E-banking services.

According to Pikkarainen (2004), the reasons behind banks are not using the online banking services are as follows:

1. The internet connection is very important prerequisite for customers to use online banking services.
2. Before using these online banking services the new users need to learn how to use these internet services.

3. Some non-user's complaint that the face-to-face banking situation is quite different from doing banking online so there are no social dimensions while doing online banking (Mattila 2003).

4 The security issue hinders some customers to use the online banking services. Mattila (2003) noted that perceived difficulty in using computers combined with the lack of personal service in electronic banking were the main barriers while Sathye (1999) identified the security concerns and lack of awareness about Internet Banking as the main obstacles to non-adoption. He pointed that young, educated and wealthy groups of customers were the most relevant customer segments for the rapid development of Internet banking market.

2.9.1 Challenges of Adopting E-banking in Ethiopia

According to Gardachew (2010), Ethiopian banking industry faces numerous challenges to adopt E-banking system and grab the opportunities presented by ICT applications in general.

Major Challenges for E-banking applications are:

- **Low level of internet penetration and poorly developed telecommunication infrastructure:** Lack of infrastructure for telecommunications, Internet and online payments impede smooth development and improvements in e-commerce in Ethiopia. Most rural areas of the country, where the majority of small and medium businesses are concentrated, have no Internet facilities and thus are unable to engage in e-commerce activities.
- **Lack of suitable legal and regulatory framework for e-commerce and e-payment:**-Ethiopian current laws do not accommodate electronic contracts and signatures. Ethiopia has not yet enacted legislation that deals with e-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies.

- **Inadequate banking system.**
- **Political instabilities in neighboring countries:** Political and economic instabilities like Somalia, Southern Sudan, and Eritrea are threatening traits that do not provide a very conducive environment for e banking in Ethiopia. Political instabilities inevitably disturb smooth operations of business and free flow of goods and services.
- **High rates of illiteracy:** - Low literacy rate is a serious impediment for the adoption of E-Banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-Banking, they should not only know how to read and write but also possess basic ICT literacy.
- **High cost of Internet:** - The cost of Internet access relative to per capita income is a critical factor. Compared to the developed countries, there are higher costs of entry into the e-commerce market in Ethiopia. These include high start-up investment costs, high costs of computers and telecommunication and licensing requirements.
- **Absence of financial institutions networks that links different banks (Banks are not yet automated):-** Most of the banking-transactions currently taking place use credit and debit cards supplied by Visa and MasterCard. For conducting e banking, the use of credit or debit cards is mandatory thus requiring the need for specialized systems, which are not currently available.
- **Frequent power interruption:** - Lack of reliable power supply is a key challenge for smoothly running E- banking in Ethiopia

2.10 Benefits of Adopting E–banking

Electronic banking systems provided easy access to banking services. The interaction between user and bank has been substantially improved by deploying ATMs, Internet banking, and more recently, mobile banking (Claessens2002). According to Giglio (2002) and Robinson (2000) in delivering banking, products the cheapest way can be done only through the Online Banking. According to Karjaluoto (2002) with the help of online banking services, the branch networks of banks have reduced and also the staff for

working in banks and customers are satisfied to use the online banking services as it will save a lot of time and effort to go to branch of bank and perform these transactions. Therefore, the main reason behind accepting the E-banking system is that the service is the time and cost saving and freedom from the place (Polatoglu and Ekin 2001). Electronic banking (E-banking) reduces the transaction costs of banking for both Small and Medium Enterprises (SMEs) and banks. SMEs need not visit banks for banking transactions, providing round the clock services (Cheng, 2006). Customers prefers E banking for conveniences, speed, round the clock services and access to the account from any parts of the world (Cheng, 2006). E banking offers benefits to banks as well. Banks can benefit from lower transaction costs as E-banking requires less paper work, less staffs and physical branches (Cheng, 2006). E banking leads to higher level of customers' satisfaction and retention (Poatoglu & Ekin, 2001).

E banking reduces loan-processing time as borrower's loan application can be viewed by loan processing and loan approval authority simultaneously (Smith & Rupp, 2003). The benefits of E-banking identified from the current literature are classified in two main categories - tangible and intangible.

Tangible benefits

- ❖ Increase automation process
- ❖ Transformation of traditional market chain
- ❖ Retained and expand customer base
- ❖ Reduced operational costs
- ❖ Acquisition of each market
- ❖ Increase business efficiency

Intangible benefit

- ❖ Enhance wellbeing and education of customers
- ❖ Competitive advantage
- ❖ Convenient banking

From the Banks Point of View

Attracting High Value Customers: - E-Banking often attracts high profit customers with higher than average income and education levels, 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).

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 (Shah & Clarke 1997).

Increased Revenues: Increased revenues because of offering e-channels are often reported, because of possible increases in the number of customers, retention of existing customers, and cross-selling opportunities. 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. 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 startup and maintenance costs. E-channels, such as the Internet, have made this unnecessary in many circumstances.

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.

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.

Benefits from the Customers' Point of View

Customers can enjoy a variety of services, especially services that are not provided by traditional bank branches (Pham 2010). E banking can bring about convenience and accessibility, which will have positive effects on customer satisfaction and loyalty (Pham 2010). In addition, customers can enjoy more benefits at lower cost levels by utilizing E-banking (Mols 1998). It is contended by Turban (2008), that E-banking is really beneficial to customers in terms of cost savings, no limit on time and space, quick response to customer complaints, and better services or products.

The main advantages of e banking for corporate customers as per (BankAway! 2001; Gurău, 2002) are as follows:

- ❖ Reduced costs in accessing and using the banking services.
- ❖ Increased comfort and timesaving transactions can be made 24 hours a day, without requiring the physical interaction with the bank.
- ❖ Quick and continuous access to information: Corporations will have easier access to information as, they can check on multiple accounts at the click of a button.
- ❖ Better cash management: E-banking facilities speed up cash cycle and increases efficiency of business processes as large variety of cash management instruments is available on internet sites. For example, it is possible to manage company's short-term cash via internet banks (investments in over-night, short- and long term deposits, in commercial papers, in bonds and equities, in money market funds).
- ❖ Transaction can be made even after banking hour without the physical interaction of the bank 24 hours a day. This increase the productivity of both the bank and the company.

Quick and continuous access of information and corporation will have easier access to information as, check multiple accounts at the click of a button, better cash management (Bank Away! 2001; Guru, 2002).

The main benefits from e banking for private customers are as per Bank Away (2001) are as follows. Private customers seek slightly different kind of benefits from e banking. In the study on online banking drivers Aladwani (2001) has found, that providing faster, easier and more reliable services to customers were amongst the top drivers of e-banking development.

- ❖ **Reduced costs:** This is in terms of the cost of availing and using the various banking products and services.
- ❖ **Convenience:** All the banking transactions can be performed from the comfort of the home or office or from the place a customer wants to.
- ❖ **Speed:** The response of the medium is very fast; therefore customers can actually wait until the last minute before concluding a fund transfer.

Benefits of E-Banking for the general economy

The impact of electronic banking on the entire economy growth has been studied in several research projects. As an example (Pohjola, 2002) shows that the contribution of the use of information communication technology to growth of output in the Finnish market sector has increased from 0.3 percent in early 1990's to 0.7 percent in late 1990's. Similarly, research conducted in Estonia (Arm and Vensel, 2001), bank customers use bank office on average 1.235 times per month, and wait in queue in bank office on average for 0.134 hours. Simple calculation shows that making payments using E banking facilities rather than in the banks office create overall economy savings in the amount of 0.93% of GDP (average distance to nearest bank office is 4.14 km (Arma and Vensel, 2001), which takes approximately 0.21 hours.

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2.11 Empirical Studies Related with E-banking Challenges and Prospects

Different researchers conducted some related studies in different parts of the world. The following section will be discussed about different research.

Jen and Michael (2006) indicate that E-banking has created unprecedented opportunities for banks and businesses globally, in the ways they organize financial product development, delivery, and marketing via the Internet. While it offers new opportunities

to banks, it also poses many challenges such as the innovation of IT applications, the blurring of market boundaries, the breaching of industrial barriers, the entrance of new competitors, and the emergence of new business models (Liao and Cheung 2003).

The other descriptive case study analysis conducted by Khalfan (2006) on, factors influencing the adoption of internet banking in Oman, aimed to identify the main potential factors or impediments that are currently inhibiting the incorporation or adoption of E-commerce applications in the Omani Banking sector. Data, used in their study were collected using semi structured interviews and survey questionnaire as well as reviewing some bank documents. The results of their study provide a Pragmatic picture about the adoption of E-Commerce applications in the core financial sector domain of Oman. One of the main findings is that security and data confidentiality issues have been a major barrier. The banking sector was reluctant to use E-commerce applications as they felt that transactions conducted electronically were open to hackers and viruses, which are beyond their control. Lack of top management support is the other inhibiting factor in the adoption of electronic commerce applications as per their finding.

Similarly the study of Ghazi and Khalid (2012), found that, the most important barriers for E-business growth are technological issues, such as, security risk, quality of internet and cost of implementation to be the most prominent.

On the other hand the study conducted by Daghfous and Toufaily (2007) on the success and critical factors in adoption of E-banking by Lebanese banks. The research was conducted on the factors that can lead to success the adoption of E-banking and the other factors that can constitute as barrier to its adoption, it focus on the organizational, structural and strategic factors which can accelerate or, on the contrary, slow the adoption of this electronic mode of distribution and communication by the banks, through analyzing the case of the Lebanese market. In order to test the validity of the theoretical framework, structured survey was used, interview questionnaire that was given to E-banking managers or to information technology managers of all the banks on the official list of institutions operating on the Lebanese market, with a total of 57 banks, 31 of them operate internationally and 26 are strictly local where use to gather data. The results of their study shows that the organizational variables (bank size, functional divisions,

technical staff, technical infrastructure, perceived risks, decision makers, international experience and mastery of innovation) are variables which exert significant impact on the adoption of E-banking, among the structural characteristics, the result revealed that internal technological environment of the bank is a very important factor in determining the adoption of E-banking, also the result shows that banks which are developing in the international scale are more likely to adopt E-banking innovations. Finally the result of the study indicated that extent of penetration of E-banking in the growth phase of an emerging market has an important correlation with the improvement of commercial performance.

The study of Shah (2005) on critical success factors (CSF) in E-Banking conducted in United Kingdom, aims to determine the critical issues related to financial sector organizations when they establish businesses online. The survey method was used by researchers, which target the financial sector in the UK. The study indicates that Understanding the CSFs in E-banking is important for senior management of banking related organizations, because it would potentially help them improve their strategic planning process. The analysis of the study indicates two major types of statistical analyses were conducted, descriptive statistical analyses and factor analysis. In descriptive analyses, the factors (or variables) were ranked in order of their mean score, the

Highest score being the most important and so on. The top six factors in order of importance were user-friendly website, systems security, and support from top management, fast responsive customer service, promotion of electronic commerce within organization, and all time availability of services and rapid delivery of services.

Factor analysis, which was done to group together, related variables to uncover factors (in terms of factor analyses), found the following factors to be critical for the success in E-banking. Issues related to organizational flexibility and speed of services delivery were found to be at the top of the importance list. Issues related to organizational flexibility and speed of services delivery were found to be at the top of the importance list. Business processes, systems integration, and enhanced customer services were next in the list of importance.

Polatoglu & Ekin (2001) conducted a research on an empirical investigation of Turkish consumer acceptance of internet banking and mention reliability as the prime factor in their finding for the adoption of new technological innovations, reliability consists of security and privacy in Internet Banking transactions. They go on to state that risks (security concern) include financial, physical or social risks associated when trying an innovation. They say that security risk is known to be as one of the major barriers in online banking adoption. Zhao (2010) in their study of "adoption of internet banking service in china" says trust in a bank is the fundamental because it deals with customers financial activities. Trust is not only important to reduce risk in Internet Banking in general but also it helps banks to build trust to be more competitive in the industry.

Gerrard (2006) in their study in Singapore identify risk to be an important factor for Internet Banking adoption. All respondents who did not use Internet Banking services had a negative perception of the security in Internet Banking. The respondents perceived that there were many security risks when using the internet. They felt the privacy was a concern, feeling all their financial information could be in jeopardy. Risk was one of the two most frequently mentioned factors in their study; Concern about risk was mentioned by all respondents. An empirical investigation conducted by Sathye (1999) on the adoption of Internet Banking by Australian consumers also identified, security concerns as key factor in internet banking adoption. A report on Internet Banking in Australia finds that, security concerns among banks and customers are keeping both away from Internet Banking" Sathye (1999). According to

Sathye (1999) Security was identified as the biggest obstacle in adoption; it was found that 78 percent of personal and 73 percent of business respondents had security concerns when it comes to the use of Internet Banking. Thus, pointing out that personal users have more security concerns than business users. Sathye (1999) further state that, a survey conducted by Thornton Consulting (1996) in USA concluded that 67 percent of banks in the USA felt that security is a key anxiety in Internet Banking adoption. Banks tend to promote their security features in their services using technical terminology. This makes it difficult for normal customers to comprehend and resulting to a squander in the whole promotion.

Similarly the study of Yang (1997) on the, security of electronic banking was aimed to identify the challenges that threatens electronic banking which are the concerns of security and privacy of information. The study suggests that solutions to the security issues require the use of software-based systems or hardware-based systems or a hybrid of the two. These software-based solutions involve the use of encryption algorithms, private and public keys, and digital signatures to form software packets known as Secure Electronic Transaction used by MasterCard and Pretty Good Privacy. Hardware-based solutions such as the Smartcard and the Magnetic Chip provide better protection for the confidentiality of personal information. Software-based solutions have the advantage over hardware-based solutions in that they are easy to distribute and are generally less expensive. In Laukkanen (2008) research, risk is considered as the most intense barrier and the greatest concern in the adoption of Internet Banking. However, in this study consumers feel human errors by themselves could cause a threat to their financial services. For example, losing their Personal identification number (PIN) codes and it may get it to the wrong hands and result in crime or theft. “A higher determinant of resistance appears to be the risk related to the individual’s perceived ability to use the innovation successfully, i.e. self-efficacy” Laukkanen (2008). Sathye (1999) suggests that banks use positive publicity to its customers to help ease the response from customer on security. One of the major banks in Australia has taken responsibility in undertaking losses for any unauthorized use, with exception of certain circumstances. However, in an empirical investigation in Turkey by Polatoglu & Ekin (2001) states that Internet Banking services introduced by large, well-known and trusted banks, because customer perceived security risk in these banks is assumed to be decreasing significantly. On the other hand the risk factor is a barrier to corporate customers of banks as well. Balachandher (2010) have completed a study on the barriers to internet usage on a corporate customer

Perspective and found that lack of trust on security issue is the main barrier. The study shows that corporate customers only use Internet Banking to a certain extent and feel banks should invest more on security infrastructure and banks should be willing to take full responsibility. These results are similar to the findings of different studies. For example in the study of Booz (1997), security concern was the top ranked factor for users not adopting Internet Banking in Latin America. Ram and Sheth (1989) argue that

consumer resistance to the innovation is caused by functional barriers and psychological barriers. Functional barriers can be divided into three: the usage barrier, the value barrier and the risk barrier, whereas psychological barriers can be divided into tradition barrier and image barrier. According to Ram and Sheth (1989) functional barriers arise when consumers perceive changes would take place when adopting innovation and the psychological barriers are caused by consumer's beliefs.

On the other hand Khanfar (2006) conducted study on the customer satisfaction with internet banking web site in the Arab Bank. The study identified some factors, which can determine customer's satisfaction in the use of internet banking service. Such as; customer supports, security, ease of use, digital products/services, transaction and payment information content, and innovation. Researchers employ a survey questionnaire to gather data on their results showed that there is a narrow-based satisfaction with internet banking in all factors through a multi-regression; the researchers found out that all factors have an impact on the customer satisfaction, and they have found that the relation was positive.

A research conducted by D'Souza (2002) on the comparative performance of public and private sector banks in the decade of the 1990s shows that though the turnover ratio rose in public sector banks (PSBs), the turnover per employee in private and foreign banks doubled relative to the ratio for PSBs. In addition, this is not due to the presence of a large rural and semi-urban concentration of bank branches amongst PSBs but rather due to technological up gradation in the private and foreign banks. Private and foreign banks have changed the structure of their employment towards a higher skilled workforce by increasing the recruitment of officers and reducing clerical and subordinate staff. The combination of higher technology and higher skills have posted a higher turnover for these banks as they have been able to provide better customer support and have managed their assets well.

The study of Aghdassi (2007) on Association between strategic values and E-banking adoption in Iranian banks attempts to understand strategic value of E-banking for Iranian banks and examine the causal effect of perceiving E-banking as a value and its adoption. The researchers propose an E-banking adoption model that is identifying five factors that

have been found to be influential in the perception of strategic value of IT: performance support, operational support, managerial productivity, and strategic decision aids. They also identified eight factors that influence electronic banking adoption: organizational readiness, Infrastructural readiness, external dependency, Intangible pressure, persuasive pressure, perceived ease of use, and perceived usefulness.

Data are collected via a questionnaire-based survey from decision maker unit of Iranian Banks. In order to test the model, a statistical analysis was conducted in two stages. The first step employed factor analysis to measure whether the number of factors and loadings of items involved in the two main constructs (perceived strategic value and adoption) conform to the proposed model, canonical analysis was utilized in the second step in order to explore how the perceptions of strategic value influence the decision to adopt E-commerce. The finding of their study indicated, that in a developing country like Iran and a big industry like banking, although the items of the adoption factors model are applied, the story is a bit different.

In Iran the E-commerce adoption specifically E-banking adoption is in its beginning stages and still there are many gaps. These gaps could be technological, economical, socio-cultural, geopolitical and other gaps. In addition, the result of their study expressed, that bank managers' perception through E-commerce is very positive and effective in their adoption trend. The other study reviewed was the study of Kassim (2005) focused on E-banking service quality: gaps in the Qatari banking industry investigate the discrepancy between customers. The study of Kerem (2003) on the adoption of electronic banking: underlying consumer behavior and critical success factors conducted in Estonia, was intended to study the further understanding of, how consumers perceive electronic banking in the heyday of interactive channels in Estonia, as Estonia is internationally renowned for being a pioneer in the acceptance of new technologies. A series of an in depth interviews was conducted with leading industry experts in Estonia. The selection criterion for the respondent was mainly their involvement with the development of Internet banking systems from the early days of its emergence. The survey conducted for this research addressed six different issues influencing the adoption of Internet banking (Better prices, Recommendations, Better service, Marketing efforts, Better access and higher privacy).

The most important factors in starting to use Internet banking are first better access to the services (convenience), better prices and higher privacy. Better service (i.e. preferring self-service to office service) was also of above the average importance. Two factors that the respondents did not consider relevant to their adoption decision were banks' marketing activities and personal recommendations from friends and colleagues. Also the survey conducted six main obstacles (computers are difficult, no access to internet, internet banking is expensive, low security, have had no chance to try and I prefer personal contact) in adopting Internet banking (results of a preliminary study, 100 respondents), the most important factors discouraging the use of Internet banking are lack of Internet access and not having a chance to try out Internet banking in a safe environment. Finally the research indicates that banking activities alone may not be sufficient in achieving growth if general infrastructure, economic environment and government initiatives are not supportive.

The research conducted on identifying the attitudinal, social and perceived behavioral control factors that might influence the adoption of Internet banking by Hoppe et al., (2001) were based on theory of planned behavior (TPB) and the diffusion of innovations theory (DIT) developed by a previous research in Singapore. The aim of the study was to collect South African data in order to test out the hypotheses regarding the factors, which affect adoption of Internet banking and compare these results with those collected in other countries. Online questionnaire was used to collect empirical data and the results of the study shows that intention to adopt Internet banking can be predicted by attitudinal factors, perceived behavioral control factors to a lesser degree, and not by subjective norms. All attitudinal factors except banking needs are found to be significant, with complexity and risk showing a negative relationship.

Unlike developed countries, there are limited numbers of studies conducted in Ethiopia on the adoption of technological innovation. Specifically, Gardachew (2010) conducted research on the opportunities and challenges of E-banking in Ethiopia. The aim of his study was focused on analyzing the status of electronic banking in Ethiopia and investigates the main challenges and opportunities of implementing E-banking system. The author conducted a survey on the existing operating style of banks and identifies some challenges of using E-banking system, such as, lack

of suitable legal and regulatory frame works for E-commerce and E-payments, political instability in neighboring countries, high rates of illiteracy and absence of financial networks that links different banks. According to Gardachew (2010), Opportunities offered by ICT through e-learning programs and Commitment of the governments on development of ICT infrastructures is considered as drivers of using E-commerce and E-payment systems.

Wondwossen and Tsegai (2005) also studied on the challenges and opportunities of E-payments in Ethiopia; their objective was studying of E-payment practices in developing countries, Africa and Ethiopia. The authors employs interview and on site observation to investigate challenges to E-payment in Ethiopia and found that, the main obstacles to the development of E-payments are, lack of customers trust in the initiatives, Unavailability of payment laws and regulations particularly for E-payment, Lack of skilled manpower and Frequent power disruption. According to Wondwossen and Tsegai (2005), an adequate legal structure and security framework could foster the use of E-payments, which is contradicting with the finding of the previous study.

Ayana (2012) conducted research to identify factors that affect adoption of E-banking in Ethiopian banking industry. the Author conducted a Survey, interviews and document analysis in order to identify factors that affect adoption of E-Banking and found that, security risk, lack of trust, lack of legal and regulatory frame work, Lack of ICT infrastructure and absence of competition between local and foreign banks as major barrier that face Ethiopian Banking industry in adoption of E-Banking and suggest that Establishing a clear set of legal framework on the use of technology in banking industry, supporting banking industry by investing on ICT infrastructure and banks needs to be focused on technological innovation competition rather than traditional bases of retail bank competition as a series of measures which could be taken by the banking industry and by government to address various challenge.

Mohammed Arif Shaikh (2014) studied about the Ethiopian banker's perception of electronic banking in Ethiopia. He was trying to attempts cover the overall service provides for customers from customers and banks. In addition, addresses the following

objectives: two find the benefits that bankers expect their customers to receive when they use electronic banking. To examine banker's perceptions of the risk associated to electronic banking. To review the existing literature and provide insights for researchers and bankers interested in provided electronic distribution channels.

In general, Review of Empirical studies shows that understanding the critical success factors (CSFs) in E-banking is important for banking industries because it would potentially help them improve their strategic planning process. The main obstacles and barriers that oppose E-banking adoption are the concerns of security, privacy of information and technology investment cost. Also the literature review indicates that according to the customers there are different factors that influencing the adoption of E-banking such as, perceived advantages and other factors related to the services itself & how to be accepted and used by the customers, which differ from country to country, reflecting the economic and technological development in each country. In this study researcher has identified the main barriers and drivers of adopting E-banking in Ethiopian banking industries by using survey and interview conducted with managers of the selected banks.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Description of the Study Area

The study was conducted in Addis Ababa; Addis Ababa is the capital city of Ethiopia and the diplomatic capital of Africa with a population of above 3.5 million (CSA, 2014). It is the seat of the national government, a home of African Union and other giant international and regional headquarter, and government open for different meeting and panel in the city. It is situated at 2,380 meters above sea level on a well-watered plateau.

It was chosen as a study area because, the head office of each bank that represents the whole branch in the country. The national bank of the country are found there and in addition, high number of employees and customers who have better understanding about e- banking as compared to other locations in the country are found in Addis Ababa.

3.2 Research Design

There are three types of academic researches depending on the problem area and the nature of the phenomenon that it studies. The purpose of the research can be Exploratory, which deals with unknown problem, Descriptive in which there is an awareness of the problem, and Explanatory, where the problem is clearly defined (Ahmed 2011).

The researcher used descriptive research design to explain the assessment on challenge and prospect of adoption of electronics banking that used in the study. In order to get understandable picture of benefits and challenges of electronics banking. According to Sekaren (2003) a descriptive study is undertaken in order to certain and be able to describe the characteristics of the variables of interest in a situation.

On the other hand this research were focused on describing the current situation of the problem and answer the research questions which are in the form of what, and to highlight the most important factors that can negatively or positively affect the adoption of E-banking in Ethiopian financial industry. Therefore, Descriptive research is being used in to fulfill this approach.

3.3 Research Approach

Research approach is selected by researcher based on the research purpose, the nature of the research, the problem area, and research questions (Alhamdani 2006). According to (Creswell 2003) there are three basic types of research approaches, quantitative, qualitative, and mixed approach. They have their own advantage used for conducting research.

In this study, Concurrent procedure is used quantitative and qualitative data to provide a comprehensive analysis of the research problem. Moreover, researcher has collected both forms of data at the same time during the study and integrates the information in the interpretation of the overall results (Creswell 2003).

3.4 Source of Data

In this research preparation all necessary data that associate with the study was collected by using both primary and secondary source of data. Researcher was uses primary and secondary source of data collected from the head office of selected banks are source of data for this study. Primary data are originated by the researcher for the purpose of the study at hand and they are original to the problem and have direct physical contact with the issue to be studied and provides first-hand information the basic advantage of using primary data in the researcher is that there were possibility of acquiring current and updated information for the study.

Data from the annual report of the banks and other publication likes journal, papers, newspaper, magazine articles and paper conducted previously used as secondary source of data. Researcher used different articles and paper. Additional data were obtained by examining various documents, including, banks annual reports, local and international newspaper related with issues of E-banking system, Research reports, books and journal articles.

3.5 Data Collection Methods

The primary data are collected from employees through questionnaire and Electronics banking manager of selected banks through interview. The questionnaires were structured in close-ended type and responses to the questions was measured on a five Likert rating

scale where: Strongly Agree (SA) = 5, Agree (A) = 4, Neutral (N) =3, Disagree (D) = 2, and Strongly Disagree (SD) =1. The questionnaires were distributed physically in person to the survey participants and follow-up call was made to provide feedback, clarification and remainder. The secondary data was collected from published and unpublished monthly and annual reports of National Bank of Ethiopia and other selected banks. Questionnaire and interview was used together the data from employees and manager. Questionnaire is a device consisting of series of questions dealing with someone psychological, social, educational etc. topics sent to an individual, with the objectives of obtaining data with regard to some problem under investigation. Interview is a process of communication or interaction in which the subject or interviewee gives the needed information verbally in face-to-face situation. (Koul, 1996).

3.6 Definition of Target Population

The total number of Commercial banks that had been operating in the year 2017 is 16 private banks and one state-owned banks that are registered under National Bank of Ethiopia (NBE). The target population of this study was five selected private banks and one public owned bank.

Based on the preliminary investigation there are 150 E-banking professional staffs in the six banks and The E- Banking professional staffs are those IT professionals that are working on internet banking, mobile banking, ATM and POS. Those targeted respondents were IT staffs with respective banks, because they have deemed knowledge about E-banking system and could provide important perspectives on its service of electronic banking product

Table 3.1 E-banking professional staffs in each bank

NO	Name of the Bank	No. of E-Banking Staffs
1	Commercial Bank of Ethiopia	55
2	Dashen Bank	20
3	Awash International Bank	23
4	Bank of Abyssinia	22
5	Zemen Bank	20
6	United Bank S.C.	10
TOTAL		150

Source interview of each bank IT manager.

3.7 Sampling Design

Sampling is the process of choosing, from a much large population, a group about which wish to make generalized statements so that the selected part represent the total group (Leedy, 1989).

In the study used purposive sampling method. The appropriateness of any sample design feature can be evaluated only in the context of the overall study objectives. The study was used purposive sampling method to draw the sample from the population. Commercial banks have been operated and the additional banks, which make an initial public offering to begin their operation, were taken as population, and purposely draw a sample from the total to get rich evidence. Because of time and budget constraint the sample was restrict purposely to select six banks head office and their branches functional in Addis Ababa. These banks are commercial| bank of Ethiopia, Dashen Bank, Zemen Bank, Awash International Bank, United bank and Abyssinia Bank. The procedure used for drawing the sample from the population is based on their familiarity with technological innovation, which means banks that are implemented at least one of e-banking product. The number

of bank branches was purposely selected according to the number of customers used e-banking products and service provision effectively in the branch.

For selection of respondents the researcher used census sampling method because of targeted population of the study few in number also researcher preferred census sampling to avoid non-representativeness.

3.8 Data Analysis

After data have been collected from representative sample of population, the next step is to analyze them to test the research questions. A descriptive analysis is used to present and interpret the data collected on various variables assessment on the challenge and prospects of adoption of electronics banking. The researcher was analyzed the data collected through survey to statistical population concerning the factor adoption of e-banking system. The data collect via questionnaire was analyzed with descriptive statistics using Statistical package for social science (SPSS). SPSS is a computer program used for statistical analysis. SPSS has many features and properties, which can provide appropriate results, these results, lead to achieve research purposes. SPSS can provide several statistics for each element in the research questionnaire (DeCoster 2004). Descriptive measures of each questions response and an interview conducted with E-banking managers of selected banks results are presented in the following sections.

3.9 Ethical Considerations

Ethical clearance was primarily obtained from University and then permission from each target organization of their head office Human resource. Finally informed written and verbal consent were obtained from the study subjects and data collection was undertaken based on their voluntarily participation. Participating respondents was ensured that information obtained would be strictly confidential.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents a throughout analysis the data collected from the sample. Profiles of respondents are presented a head of the discussion of the responses. 150 questionnaires were distributed to six purposely-sampled commercial bank staffs, one state owned bank (commercial bank of Ethiopia) and five private banks (Awash International Bank, Bank of Abyssinia, Dashen Bank, United Bank and Zemen Bank). From the total respondents of 150 questionnaires, 140 useable questionnaires 93.3% were obtained. In addition to questionnaire, the researcher conducted an interview with Electronics banking manager. In order to analyze the research results, Statistical Package for the Social Sciences (SPSS) software is used.

4.2. Demographic Information of the Respondents

The study participants on survey questionnaire have different personal information; besides these differences, they introduce different responses towards E-banking usage, and the factors that influence E-banking adoption. The following discussion shows these differences from the collected data. The demographic profile of respondents, participated in this study was shown in table 4.1 as follows

Table 4.1 Demographic information of the respondents

Variable	Classification of variables	Frequency	Percentage
Gender	Male	92	65.7%
	Female	48	34.3%
	Missing	0	0
Age	20-30	93	66.4%
	31-40	46	32.9%
	41-50	1	.7%
	51-60	0	0
	Missing	0	0
Educational Level	Diploma	1	.7%
	Degree	113	80.7%
	Master's Degree	26	18.6%
	Other	0	0
	Other	0	0
Employee category	State owned Bank	46	32.9%
	Private Bank	94	67.1%
	Missing	0	
Monthly Income in Ethiopian Birr	2000-2800	2	1.4%
	2801-5000	19	13.6%
	5001-6800	41	29.3%
	6800-8600	26	18.6%
	>8600	52	37.1%
	Missing	0	

Source: own survey (2017)

As it is shown on table 4.1, the highest percentage of participants in this study is males who make 65.7% of respondents and the remaining respondents of 34.3% are females. In the case of classification of respondents by age the highest percentage of participants are 20-30 years old, which forms 66.4% of the respondents. 32.9% of respondents categorized under 31-40 years. Small numbers of respondents are between 41-50 and there are no respondents between 51-60 years category. Regarding the educational level of the study participants, the highest percentage of respondents have bachelor degree that form 80.7% of total participants, 18.6% of respondents has second degree in different field of study and .7% of respondents have diploma. The largest percentages of participants are selected from the private banks that form 67.1 % of total respondents and the remaining 32.9% taken from state owned bank. On the other hand, the monthly incomes of respondents are , from 2000-2800 Br income category 1.4%, respondents categorized under Br, 2801-5000, 13.6% of the participants under 5001-6800Br, 29.3% of participants fall under 6800 to 8600 Br category and 18.6% of the participants earn more than 8601 Br a month 37.1% more respondents under this range.

4.3. Challenges of Adopting E-banking System in Ethiopia

There are many reasons, which constrain implementation of the system. In case of Ethiopian banking industries, many banks still using old banking system and do not have access to take advantage from electronic banking facilities.

These hindrance factors for adaption of electronics banking include lack of appropriate infrastructure for E-payment, lack of internet facilities with customer and power interruption. Moreover, factors that can affect adoption of E-banking in the country regarding the technological factor, organizational factor and Environmental factor were analyzed in the following sections.

4.3.1. Environmental Factor

One of the factors, which can affect the adoption of technological innovation in Ethiopia banking industry, is the existing business environment. In this study, four basic environmental factors are considered. These are government support, legal and regulatory frame works, competitive pressure and national ICT infrastructure. The result obtained

from survey and literatures regarding these four issues are discussed in the following sections.

4.3.1.1. Lack of Government Support

Government can affect either directly or indirectly the adoption of E-banking in terms of creating a favorable environment and power for banking industry and their customers so that the services can be diffused with the community. The study of Chong and Pervan's (2007) survey of Australian SME suggest that, government initiatives are the most significant factor determining the extent and deployment of E-business adoption. Similarly, the study of Sherah (2009) noted that government support is the major driver for the adoption of E-banking in china. The following table shows the questionnaire results about the government support.

Table 4.2 Customers are not to accept E-banking service

Customers may not willing to accept E-banking service						
		Frequency	Percent	Cumulative Percent	Mean	SD
Valid	Strongly Disagree	2	1.4		3.22	1.16
	Disagree	63	46.4			
	Neutral	9	52.9			
	Agree	47	86.4			
	Strongly Agree	19	100.0			
	Total	140	100.0			

Source: own survey (2017)

the majority of the respondents agree with Customers are not willing to accept E-banking service with the mean score of 3.22 and standard deviation of 1.16 customer willingness affect adoption of e- banking.

Table 4.3 the development level of providing infrastructure impacts of ne banking

The development level of providing infrastructure significantly impacts of E-banking						
		Frequency	Percent	Cumulative Percent	Mean	SD
Valid	Strongly Disagree	1	.7	.7	4.47	0.877
	Disagree	8	5.7	6.4		
	Neutral	3	2.1	8.6		
	Agree	53	37.9	46.4		
	Strongly Agree	75	53.6	100.0		
	Total	140	100.0			

Source: own survey (2017)

the level of development in providing infrastructural facilities (such as road, electric power, telecommunication and other) to significantly impacts of and e-banking adoption having the mean score of 4.47 and standard deviation of 0 .877.75 respondent 53.3% strongly agree and53 respondent 37.9% agree.

Table 4.4 Government support

Lack of government support			
	N	MEAN	ST.DEVATION
Lack of sufficient government support will affect customer willingness to use technology innovation	140	4	0.8
Valid N	140		

Note: N- Total number of respondents

Source: own survey (2017)

As it is depicted on the above table, respondents agree were asked whether, lack of government support is detrimental for the adoption of E-banking in Ethiopia or not. The mean and standard deviation value are 4 and 0.8 respectively. The result from questionnaire shows that the majorities of the respondents agrees and strongly agree 86 and 33 respectively with statement of. The finding of this study were also consistent with the study of SherahKurnia, FeiPeng, and Yi Ruo Liu (2010), the government support is also a strong driver for e-banking adoption in China.

4.3.1.2 Lack of Legal and Regulatory Framework

Electronic payments are currently covered in Ethiopian legal system and are encouraged by the national bank of Ethiopia. Lack of such legal framework may thus hinder the introduction of cost effective modern electronic payment instrument such as ATMs and debit cards, mobile/telephone/internet banking.

Table 4.5 Cross-country legal and regulatory impact on the adoption of e banking service

		Frequency	Percent	Cumulative Percent
Valid	Strongly Disagree	7	5.0	5.0
	Disagree	12	8.6	13.6
	Neutral	9	6.4	20.0
	Agree	85	60.7	80.7
	Strongly Agree	27	19.3	100.0
Total		140	100.0	

Source: own survey (2017)

The largest numbers of respondents agree with cross-country legal and regulatory impact on the adoption of e-banking service 85 respondents out of total or 60.7%.and 27 respondent 19.3% strongly agree.

Table 4. 6 lack of legal frame works that enforce banking industries to adopt technological innovation

	Frequency	Percent	Cumulative Percent
Strongly Disagree	1	.7	.7
Disagree	9	6.4	7.1
Neutral	10	7.1	14.3
Agree	69	49.3	63.6
Strongly Agree	51	36.4	100.0
Total	140	100.0	

Source: own survey (2017)

Lack of legal frame works that enforce banking industries to adopt technological innovation agreed 69 respondents out of total or 49.3%. And 51 respondent 36.4% strongly agree.

Table 4.7 Legal and regulatory framework

Legal and regulatory framework			
	N	Mean	Std. Deviation
Lack of legal frame works that enforce banking industries to adopt technological innovation	140	4.1429	.86141
Cross-country legal and regulatory impact on adoption of e banking service	140	3.8071	1.01000
Valid N (list wise)	140		

Source: own survey (2017)

As the above table depicts, that lack of legal framework that enforce banks to adopt and e banking significantly impact on e-banking adoption with mean score of 4.1429 and standard deviation of .86141 Similarly, lacks of regulatory guidelines one banking are another challenges for the adoption of agent banking and e-banking adoption having the mean score of 3.8071 and standard deviation of 1.01000. The study result indicates that lack of legal and regulatory frameworks hinder the implementation and development of e-banking service in Ethiopian banking industry.

4.3.1.3 Lack of Competitive Pressure

The competition from both foreign and domestic private banks appears to be the most important driver for banking industry to adopt and develop e-banking capabilities. Many studies state in their finding about competitive pressure. For example, the study of Laforet& Lu (2005) and Salwani (2009) suggest that, the foreign funded banks are more competitive in securing corporate clients over the Chinese banks because they are

perceived to offer better services and more stringent security measures given their longer experience in E-banking development. However, lack of competition in Ethiopia among local and foreign bank hinders Ethiopian banking industries to adopt E-banking system. Respondents were asked whether lack of competition among local and foreign banks influence adoption of E-banking and the result obtained from survey is shown on the following table.

Table 4.8 lack of competition among local and foreign bank

		Frequency	Percent	Mean	SD
Valid	Disagree	17	12.1	4.2143	1.00
	Neutral	5	3.6		
	Agree	49	35.0		
	Strongly Agree	69	49.3		
	Total	140	100.0		

Source: own survey (2017).

The above table indicates that the largest numbers of respondents in number 49 and 69 out of total and in percentile 35% and 49.3% agree and strongly agree respectively with lack of competition from foreign banks negatively influences e-banking adoption with the mean score of 4.2143 and standard deviation of 1.00. The findings of this study reflect that lack of competition from both foreign banks and local banks considered as challenges for adoption and development of e-banking service in banking industry.

4.3.1.4. Lack of adequate ICT Infrastructure

Despite the recent improvements made by Ethiopian government on the national infrastructure, the overall ICT infrastructure in Ethiopia remains inadequate. Card-based payment systems in Ethiopia have been growing fast in recent years. Almost all banks

have debit cards nowadays. In addition, they run their operation and introduce products and services for their customers. However, significant challenges to these plans include, lack of adequate financial and telecommunications infrastructure for the new technologies (Alemayehu& Jacqueline 2011). Similarly, the study of Wondwossen and Tsegai (2005) stated that lack of sufficient telecommunication infrastructure is one of the basic challenges in the development of E-payment in Ethiopia.

Table 4.9 Lack of ICT Infrastructure

Lack of ICT infrastructure			
	N	Mean	Std. Deviation
Internet connection was not good enough to perform online transactions in Ethiopia	140	4.5500	.85094
Mobile banking services may not perform well because of network problems	140	4.3643	.91519
Using internet banking is difficult due to low internet access in Ethiopia	140	4.4714	.87690
Lack of available ICT infrastructure	140	4.5929	.77642
Valid N (list wise)	140		

Source: own survey (2017)

The challenges of the quality of internet connection and mobile network for E-banking adoption ranked highest with the mean score of 4.55 and standard deviation of 0.85. The other factor is the lack of available ICT infrastructure was score with the mean score of 4.59 and standard deviation of 0.77. As the result of the study shows that E baking requires a generally good infrastructure in terms of communication and information technology. Therefore, the study identified that the inadequacy of ICT infrastructure are the major challenges faces the banking industry in adopting E-banking service.

4.3.2. Organizational Factor

One of the basic issue related with organizational factor is, the availability of financial as well skilled human resource to implement the e-banking system or in general classified as in terms of financial resource, these are an important factor in facilitating innovation adoption for any organization and they are often correlated with the firm size (Kuan 2001 &Iacovou 1995), human resource. These are important factor for the adoption of e banking and support of top management, these are also plays a significant role as a factor affecting of e banking. In this, study costs related with the use of E-banking instrument and technical or managerial skills required to implement E-banking system were considered as organizational factors

.As it is shown in the following table 4.3, the cost incurred on the use of different e-banking system like internet/online banking and mobile banking the largest number of respondents 121 out of the total 140 respondent or 85.5% agree with this idea. The result presented on table 4.3. Shows that there is unfamiliarity with the service provided though ATM, Internet banking, telephone and mobile phone by customers. Lack of technical and managerial skills on the use of technological innovation and lack of skills to implement E-banking system are considered as challenges for the adoption of E-banking system as they mention in the collected data.

Table 4.10 Organizational factor

	N	MEAN	SD
Customers Not Familiar With E Banking Service	140	4.1000	1.00574
Lack Of Sufficient Gov't Support Will Affect Customers Willingness To Use Technological Innovation	140	4.0000	.81355
Lack of skills to implement E-banking system	140	3.9500	.93166
Lack of technical and managerial skills on the use of technological innovation.	140	3.9429	.90380
Using internet banking increases cost to do banking task	140	2.7286	1.29105
Implementing technological innovation requires high investment cost	140	4.0071	.80909
Mobile banking services may not perform well because of network problems	140	4.3643	.91519
Valid N (listwise)	140		

Source: own survey (2017)

The above results were answer received from all respondents which shows about 121 respondents out of total or about 86.5% agreed on customers are not familiar with E-banking, which indicated most of the customers are not clear with using different technological innovation in banking industry is used to perform banking activities at lower costs.

In general, using of E-banking service such as card banking (using ATM machine and POS machine), internet banking, mobile banking and others is not expensive when compared with traditional banking system because it minimizes many hurdles when we go to a branch such as queue, inconsistency in terms of time. On the other hand, lack of familiarity with different technology and lack of sufficient skills to use and implement E-banking system are considered as challenges to adopt E-banking system in Ethiopia.

The respondent answer indicates that the largest numbers of respondents 48.6% and 37.9% were agree and strongly agree respectively with customers not familiar with E-banking service negatively influences and e-banking adoption with the mean score of 3.95 and standard deviation of 0.93166. Similarly the respondents agree with lack of skills to implement E-banking system negatively influences e-banking adoption having the mean score of 4.1 and standard deviation of 1.00574. The findings of this study reflect that customers are not familiar with E-banking service and lack of skills to implement E-banking service are considered as challenges for adoption and development of agent banking and e-banking service in banking industry.

4.3.3 Technological Factor

The issues raised in this study in relation with technological factor are the relative advantages (perceived benefit) the firm gained from adoption of E-banking system and the relative disadvantages (perceived risk) which hinder banking industries from the adoption of new technological innovations.

4.3.3.1. Perceived Risk

One of the basic challenges a firm faces when adopting technological innovation is categorized under perceived risks. This includes lack of trust, fear risk to use E-banking service. For example, the study of Sohail and Shanmugham (2003) suggests that one of the challenges in the adoption of electronic banking is fear of security risks. Moreover, all of the bank E-banking manager's participated in this study were asked whether security issue is raised with the use of technological facility in the banking industries, and all of them state that security is the main concern that hinders our bank to use technological facilities. These are also supported by the survey result shown on table 4.11, as follows

Table 4.11 Technological factor

Technological factor				
Customers do not trust the technology provided by the banks	N	Range	Mean	Std. Deviation
Customers of our bank fear risk to use automated teller machine(ATM)	140	4.00	3.6786	.93122
Lack of trust is considered as barriers for the adoption of E-banking system in Ethiopia	140	4.00	3.7071	.90955
Lack of confidence with the security aspects considered as barrier for the adoption of E- banking system	140	4.00	3.9214	.74009
In the case of using mobile banking, ATM and	140	4.00	3.9929	.68379
Valid N (listwise)	140	4.00	3.9857	.82222

Source: own survey (2017)

As the above table indicates, that the respondents who agree that on the customers do not trust the technology provided by the banks have the mean score of 3.6786 and standard deviation of 0.931 Similarly, the response of respondents as shown on the above table lack of trust is considered as barriers for the adoption of e-banking service in Ethiopia is another challenge for e-banking adoption with the mean of 3.92 and standard deviation of 0.74. In the case of using MB, ATM and others security risk affect user's decision also affects the adoption of e- banking with mean score 3.98 and standard deviation 0.82, Customers of our bank fear risk to use ATM affects adoption of e banking with mean score of 3.7 and standard deviation of 0.9, and Lack of confidence with the security aspects considered as barrier for the adoption of e- banking system with mean score 3.99

and standard deviation of 0.69. This result is consistent with the findings of Ghazi and Khalid (2012); Khalfan (2006) in which all indicates that, technological barriers, such as security risk as hindrance factor for the adoption of E-banking.

4.4. Perceived Benefits of Electronic Banking of Adopting E-banking System in Ethiopian Banking Industry

E banking provides a lot of bank products and services. It is obvious that savings on operational cost, efficiency, gaining new segments of customers, improved organizational functionality, improvement of the banks reputation and better customer services and satisfaction are primary benefits to banks (Jayawardhena & Foley, 2000). E-banking reputation and productivity gain, improved efficiency, saving of time and increased profitability is beneficial to customers in terms of cost savings, no limit on time and space, quick response to customer complaints, and better services/products. Such benefits are believed to elevate customer satisfaction. Indirect benefits include the opportunity or intangible benefits such as improved customer's satisfaction through improved services, improved banking experience and fulfillment of their changing needs and lifestyle (Lu 2005; Kuan 2001 & Iacouou 1995).

Perceived benefit of adopting E-banking system considered in this study were classified based on technology acceptance model (TAM), as perceived ease of use (PEU) and perceived usefulness (PU). PU was classified in terms of time and cost saving. In addition, other benefits beyond cost and time saving were analyzed at the end. In order to access online banking services, it is important that bank should have ICT infrastructure and internet facility available to facilitate their customers with all kinds of online banking services. Pikkarainen (2004) argued that bank must have an official website which facilitates customers to perform all kinds of online transaction so that, It saves customer cost and time as adopting E-banking system. Customer can make transactions from their home. Polatoglu (2001) suggests many benefits associated with online banking. Customer can pay their bills, can pay their loans, credit and debit card facilities. In other words, it provides freedom from location, saves time and cost. However, in our countries no one provides utility payments in used of card banking or other e banking channels

4.4.1. Perceived Ease of Use

One of the basic benefits related with the use of E-banking system is the perceived ease of use. Giglio (2002) suggests that adopting online banking services reduce the workload over the banking staff and it is easy to have more satisfied customers. On the other hand, Robinson (2000) indicated that online banking provides convenience not only to bank and to customers. The data obtained from the survey in this study also confirms the finding of Giglio (2002) and Robinson (2000) and the result were shown in following table as follows.

Table 4.12 Perceived use of ease

Perceived use of ease			
E-banking system helps to perform banking task in a simple way	N	Mean	Std. Deviation
E- banking makes it easier for me to do banking activities	140	4.6071	.54570
From the bank perspective it is easy to use mobile	140	4.6429	.49561
In the case of mobile banking, our customers can simply use banking service by using their cell phone	140	4.3214	.93891
Our bank provide guidelines on the use of electronic banking facility	140	4.3214	.89175
The management of the bank provides training courses for its staff when introducing new services	140	2.5786	1.22367
Using E-payment system (like debit card, salary card, ATM or visa card) simplify the activity of workers to deliver	140	2.4071	1.37760
Bank provides a simple instruction how to use E-banking	140	4.2071	.86911
Valid N (listwise)	140	3.3357	1.37087

Source: own survey (2017)

The largest number of respondents agreed up on perceived ease of use. Regarding ease of use as a benefit of adopting E-banking system, respondents were asked whether they „strongly agreed, Agreed, Neutral, and Disagreed or strongly disagreed“ based on eight questions shown in the above table 4.12. The result for all statements of the field indicated that, Mean and standard deviation value is 3.8 and 0.98, which mean that respondents of the sampled agreed with the idea that perceived ease of use in terms of, simplifying banking activity, is a good factor for the ability to adopt E-banking system.

This study were similar with the finding of Khalid (2006) which shows that there is a clear agreement about the importance of making the E-banking service because of it is easy to deliver service to customers, also the finding of this study is in line with the result found by Hoppe (2001) which suggest that the more complex a new technology is perceived to be, the less likely it will be adopted and the more ease of use the more likely to be adopted.

4.4.2. Perceived Usefulness

Perceived Usefulness is a good factor to measure the success of E-banking adoption. It has also long been found to have a significant influence on attitude and intention to use or adopt an innovation (Yuttapong, 2009; Sheikhshoaei and Oloumi, 2011; Zhou, 2011). Hoppe (2001) indicated that perceived relative advantage has a positive influence on the adoption of Internet Banking and it is compatible with their values to be adopted by users. It is the extent to which a user believes that a particular system would improve their performance (Hosein, 2010).

4.4.2.1. Time Saving

According to an interview result, one of the basic benefits considered in the adoption of E-banking system, is that it saves time to accomplish banking activities both for banks as well to customers. Using the system to get banking service is fast and available 24 hours a day and 7 days a week. This were in line with the study of Karjaluoto (2002), which identifies time saving as a major benefit of adopting online banking system. Regarding time saving as driver for the adoption of E-banking system, respondents were asked

whether they are strongly agreed, Agreed, Neutral, disagreed or strongly disagreed and the result of survey were shown on the following table.

Table 4.13 perceived usefulness in terms of time saving

Perceived usefulness in terms of time saving			
	N	Mean	Std. Deviation
E banking is more accessible to users than visiting a branch.	140	4.6000	.57276
E banking is convenient, in terms 24/7.	140	4.6000	.59736
E-banking services are enables users to complete banking activities more quickly and easily.	140	4.6214	.55578
E-banking are convenient, in terms of time saving	140	4.6643	.48888
Valid N (listwise)	140		

Source: own survey (2017)

The mean and standard deviation responses of the question E banking is more accessible to users than visiting a branch using E-banking such as internet banking, mobile banking, ATM, POS and other services enables users to complete banking activities more quickly and easily were 4.6 and 0.55 respectively. It means that the largest number of respondents 90 or 65% strongly agreed. These result implies, that using online banking system helps to perform banking activities within a short period of time. Clients can simply check their balance, transfer funds and pay their bills on line with just a click of mouse and a touch of button. On the other hand using internet banking is more convenient in terms of saving time and delivering of bank service to customer 24 hours a day, 7 days a week, were the mean, and standard deviation value is 4.6 and 0.55. The result shown on the E banking services are convenient in terms of time saving that the mean and standard deviation value is 4.66 and 0.5 respectively. This indicates that, without suffering in branch and killing time, customers can get bank service by using E-banking system easily in cheap price. In line with this finding Balachandher (2010) suggests that, one of the implications of E-banking is that it should reduce the need to visit bank branches to get services.

4.4.2.2. Cost Saving

Cost minimization is an important goal for every business organization in addition to wealth maximization. Cost minimization is an advantage of using the system from two perspectives category, first from the bank perspectives, by using E-banking system like, ATM, internet banking, mobile banking and others, banks save many costs. In the long run a bank can save money by not paying for tellers or for managing branches. This way of cutting transaction cost results in higher profit margin for the banks. D’Souza (2002) noted that, the combination of higher technology and higher skills have posted a higher turnover for banks as they have been able to provide better customer support and have managed their assets well. Second, customers can get banking service at lower costs compared with traditional banking service, because, it is cheaper to make transaction over Electronic fund transfer. Similarly, the study of, Balachandher (2010), noted that, online banking fees have reduced over the years and less expensive when compared with traditional system.

Table 4.14 Perceived usefulness in terms of cost saving

Perceived usefulness in terms of cost saving			
	N	Mean	Std. Deviation
The transactions in Internet banking are at a lower price, or at no cost	140	4.4286	.79696
Using technological tools like ATM helps to perform transaction at lower cost	140	4.3857	.94134
Valid N (listwise)	140		

Source: own survey(2017)

The largest numbers of respondents were agreed on e-banking services save cost of users with the mean score of 4.39 and standard deviation of 0.87. This shows that the customers of the bank can save their money by using e-banking products in order to withdraw money from their account by take withdrawal slip and waiting queue, to make payments for other person, to transfer funds and to check the account balance without the need to travel long distance to get bank branches.

The other benefits gained from implementing of E-banking system are that it increase the productivity of bank, were the mean and standard deviation of 4.47 and 0.58 respectively. The majority of respondents were agreed that E-banking increase reliability and accessibility with the mean value of 4.47 and standard deviation of 0.60. This implies that in addition to increasing the productivity, adopting E-banking products improve the reliability and accessibility to customers and it brings better customer service and satisfaction. On the other hand, e banking creates better r/ship among banks and customers with the mean and standard deviation of 4.47 and 0.59 respectively. This indicate that the bank and customers are working together this may help for banks to improve their service. Most of the respondents were agreed that E-banking service is more accessible to users than visiting a branch wherever they are, it helps to perform banking tasks in everywhere with the mean value of 4.6 and standard deviation of 0.57. This shows that using of E-banking system helps customer to gain service when they cannot come in branch. As the bank implement and provide e-banking services delivery channels widely, the number of customer come to bank branch can reduced in compared to those banks that do not adopt e-banking service.

4.5 Analysis of the Interviews

4.5.1 Interview with Six-selected Bank Electronics Banking Department Heads/Manager

A structured interview was designed and conducted with E-banking department heads of six commercial banks, namely Commercial Bank of Ethiopia, Awash International Bank, Abyssinia International Bank, United Bank, Dashen Bank and Zemen Bank. A separate interview was conducted with a representative of the payment settlement and system

director (PSSD) of the National Bank of Ethiopia. The following part presents answers of the interviewees of the six.

Commercial Banks interviews questions followed by responses of each respondent. Similar responses of interviewees are written once to avoid undue reputation.

For the first interview question, “Do you offer E-banking service to your customers? Why?” all interviewee E-banking departments” heads of the six banks affirmatively responded for availability of ICT services in their respective banks. The reasons they offer for the supply of such services to customers are also identical. Respondent’s answer (of Abyssinia Bank) summarizes all responses. Among other reasons, he cites the following reasons as to why his bank introduces E-banking product to customers.

- ❖ To improve accessibility of the banks services;
- ❖ For convenience of the bank’s customers;
- ❖ To provide efficient services in a timely fashion;
- ❖ To reduce transaction costs (time of both staff and the customer, stationary materials like paper etc.)- at least in the long-run;
- ❖ To effectively compete with other banks for better market share and
- ❖ To attract more customers from the market

The second question, “What benefit the bank can maximize by offering E-banking service?” is also responded similarly with few variations. For example, respondent of Zemen Bank enumerates increment of number of the banks customer and hence market share and the subsequent higher deposit mobilization, higher customer satisfaction, and inclusive service provision as benefits of E-banking. Respondent of Abyssinia Bank adds reduction of queues of customers in branches, creation of paperless banking services and efficient time utilization for other services that could not be offered by E-banking products. Respondent (of Dashen bank) on his part believes that E-banking services offer banks more time to innovate or adopt new products by enhancing productivity and helping to meet their set goals. Respondent of Commercial Bank of Ethiopia adds competitive advantage and reduction of inconveniences of customers as benefits of E-banking to banks.

The third interview question is, “How do you evaluate the legal ground towards E-banking service?” All interviewees claim that their respective bank comply the legal grounds set for E-banking adopting their own internal polices in a move to secure more market share subject to the Regulator’s guidelines. Respondent of United Bank identifies legal documents that are set by the regulator to legitimize and to document each transaction.

Without any exception, all respondents agree that E-banking is safer than the usual paper based banking citing a number of reasons in responding to the fourth question, “Do you believe E-banking is safer than paper based banking?” All respondents believe that E-banking avoids human errors that are common in paper-based banking.

The responses of the six interviewees to the fifth question, “Does E-banking bring the benefit that you aspire from it?” vary, since the extent of the E-banking product they supply and the age of such supply vary across banks. However, all respondents have positive reviews of the service. Respondent of Commercial bank of Ethiopia witnesses, “magnificent achievement- result far from planned”, while respondent of United Bank admits minimum number of clients in internet banking product.

Respondents classify “the major challenges of E-banking” into two (internal challenge and external challenge) in responding the sixth question. The internal challenges identified by the interviewees include failure to have sufficient skilled labor, lack of experience, hesitancy to invest in E-banking and failure to create sufficient awareness among the potential clients. External challenges are attributed to the public monopolies-unreliable power supply and slow and undependable internet connections. Respondent of Dashen Bank also adds vulnerability of ATMs for vandalism, despite there is a recent move of installing security cameras.

In responding question number seven, “...possible opportunities ... to E-banking” all respondents see bright future citing reasons such as- “untapped market”, “conveniences to both banks and customers”, “transfer of knowledge and skill” and “the system-in Infant stage but promising venture”.

The eight-interview question is, “Do you think there are enough infrastructures to offer E-banking service in Ethiopia?” The responses are mixed but aligned to dissatisfaction.

To Awash bank, addressing telecom and power problems is tougher than internal infrastructure shortages. However, all respondents admit poor telecom service and unreliable power supply are the two important obstacles for E-banking.

Banks vary in selecting eligibility of beneficiaries to their E-banking service. In responding question number 9, “For which type of account holder the bank is providing e-banking service?”, Respondent of Abyssinia bank responds “saving account and current account holders with the exception of illiterates and minors.” Respondent of CBE, on his part, identify the beneficiaries of the service as “All account holders but minors and Union institution like school, church & AND account.” Respondent (of United Bank) responded similarly.

Each interviewee introduces bundles of service the respective banks offer in responding the tenth interview question, “... the type E-banking delivery channels ... bank is delivering?” The bundles of E- banking services being supplied by the six banks is almost identical with varied extent of accessibility, since the number of some E-banking facilities (for example ATMs) considerably vary across banks, the CBE possessing by far the largest ATMs in the industry in Ethiopia. However, the recent move to integrate ATMs across banks in Ethiopia reduces such variety. The E-banking Bundle includes Mobile Banking, Internet Banking, Card banking (ATMs) and Point of sale machine (POS)

The Eleventh interview question, “Do you think the government policy have impact on adoption of E-banking system?” is among hotly addressed questions by each interviewee. Respondent of Abyssinia bank complains the regulator (National Bank of Ethiopia) is being excelled by the Commercial banks in introducing regulation to respond to the rapidly growing product innovation/inventions of banks.

In responding question number 12, “Do you see any social, Economic and legal barriers to the adoption of ATM, internet Banking and mobile banking in your institution?” Respondent of Abyssinia bank outlines most of such barriers. He identifies technophobia among the public, high level of illiteracy, weak trust, higher costs of mobile apparatus to use, and inaccessible ATMs for persons with special needs as the most enduring barriers E-banking system.

Question number 13 asks the key factor that push banks to adopt ATMs, internet and mobile banking systems. Respondent's (of Zemen Bank) response is inclusive of that of the other interviewees. To respondent the key push factors are Globalization, customers' demand, accessibility and cost effectiveness and ever-increasing competition among banks.

“What are the advantages of use in different banks ATMs and POS device across the country holding one bank visa card?” is the 14th interview question. Better accessibility to customers and reduced costs to banks are common responses of the six interviewees. To Awash bank, such move saves the hard currency the country spends for such facility through high utilization of each facility.

The last interview question asks the advantages of using by another bank ATM and POS device without cardholder bank. This practice has disadvantage except one respondent (respondent of Abyssinia Bank). The main disadvantages mentioned are increased customer- machine overhead and unfair competition among banks.

From the interviews conducted, the researcher understands that E-banking in Ethiopia has bright future; high opportunity for growth since it is in its infant stage and ever-growing demand. The main challenges of the E-banking system (lack of awareness, unreliable power and telecom supply) are bearable in the long run since power and telecom provisions are expanding and lack of awareness can easily be removed through education.

4.5.2 Interview with National Bank of Ethiopia (NBE) Payment Settlement and System Director

A set of twelve interview questions are presented to the representative of NBE, respondent. Each of the responses of the interview questions are presented here under

The first question asks if there is “... any guiding rule to commercial banks to adopt E-banking...” Respondent responded affirmatively presence of E-banking directive explaining the need to regulate every banking business product with pre-established rules and regulations.

To the second question, “What is the present goal to adopt E-banking?” Respondent says just to provide update the banking business to the expectations of the market and the customers. He argues that E-banking directives help the law enforcement community to tackle money laundry crimes in his response to the third question, “How to control transactions made in E-banking especially in connection of money laundering?”

To National Bank, the E-banking system improves efficiency of banks, reduces queue of customers in bank branches and avoids wastages of stationary martials- responds for the fourth question, “... the main advantage expected from ...E- banking...?”

“How the legal framework in financial sector facilitates the adoption of E-banking?” is the fifth interview question. The representative of the regulator bank claims the banking business proclamation No. 592/2008 adopted by the federal legislature and the subsequent regulations issued by the NBE are supportive of E- banking business.

To the sixth question, “Why the service of E-banking not developed as its age in Ethiopia?”, the representative attributes to late arrival of the system, the strict precondition to commence E-banking service set by the regulator and late adoption of core banking system by the banks. Besides, the representative is hesitant to boldly tell the existing infrastructure is capable to provide E-banking service without interruption citing the prevalent unreliable power and telecom services. He has said the in his response to the seventh question, “Do you believe that the existing the existing ICT infrastructure is enough to provide E-banking without interruption?”

“No security breach ever reported in E-banking system so far.” Is the response of respondent to the eight questions, “Is there any major reported security breach in connection with E-banking?” He shares the opinion of commercial banks as E-banking is untapped fortune of commercial banks as prospectus of E-banking in responding the ninth interview question, “... the prospectus and challenges of adopting new technological innovations?”. However, he enumerates reluctance to accept new E-banking products among customers, possibility of risks as the system expands and lack of enthusiastic staff as possible challenges in responding the same question.

The regulator bank creates legal infrastructure in a move to address the needs of commercial banks to commence E- banking service. However, banks are not compelled

and encouraged to commence the service without sufficient preparations- explains the representative in responding the tenth interview question, “Is there any legal framework at central bank to enforce banking industries to use E- banking system, such as ATMs/debit card, telephone/mobile banking/internet banking?”.

Respondent affirmatively responded for presence of special directive that guides the banking industry in implementation of E-banking system to the eleventh interview question. The representative justifies the need to delay foreign banks to operate banking business in Ethiopia citing the domestic banking industry is yet in its infant stage and could not compete with well-developed and technologically advanced foreign banks. He argues the domestic banks could be out of business if the government entertains the needs of foreign banks without sufficient preparation- in responding the last interview question- why the Ethiopian government is hesitant to permit foreign banks operate in the nation. However, he denies such move could not prevent domestic banks to innovate new services and technologies.

The researcher understands that there is similar understanding between the regulator bank and commercial banks on Prospectus, limitations and challenges of E-banking service in Ethiopia. The regulator bank is keen to address legal needs of the commercial banks despite it is not pioneering them in building legal infrastructure to the ever expanding banking products.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Summary of Findings

The study adopted a descriptive analysis on assessment on electronic banking adoption in Ethiopia financial industry. The study aimed at providing policy makers and stakeholders in the banking industry with information to identify and formulate strategies that will promote electronics banking.

Considering the Technology Organization Environment (TOE) framework and Technology Acceptance Model (TAM), this study has identified a number of factors that are challenges and prospects for adoption of electronics banking. The framework is classified in to three factors to determine the challenges of e-banking system; these are technological, organizational and environmental factor. Under technological factor, the research identified the technophobia, security risk and lack of trust considered as challenges highly for adopting e banking. Secondly, an organizational factors identified its customers were not familiar with e-banking, lack of sufficient government support, educational level and agent skill impact on adoption of e banking. In case of environmental factors, negatively affected variables are willingness to accept e-banking product, *absence of competition between local and foreign banks*, legal and regulatory frameworks, availability of ICT infrastructure like electric power and telecom network.

Banks adopt e banking due to the future tremendous benefits. The commercial banks in Ethiopia offer e-banking service such as ATM, POS, debit card, Mobile banking, Internet banking, and Agent banking.

Findings from the study revealed that factors based on TAM such as convenience, transaction minimization, cost saving, improvement in productivity, improvement in speed and efficiency in service delivery, revenue generation and increase in market share were benefits for commercial banks from its adoption of e-banking.

In general, the findings of study identified other benefits of adopting e-banking such as increased efficiency in terms of time and cost, increased accessibility, improve customer service, increase customer intimacy, reduce branch hall queue and convenience 24/7.

5.2 Conclusion

Based on the analysis made in fourth chapter the following conclusions are draw on the assessment on challenge and prospect on adoption of e banking in Ethiopian financial industry.

The study aims at distinguish the main challenge and prospect of adoption of e banking in Ethiopia. E-banking system such as ATM, Mobile Banking, Internet Banking, Agent banking and other electronic payment systems are at infant stage. This is due to lack of awareness about technological innovation, willingness of customers to accept ICT innovations, the development level of ICT infrastructure and the poor quality of internet connection and mobile network is a major hurdles for e-banking to deliver service efficiently and effectively. In addition to the above, as shows on the study also security risk and lack of trust on the use of technological innovation are major challenges for the system. The development level of providing infrastructure , lack of skills to implement e-banking system, lack of confidence and high cost of implementation are another challenges for the adoption of e-banking in Ethiopia.

Government support plays a significant role in adoption of e banking. On other hand, lacks of government support, lack of legal and regulatory frameworks are challenges for adoption of e banking in Ethiopian financial industry.

Besides, the study reveals that offering convenience to customers, having access banking service anytime, anywhere with speedy delivery. E banking with its automation leads to reduction of manual processes and related operating cost while service delivery becomes much quicker.

The main practice of e-banking in Ethiopia that are providing service have been for customers are balance inquiry, view recent account statement, cash withdrawal, PIN change, fund transfer with in same bank account, local money transfer without account, telephone banking and access 24/7.

As per the finding, the banking industry gained a lot benefits from adoption of e-banking system. The customer using e banking are existence of high competition in the banking industry and reduce transaction cost to build organization reputation.

It can therefore, be concluded from this study that there is a bright future for e banking in Ethiopia financial industry.

A further study with in-depth analysis on the customer perception on technological innovation for the introduction of e-banking products in Ethiopian financial industry is required.

5.3 Recommendation

Based on the above conclusion, the suggestions for the findings are as follows. It will help the Ethiopian financial industry in minimizing the challenges faces and enhance the possible opportunity on the adoption of e-banking system.

- The banks have a duty to ensure customer confidence in the e-banking services they provide and assure them of the security and privacy they need to patronize these services.
- Government should give more emphasis on the provision of power supply without power nothing to do even have a tele network available, sufficient power supply is mandatory for the uninterrupted and efficient provision of e-banking service; ongoing effort by the government to address adequate power supply to the country should be encouraged.
- Government should support by way of ICT infrastructure provision on the side of tele is essential for creating the enabling environment for e banking to thrive in the country.

- All banks should adequately train their employees in e-banking products and technological innovations to be able to address customers' needs and face challenges.
- The national bank of Ethiopia should prepare various capacity building activities for banks representatives about e-banking operation.
- All banks should promote the e-banking system for customers in order to build public image and awareness on the use of e-banking service.
- All banks should promote the opportunity create by Ethio switch sc. and working together with them in regardless of dispute resolution mechanism as a result reduce the compliance customers.

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APPENDICES

Appendix A. Questionnaires and interview guide.

Questionnaire

ST.MARY'S UNIVERSITY SCHOOL OF BUSINESS STUDIES

Questionnaire to E-Banking Department employees

Dear Respondents

This questionnaire is prepared to gather data from department of E-banking for the accomplishment of Masters of General business administration Project paper at ST.MARY'S UNIVERSITY SCHOOL OF BUSINESS STUDIES . The purpose of the study is to assess challenges and prospects adoption of E-banking in Ethiopian financial industry. Your genuine and well thought response to the questions will enhance the purpose of the study. I kindly request you to spent some of your precious time to fill the questionnaire as frank as and reasonable as possible. I would like to assure you that the information you give will be used only for achieving academic purpose and it will be kept confidential. You are not supposed to write your name. Hence, I believe that you will enlarge your assistance by participating in the study. Your honest and thoughtful response is invaluable. I thank you in advance for your cooperation.

Email:muradabrar33@gmail.com

Phone=0922823914

General Instruction

This questionnaire contains two sections and under section two have 3 parts and also 7 pages that will be expected to take approximately 20 to 25 minutes to complete. Please provide your responses to the questions based on the instructions under each section. If you have comments or if you want to provide further explanations, please use the space provided at the end of the questionnaire.

Section I: Demographic profile of respondents

Please indicate the following by ticking (√) on the spaces in front of the response options:

1. Gender: Male [] Female []
2. Age: 20-30 [] 31-40 [] 41-50 [] 51-60 []
3. Educational level: Diploma holder [] First degree holder []
 Master’s degree [] other []
4. Employer: State owned bank [] Private bank []
5. Monthly income (in Eth. Birr): 2000-2800 [] 2800-5000 []
 5001- 6800 [] 6801-8600[]
 Above 8600 []
6. How many years in total have you worked in the bank? _____
7. Position _____

Section II. Questions Related to prospects and challenges of Banks Providing E-Banking Services

Instruction: Below this lists of statements pertaining to Adoption of E-banking. Please indicate whether you agree or disagree with each statement by ticking (√) on the spaces that specify your choice from the options that range from “strongly agree” to “strongly disagree”. Each choice identified by numbers ranged from 5 to 1.

Note: SA- Strongly Agree, A- Agree, N- Neutral, D- Disagree, SD- Strongly Disagree

Part one objective1: Questionnaires related with challenges of adopting E-banking system

The following are some challenges the company faces, when adopting E-banking system, please tick on your choice. [√]		S A	A	N	D	S D
		5	4	3	2	1
S.no	I. Environmental factors					

1	Customers may not to accept E-banking service					
2	Cross-country legal and regulatory differences will have impact on the adoption of new technological innovation in the banking sector like, ATM, internet banking, mobile banking and Point of sale terminals (POS).					
3	Lack of available ICT infrastructure					
4	Lack of sufficient government support will affect customers willingness to use technological innovation					
5	Lack of legal frame works that enforce banking industries to adopt technological innovation					
6	Lack of competition among local bank and foreign banks					
7	Internet connection was not good enough to perform online transactions in Ethiopia					
8	Mobile banking services may not perform well because of network problems					
9	Using internet banking is difficult due to low internet access in Ethiopia					
10	The development level of providing infrastructure significantly impacts of E-banking					
	II. Organizational factors					
11	Customers of our bank were not familiar with service provided though ATM, Internet banking, telephone and mobile phone					

12	Lack of skills to implement E-banking system					
13	Lack of technical and managerial skills on the use technological innovation.					
14	Relatively using of Mobile to get banking service is expensive for customers					
15	Using internet banking increases cost to do banking task					
16	Educational level and agent skill impact on adoption of E-banking					
17	Implementing technological innovation requires high investment cost					
	III. Technological factors(Perceived risk)					
18	Customers do not trust the technology provided by the banks					
19	Customers of our bank fear risk to use automated teller machine(ATM)					
20	Lack of trust is considered as barriers for the adoption of E-banking system in Ethiopia.					
21	Lack of confidence with the security aspects considered as barrier for the adoption of E- banking system					
22	In the case of using mobile banking, ATM and others, security risk affect users decision to use the system					

NB. If any other challenges not mention in the above list of variables please specify or write in the free space

Part Two objective 2: Questionnaires related with prospects of adopting E-banking system

The following are some of the perceived benefits the company derived from the adoption of E-banking system, please tick on your choice. [√]		S A	A	N	D A	S D
		5	4	3	2	1
S.n	IV. Perceived Ease of Use					
o						
1	E-banking system helps to perform banking task in a simple way					
2	E- banking makes it easier for me to do banking activities					
3	From the bank perspective it is easy to use mobile					
4	In the case of mobile banking, our customers can simply use banking service by using their cell phone					
5	Our bank provide guidelines on the use of electronic banking facility					
6	The management of the bank provides training courses for its staff when introducing new services.					
7	Using E-payment system (like debit card, salary card, ATM					

	or visa card) simplify the activity of workers to deliver					
8	Bank provides a simple instruction how to use E-banking					
	V. Perceived Usefulness					
9	Create better relationship among banks & customers					
10	Increase reliability and accessibility					
11	Increased the productivity (revenue) of bank					
12	Improve customer service& enhanced image					
13	Used as better information control tools					
14	No time limit to access bank account and information					
15	Reduce (Queue) number of customers come in to the branch					
16	Speed and efficiency					
17	The transactions in Internet banking are at a lower price, or at no cost					
18	E-banking is more accessible to users than visiting a branch					
19	E-banking such as, Internet banking ,Mobile banking, ATM and POS are convenient, in terms of 7 days and 24 hours					
20	E-banking such as, Internet banking, Mobile banking, ATM and POS services are enables users to complete banking activities more quickly and easily					
21	E-banking such as, Internet banking ,Mobile banking, ATM					

	and POS are convenient, in terms of time saving					
22	Using technological tools like ATM helps to perform transaction at lower cost.					

NB. If any other benefits not mention in the above list of variables please specify or write in the free space

Part Three objective 3: Questionnaires related with general service provide for customers in E-banking system

Instruction: please tick on your choice. [✓]

I. What banking activities does your bank offer via Electronics banking?

	<u>Right</u>	<u>Wrong</u>
1. Check Balance	[]	[]
2. View account historical records	[]	[]
3. Order Pin code	[]	[]
4. Transfer Fund with in the same bank	[]	[]
5. Transfer Fund across banks	[]	[]
6. Utility payments	[]	[]
7. Order/print account statement	[]	[]
8. Apply for loan	[]	[]
9. Apply for debit cards	[]	[]
10. Local Money Transfer without account	[]	[]
11. Order regular payments for beneficiary	[]	[]
12. Purchase of goods and service	[]	[]
13. Cash withdrawal	[]	[]
14. Apply for blacklist card due to lost	[]	[]
15. Apply for damage of card & forgotten pin	[]	[]

If any other, service provides by your banks list down here

Interview

Interview questionnaires designed for the managers of the six-selected Bank

- 1 Do you offer E-banking service to your customers. Why?
- 2 What benefit the bank can maximize by offering E-banking service?
- 3 How do you evaluate the legal ground towards E-banking service?
- 4 Do you believe E-banking is safer than paper based banking?"
- 5 Does E-banking brings the benefit that you aspire from it.
- 6 What are the basic barriers of adopting new technological innovations like ATM, internet banking and mobile banking?
- 7 What are the benefits your institution gained from the adoption of ATM, internet banking sand mobile banking system in the delivery of service to customers?
- 8 Do you think there are enough infrastructures to offer E-banking service in Ethiopia?
- 9 For which type of account holder the bank is providing e-banking service?
- 10 What type of Electronic banking service do you provide? ATM, Internet banking, mobile banking or others? Please specify
- 11 "Do you think the government policy have impact on adoption of E-banking system?
- 12 Do you see any social, Economic and legal barriers to the adoption of ATM, internet banking and mobile banking in your institution?
- 13 In your opinion what are the key factors that push your institution to adopt ATM, internet banking and mobile banking system?
- 14 What are the advantages of use in different banks ATMs and POS device across the country holding one bank visa card?

Interview with National Bank of Ethiopia (NBE) payment settlement and system director

1 Is there any special rule that guide banking industries in implementation of E- banking system?

2 What is the present goal to adopt E banking?

3 How to control transactions made in E-banking especially in connection of money laundering?

4 What are the main advantages expected from E- banking...?

5 How the legal framework in financial sector facilitates the adoption of E-banking?

6 Why the service of E-banking not developed as its age in Ethiopia?

7 Do you believe that the existing the existing ICT infrastructure is enough to provide E banking without interruption?

8 Is there any major reported security breach in connection with E-banking?

9 As your opinion what are the barriers and drivers of adopting new technological innovation?

10 Is there any legal framework at central bank to enforce banking industries to use E-banking system, such as ATMs/debit card, telephone/mobile banking/internet banking?

11 Why Ethiopian government did not allow foreign banks to operate in the country? Do you think it discourage Ethiopian banking industry, from the adoption of technological innovation and compete with foreign banks?

ENDORSEMENT

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

Advisor

St. Mary's University, Addis Ababa

Signature

May, 2017