



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**THE CHALLENGES AND PROSPECTS OF ADOPTING
ELECTRONIC BANKING IN SELECTED PRIVATE BANKS OF
ETHIOPIA**

**By
MERON TADESSE
SGS6/0293/2006B**

**JANUARY, 2016
ADDIS ABABA, ETHIOPIA**

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**A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY,
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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr. Tilaye Kassahun. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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January, 2016

ENDORSEMENT

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

Advisor

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January, 2016

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Acronyms

E-Banking - Electronic banking

NIB - Nib bank

UB - United bank,

WB - Wegagen bank

DB - Dashen Bank

ATM - Automated teller machine

POS - Point of sale

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Abstract

This paper aims to examine adoption of E-banking in the Ethiopian banking industry with respect to the challenges and prospects. The study was conducted based on the data gathered from four private banks in Ethiopia; Dashen bank, Nib bank, United bank and Wegagen bank. A mixed research approach was utilized. The study statistically analyse data obtained from the survey questionnaire. The result of the study indicated that, the major barriers Ethiopian banking industry faces in the adoption of Electronic banking are poor interconnectivity among banks, lack of technical and managerial skills to use and implement the system, lack of trust from customer side, lack of sufficient legal framework national level, lack of competition among local and foreign banks and the absence of government support to enhance and encourage e-banking adoption. Low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet, frequent power interruptions and network failures were also other key challenges. The study also identified basic benefits a firm could attain from the adoption of E-banking system. The observed convenience for the banks and clients were found to be that e-banking saves time, minimizes inconveniences, provides up to date information, increases operational efficiency, minimizes the cost of transaction, and reduces human resource requirements. Further general prospects identified in this study were late adopter opportunities, commitment of the government to facilitate the expansion of ICT infrastructure. The study recommends that NBE needs to establish a clear set of legal frame work, the government should also support the banking industry by investing on ICT infrastructure and setting up a system where banks could get an incentive while adopting new technology. Banks need to be more focused on technological innovation competition rather than traditional bases of retail bank competition.

Key Words: *E-banking, NBE, infrastructure, legal framework, observed convenience*

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Swiftly changing global information infrastructure such as information technology and computer networks for instance the Internet and telecommunications systems have enabled the development of electronic commerce at a global level. Ethiopia has become one of the countries that have been highly influenced by these changes. In the face of rapid expansion of electronic payment (E-payment) systems throughout the developed and the developing world, Ethiopian's financial sector cannot remain an exception in expanding the use of the system (Gardachew 2010, p.2). Banking operations have evolved from the casual exchange of cash, cheques and other negotiable instruments to the application of Information and Communications Technology (ICT) to banking transactions. Through technology, banks are now able to offer convenience services to their customers. Due to this fact a fierce competition among banks has come to exist and banking services have come to a technological boost in the hope that they could leverage it as a competitive advantage. Hence, it is a must for banks to improve on their service quality and offerings. Provision of high quality of service will lead to a higher customer satisfaction which in turn will enhance customer loyalty. Internet has become the main driving force for the development of e-commerce. Customers are increasingly demanding more value, with goods customized to their exact needs, at less cost, and as quickly as possible. To meet these demands, banks need to develop inventive ways of creating value which often requires different IT infrastructures and thinking outside the box while undertaking transactions. This is where E-banking comes handy.

We can see from different E-banking literature some of the difficulties related with its implementation which include low level of internet penetration and poorly developed telecommunication infrastructure. Lack of suitable legal and regulatory framework for E-commerce and E-payment is another obstacle for the adoption of new technology in banking industry. 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). But risks related with security issue, lack of competition among local & foreign banks and social awareness on the E-banking system were not addressed. In order to encourage further E-banking adoption in developing countries, a better understanding of the barriers and drivers impacting E-banking adoption is critical (Zhao et al. 2008)..

However, despite the importance of these adoptions, limited studies are currently available in developing countries, especially in Ethiopia. Therefore, more studies are still required to understand the relevance of E-banking in the country to identify areas in which the country lags behind that inhibit their E-banking adoption and diffusion. Therefore, to address the current gap in the literature, this study is designed to identify the E-banking adoption situation in Ethiopia and commonly focusing on the investigation of factors that affect adoption of E-banking system.

The study will be conducted on four selected private banks operating in Ethiopia which include Dahsen bank, United bank, Wegagen bank and Nib bank. These banks were selected based on the fact that one of them was a forerunner in introducing the technology and the rest have already implemented most of the E-banking systems as part of their operations. Furthermore, on a pre-assessment that was done on these banks the researcher found that these banks have great number of users of their E-banking services.

Therefore, this study is designed to examine the E-banking adoption current situation in Ethiopia and investigates the challenges and prospects of adopting E-banking system in Ethiopia and recommend appropriate actions to be taken to promote E-banking system in the country.

1.2 Background of the study area

This section describes the banking environment in Ethiopia with respect to the policy and legal framework under which the banking industry operates. The banking industry in Ethiopia is controlled by the National bank of Ethiopia (NBE) acting as the central bank of the country. There are 19 commercial banks registered under the NBE, these comprises 3 state owned banks and 16

other private commercial banks. Four banks were selected for this study and they are found in the capital city of the country, Addis Ababa.

Addis Ababa is the capital city of Ethiopia and the diplomatic capital of Africa with a population of greater than 3 million. The researcher selected Addis Ababa as a study area for the reason that the head office of each bank and the National bank of the Ethiopia are found in the city. In addition e-banking professionals who have better understanding of the sector are situated at the head office.

1.3 Statement of the problem

When compared with the banking industry operated in developed country, without doubt the banking industry in Ethiopia is underdeveloped and therefore, there is an all immediate need to embark on capacity building arrangements and modernize the banking system by employing the state of the art of technology being used anywhere in the world. With a growing number of import-export businesses, and increased international trades and international relations, the current banking system is short of providing efficient and dependable services (Gardachew 2010).

In E-banking system, information is electronically transmitted over wireless communication channels and the internet. These processes raise issues of how users are authenticated, how integrity of data is maintained and importantly the confidentiality of this data. One of the issues raised with adoption of new technology is Perceived risk or uncertainty about the outcome of the use of the innovation (Gerrard & Cunningham 2003) or uncertainty that the use of the innovation is secure. Uncertainty arises from a predictive validity of the attributes (for example functionality and security) that is, how well users of new technology will predict future performance (Cox 1967). Risk is a subjective determined expectation of loss; the greater the expected probability of loss, the higher the risk perceived (Mitchell 1999), and thus the lower the motivation to adopt an innovation.

Even though E-banking has a lot of benefit in delivering service to customers, in Ethiopia customers missed to enjoy with the technological advancement in banking sector which has been entertained elsewhere in Africa and the rest of the world. This is due to lack of awareness or

competition among banking industries. The modern E-banking methods like Automated teller machine (ATM), Debit cards, Credit cards, Tele banking, Internet banking, Mobile banking and others are new to the Ethiopian banking sectors. E-banking which refers to the use of modern technology that allows customers to access banking services electronically whether it is to withdraw cash, transfer funds, and to pay bills, or to obtain commercial information and advices are not well known in Ethiopia.

Considering the low extent of development of ICT infrastructure in developing countries, when compared with the developed countries E-banking has not really been able to diffuse into society given the low rate of internet access (Banji & Catherine 2004). Therefore this study intended to identify factors that positively or adversely affect adoption of E- banking system based on the research problems discussed above.

1.3 Objectives of the Study

1.3.1 General objective

The general objective of the study is to investigate the challenges and possibilities of adopting Electronic banking services in selected private Banks of Ethiopia. While the specific objectives are as below;

1.3.2 Specific objective

- a.** To find out the current status of e-banking services usage/adoption in the selected private banks
- b.** To assess the added values of adopting e-banking service for the banking industry
- c.** To examine the internal (bank-related) factors affecting the application of e-banking services in Ethiopia.
- d.** To examine the external environmental factors affecting the application of e-banking services in Ethiopia?
- e.** To determine the next steps that must be taken to further facilitate the usage and acceptance of E-banking services

1.4 Research questions

The study attempts to answer the below research questions.

1. What is the current status of E-banking services usage/adoption in the selected private banks?
2. What are the added values of adopting E-banking service for the banking industry?
3. What are the internal factors affecting the application of e-banking services in Ethiopia?
4. What are the external environmental factors affecting the application of e-banking services in Ethiopia?
5. Do security issues have an effect on the penetration of Electronic banking in the country?

1.5 Scope of the study

The study is limited to assess the opportunities and challenges for the adoption of e-banking service of selected private banks in Ethiopia. To keep the consistency of the data gathered and due to their pioneer involvement in the e-banking sector, only data that was acquired from selected private banks was used in this study. It excluded other financial institutions to keep the focus on the banking industry. Moreover, the study focuses only on the assessment of the opportunities and challenges for the adoption of e-banking from the standpoint of the banks.

1.6 Limitation of the study

The focus of this study is on the assessment of the opportunities and challenges for the adoption of e-banking service of selected private banks in Ethiopia. Due to the relative newness of the e-banking concept and technology in Ethiopia, it was very difficult to get a well experienced and knowledgeable expert on the area that could give the researcher a broader perspective on the matter as well as literature in this area from the country perspective on the matter. In addition the researcher also faced financial limitation to conduct comprehensive and detail study of opportunities and challenges for the adoption of e-banking service Ethiopia banking sector by taking large sample.

1.7 Significance of the study

This study will contribute and become an asset in different ways. Firstly, the findings of this study are beneficial not only to banks, but also to the society as a whole. This research is thus a contribution to the growing body of literature on technology adoption in the banking sector of Ethiopia. Furthermore, it advances the body of knowledge on the antecedents of technology and the benefits and challenges of accepting and using E-banking in developing countries. This study gives a unique perspective to the electronic banking sector of Ethiopia as it is an overall study of the E-banking services that are currently being offered by banks in Ethiopia while other researchers have chosen one of the services in the E-banking package. In other words, this study is very useful for two levels including the academic level and the practical level. Thus, the study set out to make contributions to knowledge gap that exists in filling knowledge gap available in our country as such related type of research rarely available. Therefore, it will help in feeling of knowledge gap that has not been addressed so far in this research topic.

Finally, since customers, researchers and bank managers in other developing countries might share identical circumstances faced by Ethiopian banks, it is expected that the results from this study will also help those in other developing countries (neighboring countries) to understand the E-banking adoption prospects and challenges also give them a starting point for their further studies.

1.8 Organization of the paper

The research paper is divided into five chapters. Chapter one presents the introduction part, which contains, back ground of the study, statement of the problem, objectives of the study, scope & limitations of the study and significance of the research paper. Chapter two is the literature review regarding the definition of E-banking and its prospects as well as the Challenges behind the technology. Chapter three shows the research methodology/design, data collection method and sources, sampling technique and methods of data analysis and presentation. The research findings and discussions is presented in chapter four. The final part chapters five summarizes the findings, conclude the paper, and forward some recommendations.

CHAPTER TWO: LITERATURE REVIEW

This chapter presents an overview of the Electronic banking services and will present theoretical and empirical review of literature. The researcher will discuss the history of the banking industry in Ethiopia as well as the progress of E-banking in the country and also try to identify the major challenges and prospects in availing the services by going through different research papers, journals and books.

2.1 Theoretical Review

2.1.1 Concept of E-Banking

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

According to Singh & Malhotra (2004), E-banking can be defined as the deployment of banking services and products over electronic and communication networks directly to customers. These electronic and communication networks include Automated Teller Machines (ATMs), direct dial-up connections, private and public networks, the Internet, televisions, mobile devices and

telephones. Among these technologies, the increasing penetration of personal computers, relatively easier access to the internet and particularly the wider diffusion of mobile phones has drawn the attention of most banks to e-banking. E banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet or mobile phone. Customers access e-banking services using an intelligent electronic device, such as a personal computer (PC), personal digital assistant, automated teller machine (ATM), kiosk, or Touch Tone telephone. Or 'e-banking refers to the provision of retail and small value banking products and services through electronic channels. Such products and services can include deposit-taking, lending, account management, the provision of financial advice, electronic bill payment, and the provision of other electronic payment products and services such as electronic money.

Daniel (1999) in his study on provision of electronic banking in UK described electronic banking as the provision of banking services to customers through Internet technology. Other authors (Daniel, 1999; Karjaluo, 2002a) found out that banks have the choice to offer their banking services through various electronic distribution channels technologies such as Internet technology, video banking technology, telephone banking technology, and WAP technology. The study of Karjaluo (2002a) further found that Internet technology is the main electronic distribution channel in the banking industry. Factors affecting customer acceptance and adoption of internet banking have been investigated in many parts of the world (Williamson, 2006, Daniel 1999). On the other hand, not much has been done on this area concerning electronic banking among commercial banks in Ethiopia. Electronic banking acceptance has gained special attention in academic studies during the past five years as, for instance, banking journals have devoted special issues on the topic (e.g. Karjaluo et al., 2002) there are two fundamental reasons underlying electronic banking development and diffusion. First, banks get notable cost savings by offering electronic banking services. It has been proved that electronic banking channel is the cheapest delivery channel for banking products once established (Sathye, 1999; Robinson, 2000). Second, banks have reduced their branch networks and downsized the number of service staff, which has paved the way to self-service channels as quite many customers felt that branch banking took too much time and effort (Karjaluo et al., 2003). Therefore, time and cost savings and freedom from

place have been found the main reasons underlying electronic banking acceptance. Several studies indicate that online bankers are the most profitable and wealthiest segment to banks (Robinson, 2000, Nyangosi, 2006). Electronic banking thus offers many benefits to banks as well as to customers. However, in global terms the majority of private bankers are still not using electronic banking channel. There exist multiple reasons for this. Foremost, customers need to have an access to the internet in order to utilize the service. Furthermore, new online users need first to learn how to use the service .Secondly, nonusers often complain that electronic banking has no social dimension, i.e. you are not served in the way you are in a face-to-face situation at branch (Mattila et al., 2003). Finally, customers have been afraid of security issues (Sathye, 1999). However, this situation is changing as the electronic banking channel has proven to be safe to use and no misuse has been reported by the media in Finland.

Many factors influence the adoption of electronic banking and it is important to take these factors into account when studying consumer attitudes towards electronic banking. These include:

I. Effect of perceived ease of use on intention to adopt and use E-Banking.

Consumers will seek out those financial products and suppliers which offer the best value for money and they are educated about it. Hence, for adoption of electronic banking, it is necessary that the banks offering this service make the consumers aware about the availability of such a product and explain how it adds value relative to other products of its own or that of the competitors. An important characteristic for any adoption of innovative service or product is creating awareness among the consumers about the service/product (Sathye, 1999)

ii. Awareness Of services and its benefits. The amount of information a customer has about electronic banking and its benefits may have a critical effect on its adoption. Moreover, Sathye (1999) notes that low awareness of Internet Banking is a critical factor in causing customers not to adopt internet banking

iii. Perceived risk. Perceptions of risk are a powerful explanatory factor in consumer behavior as individuals appear to be more motivated to avoid mistakes than to maximize purchasing benefits .The construct Perceived Risk reflects an individual's subjective belief about the possible negative consequences of some type of planned action or behavior due to inherent uncertainty.

iv. Quality of Infrastructure. Quality of the internet connection is seen to be an essential component of any internet-based application. Sathye (1999) used internet access as one of the factors affecting the adoption of Internet Banking. Without a proper internet connection the use of electronic banking is not possible.

v. Trust. Customer attitudes towards electronic banking are driven by trust, which plays an important role in increasing usability within the electronic banking environment. The issue of trust is more important in online as opposed to offline banking because transactions of this nature contain sensitive information and parties involved in the financial transactions are concerned about access to critical files and information transferred via the internet.

vi. Demographic Characteristics. Many studies have investigated the effects of customers' demographic characteristics such as age gender, income and educational level on their attitude towards different banking technologies and individual acceptance of new technology. Literature shows that there is a strong relationship between age and the acceptance of new technologies. Older customers tend to have negative attitude towards technology and innovations. On the other hand, younger adults are seen to be more interested in using new technologies, like the internet to conduct activities such as looking for new products and product information to compare and evaluate their options.

Another demographic factor of interest is income. Income has been shown to potentially exert a strong effect on the adoption and diffusion of technology. Older individuals between 26 and 45 are over-represented in categories of higher income, higher occupational positions, and higher educational qualifications (Venkatesh and Morris, 2000). Studies have found that there is a difference between the males and females in using various types of technology (Burke, 2002; Li et al., 1999). Venkatesh and Morris (2000) investigated gender differences in the context of individual adoption and sustained usage of technology in the workplace, and found gender an important determinant of short-term usage, and can be used to predict sustained usage behavior in individual adoption and continued usage of technology in work places. Education also plays a significant role with regards to attitude toward technology use. Higher educated customers such as university graduates are more comfortable in using technology, like the internet or internet banking. A reason for this is that education is often positively correlated with an individual's level of Internet literacy (Burke, 2002).

2.1.1.1 E-Banking Channels:

The channels used in order to avail e-banking services are listed as below:-

I. Internet banking

According to Booz, Allen & Hamilton (1999), “Internet banking” refers to systems that enable bank customers to access accounts and general information on bank products and services through a personal computer (PC) or other intelligent device. Internet banking products and services can include wholesale products for corporate customers as well as retail and fiduciary products for consumers. Ultimately, the products and services obtained through Internet banking may mirror products and services offered through other bank delivery channels. Some examples of wholesale products and services include: Cash management, wire transfer, automated clearinghouse transactions, Bill presentment and payment.

Examples of retail and fiduciary products and services include Balance inquiry, Funds transfer, Downloading transaction information, Bill presentment and payment, Loan applications, investment activity, other value-added services.

II. Mobile Banking

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

recharging; commercial payment processing; bill payment processing; peer to peer payments; withdrawal at banking agent and deposit at banking agent (Rahman, 2006).

III. 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).

IV. Home Banking

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

V. Point of Sale Terminal

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

2.1.1.2 Typical Security Technologies Applicable to Control System Networks

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

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

Intrusion Detection and Protection: its appliance provides a more advanced layer of defense. Such defense (known as intrusion prevention system) can be deployed to help prevent attacks, or simply to detect attacks using intrusion detection systems. Information is sent through the network in

small blocks of data known as packets. It goes deeper than a firewall by assessing each packet based on the network protocols, the context of the communication, and its tracking of each session (the time the user spends communicating on the network). Akin to antivirus software on a desktop, it contains a large repository of signatures that help to identify potential attacks by matching attempts to exploit known vulnerabilities.

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

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

Encryption of Critical Data: Encryption is the process of transforming information, such as a document or important message, by using an algorithm or cipher to make it unreadable to anyone who does not have the key to the cipher. It is a standard method for protecting highly confidential information.

2.1.2 Banking History in Ethiopia

A reference to the Ethiopian history reveals that the first bank in the country, Bank of Abyssinia was founded during the reign of Emperor Menelik II in February 1905. Due to a foreign domination of its management (mainly the British), the then Bank of Abyssinia was forced to dissolve and in its place was established the Bank of Ethiopia in 1931 whose management was still

left to foreigners due to the then lack of skilled manpower in the country. The Bank of Ethiopia was later replaced by the State Bank of Ethiopia soon after the war with Italy. The latter was the first bank in the country fully controlled and owned by the Ethiopian government. In the meantime, however, a number of foreign banks had opened their branches in the country, most of them with an interest to have control over the nation's economy. It was the State Bank of Ethiopia that gave rise to the present Commercial Bank of Ethiopia (CBE) and National Bank of Ethiopia (NBE). During the Dergue reign, CBE had remained as the only participant in the country's commercial banking sector. However, following the 1991 takeover by the present government and accompanying encouragement of private investment, a number of private banks have emerged in the country's financial sector. Accordingly, Monetary and Banking proclamation No.83/1994 and the Licensing and Supervision of Banking Business No.84/1994 laid down the legal basis for investment in the banking sector. Consequently, shortly after the proclamation the first private bank, Awash International Bank was established in 1994 by 486 shareholders and by 1998 the authorized capital of the Bank reached Birr 50.0 million. Dashen Bank was established on September 20, 1995 as a share company with an authorized and subscribed capital of Birr 50.0 million. 131 shareholders with subscribed and authorized capital of 25.0 million and 50 million founded bank of Abyssinia. Wegagen Bank with an authorized capital of Birr 60.0 million started operation in 1997. The fifth private bank, United Bank was established on 10th September 1998 by 335 shareholders. Nib International Bank that started operation on May 26, 1999 with an authorized capital of Birr 150.0 million. Cooperative Bank of Oromia was established on October 29, 2004 with an authorized capital of Birr 22.0 million. Lion International Bank with an authorized capital of Birr 108 million started operation in October 02, 2006. Zemen Bank that started operation on June 17, 2008 with an authorized capital of Birr 87.0 million. Oromia International Bank that started operation on September 18, 2008 with an authorized capital of Birr 91 million. In addition, recently Buna international bank and Birhan international bank are started operation in the country (NBE, 2009).

2.1.3 Review of Commercial Banking Practices in Ethiopia

Ethiopia has 19 banks, of which 16 are privately owned, and they form the country's main financial institutions. Access to financial services has been improving and the total number of bank branches

reached 2 208 in 2014 (about 34% of which are located in Addis Ababa), bringing the ratio of bank branches to population from 49 675 to 39 834. The total capital of the banking system is ETB 25.6 billion (USD 1.28 billion), of which private banks account for 53.9%. The Commercial Bank of Ethiopia, the biggest state-owned bank, accounted for 34.2% of the total capital of the banking system. Ethiopia's banking sector is stable and sound. According to the IMF, the system-wide capital adequacy ratio stood at a comfortable 17.5%, (well over the 8% requirement). Return on assets and return on equity showed solid performance, at 3.1% and 44.6%, respectively. The NBE regularly monitors adherence to Basel I capital adequacy requirements, and virtually all commercial banks have risk adjusted capital adequacy ratios well above the minimum requirement. The loan portfolio of banks also continues to be sound and the ratio of non-performing debt is currently below the 10% target (at about 2.1%). Growth in deposits has been robust and the share of savings and time deposits in total deposits has risen.

However, the financial sector remains shallow with a limited range of services. The financial sector remains closed to foreign participation and capital markets are non-existent. Lending is mainly collateral based and the vast majority of small entrepreneurs lack the necessary collateral.

According to the 2014/15 Global Competitiveness Report, Ethiopia scored 3.3 out of 10 and ranked 120th out of 144 countries in financial market development, lower than the average of "factor driven economies". In Doing Business 2015, Ethiopia continues to underperform with respect to Getting Credit (165th out of 189 countries). (UNDP, 2015)

2.1.4 E-Banking System in Ethiopian 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 ATM to deliver service to the local users. In addition to eight ATM Located in Addis Ababa, CBE has had Visa membership since November 14, 2005. But, 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. Dashen's ATM is 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 2011 the payment card services have witnessed significant strides, Dashen's ATM service expanded to 70 and 704 POS terminals (Annual report of the bank 2011). 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 5,000 birr in cash and can buy goods and services up to 8,000 to 13000 birr per day.

Expanding its leadership, Dashen Bank has begun accepting MasterCard in addition to Visa cards. Dashen won the membership license from MasterCard in 2008. Harnessing its leadership with advanced banking technology, Dashen Bank signed an agreement with Very, a South African E-payment technology company, for the introduction of mobile commerce in April 21, 2009. According to the agreement, iVery Payment Technologies has licensed its Gateway and MiCard E-payment processing solution to Dashen Bank. Dashen's Modbirr users can transfer 500 birr to other Modbirr users in 24 hours a day. This would make Dashen Bank the first private bank in Ethiopia to acquire E-commerce and mobile merchant transactions (Amanyehun 2011). Although Dashen's new technology is one step ahead in that it allows transfer of funds from one's account to others, the first ever E-banking gateway was signed between Ethiopian Commodity Exchange (ECX) and Dashen Bank and CBE. The E-banking system being developed with both banks is designed to give a secure electronic data sharing gateway between clients, banks and ECX, by facilitating a smooth transaction (Abiy 2008) By the end of 2008 Wegagen Bank has signed an agreement with Technology Associates (TA), a Kenyan based information technology (IT) firm, for the development of the solutions for the payment system and installation of a network of ATMs on December 30, 2008 Journal of Management Information System and E-commerce Vol. 1, No. 1; June 2014 5 ©American Research Institute for Policy Development www.aripd.org/jmise Zemen Bank, the only Ethiopian bank anchored in the idea of single branch banking, by launching full-blown internet banking, a service which is new to Ethiopian banking industry in the year 2010.

The bank tested the venture through its first phase of the online service, and now it is already started the full-fledged version, which enable customers to make online money transfer freely. Previously, the online banking service, delivered by the bank, only gave access to bank statements and exchange rate information. The new and never-been-tried service proposed by the bank is to include free account money transfer, corporate payroll uploading system where employers could upload payroll to the system and make payments to individual worker's accounts online and online utility bill settlement system, when utility companies are ready(Asrat 2010). 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 Fettan ATM network. If everything goes as planned, Fettan ATM will install over 140 ATM machines and over 340 POSs across Ethiopia. There will be one ATM at every branch of the consortium banks, all domestic airports serviced by Commercial service, shopping complexes and merchants. 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).

2.2 Empirical Evidence

Some related studies are conducted by different researchers in different parts of the world. However, 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.

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 employ 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.

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 were used 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 Ebanking 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 Ebanking in the growth phase of an emerging market has an important correlation with the improvement of commercial performance.

The other descriptive case study analysis conducted by Khalfan *et al* (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.

The study of Shah *et al.* (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, 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 and systems integration and enhanced customer services were next in the list of importance.

Gerrard *et al.* (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). The study of Kerem (2003) on the adoption of electronic banking: underlying consumer behaviour 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 and foremost better access to the services (convenience), better prices and higher privacy. Better service (i.e. preferring self-service over 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.

2.2.1 Challenges and prospects of E-Banking Adoption

Challenges

According to M. M. Rahman (2008) in Bangladesh despite huge demand from the business community as well as the retail customers particularly the urban customers, electronic banking (e-banking) is still at a budding state due mainly to a number of constraints such as unavailability of a backbone network connecting the whole country; inadequacy of reliable and secure information infrastructure especially telecommunication infrastructure; sluggish ICT penetration in banking sector; insufficient legal and regulatory support for adopting e-banking and so on. The concept of e-banking includes all types of banking activities performed through electronic networks. It is the most recent delivery channel of banking services, which is used for both business-to-business and business-to-customer transactions. However, in true sense, e-banking includes activities like payment of bills and invoices, transfer of funds between accounts, applying for a loan, payment of loan installments, sending funds to third parties via emails or internet connections regardless of where the client is located. Leow, Hock Bee (1999) state that the terms PC banking, online banking, Internet banking, telephone banking or mobile banking refers to a number of ways in which customer can access their banks without having to be physically present at the bank branch.

Therefore, e-banking covers all these ways of banking business electronically. Since e-banking offers some smart services benefiting both banks and customers compared with traditional banking system, it has become imperative to make necessary room for banks to flourish e-banking. Among others, attractiveness of e-banking includes: it lowers transaction cost; provide 24-hour services; ensure increased security and control over transactions; reduces fraud risk; performs higher volume of transactions with less time; increases number and volume of value payment through banks; allows remote transactions facilities that replace physical presence of a customer in a bank branch and; increases transaction speed and accuracy. On the other hand, traditional banking is time-consuming and more costly and therefore, e-banking is replacing traditional banking all over the world. In addition, an exploratory study that was conducted in Zimbabwe by Chitura Tofara (2008) indicated that incompatibility with the existing system, cost of implementation, security concerns, lack of expertise, inadequate legislation and consumer acceptance are the major challenges for the adoption of e-banking in the country's banking industry.

Prospects of e-Banking

According to M., M Rahman (2008) in Bangladesh e-banking is now a global phenomenon. Apart from the developed countries, the developing countries are experiencing strong growth in e-banking. The government's emphasis on setting up ICT park, raising allocation for developing ICT infrastructure, waiving taxes on computer peripherals and other measures including the automation program of banking sector and competition among the scheduled banks in improving customer services have accelerated the prospects of e-banking. In addition, as investigated by Alhaji Ibrahim H. (2009) using exploratory study, the following are among the critical challenges for the adoption of e-banking in developing countries:

- Lack of Technological Infrastructure – the implementation of e-payment is been impeded by unavailability of ICT infrastructure. Most rural areas where majority of small and medium scale industries are concentrated have no access to internet facilities
- ICT Equipment Costs – where available, the cost of ICT is a critical factor relative to per capital income. This makes the cost of entry higher compared to developed countries.
- Regulatory and Legal Issues – inexistence of proper legal and regulatory framework.

- Non-readiness of banks and other stake holders (acceptability) – even though some have shown impressive willingness, some banks are still not fully ready to for this new payment regime.
- Resistance to changes in technology among customers and staff due to:
 - Lack of awareness on the benefits of new technologies,
 - Fear of risk among banks
 - Lack of trained personnel in key organizations and
 - Tendency to be content with the existing structures
- People are resistant to new payment mechanisms
- Security – where disclosure of private information, counterfeiting and illegal alteration of payment data may be rampant.
- Frequent connectivity failure in telephone lines
- Frequent power interruption

2.2.2 Perceived advantages that Initiate Banks to Adopt E-Banking

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

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

The second construct: Perceived Organizational Performance is associated with how much a bank manager thinks Internet technology could improve their organizational performance. Three issues: profitability; market environment and employee productivity were utilized to explore this construct in depth. From the broad question related to profitability, two impediments are indicated: high technology investment cost and the need for economies of scale for Internet technology use are inhibiting the rate of E-banking adoption.

Productivity of employees was another issue of interest. Most respondents expected that their business efficiency could be improved on the Internet.

The third construct: Perceived Customer/Organizational Relationship relates to how a bank manager perceives Internet technology adoption in terms of improving the relationship with their customers. In the literature, three major issues emerge related to the perception of customer/organizational relationship: customer trust, customer commitment, and customer satisfaction.

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

2.2.3 Drivers and Barriers of E-Banking Adoption

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

In addition to the above factors, the case study that was conducted in china by Sherah Kurnia, Fei Peng, Yi Ruo Liu (2005) suggests that the government support is also a strong driver for e-banking adoption. The government support is manifested in two ways. Firstly, the Government is establishing an electronic commerce (EC)-friendly environment in the country.

The government in recent years to revamp the national ICT and logistic infrastructures has committed heavy investments. New EC laws and regulations have also been passed and adjusted to provide legal protections for EC activities in general. Secondly, the government also directly offers financial incentives to promote e-banking adoption.

2.2.4 Constraints and Drive Forces for the Adoption of E-Banking in Africa

The study that was conducted by Isaac Awuondo (2005) indicated that the Constraints and drive forces for the adoption of e-banking in Africa respectively are presented below:-

Constraints

- Security: Majority of the shy away from e-Banking services due to security concerns.
- Human face: According to some analysts, customers still value personalized and responsive services from their bankers.
- Poor and/or lack of technological infrastructure especially in the rural areas.
- Lack of proper legislation governing e-transactions.
- Preference to paper money, as opposed to “virtual” cash in transactions etc

Drive forces towards e-Banking adoption in Africa

- Rapidly changing customers’ needs and preferences
- Competitive forces and product differentiation strategies
- Pressure to reduce transactional and operation costs

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 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 factors influencing adoption of E-banking in Ethiopian banking industries by using questionnaires and interview conducted with managers of the selected banks.

CHAPTER THREE: RESEARCH DESIGN/ METHODOLOGY

3. Introduction

Designing appropriate research methodology is a prerequisite in order to conduct a good research work. Many researchers have written extensively on research methodology. The underlying factor in most studies on research methodology is that the selection of methodology is based on the research problem and stated research questions. Methodologies cannot be true or false, only more or less useful (Silverman, 2001). Accordingly, this chapter discusses about the methodology by which the researcher used to conduct this study. Thus, research design, background of the study area, sampling, data source and method of collection and method of data analysis are presented below respectively.

3.1 Research design/approach

According to Yin (1994) exploratory research is designed to allow a researcher to just look around with respect to some phenomenon, with the aim to develop suggestive ideas. Exploratory research is often used when a problem is not well known, or the available knowledge is not absolute. Therefore, in conducting this research on prospect and challenges of E-banking in the case of selected private banks, the research has used exploratory type of research design approach which enabled the researcher to discover ideas that may be potential opportunities and challenges.

Furthermore, In order to achieve the objective of this study and answer the research questions the researcher adopted mixed research approach to examine the Hurdles and drivers of adopting E-banking in Ethiopian banking industry to converge across qualitative and quantitative methods. Employing this approach is used to neutralize or cancel the biases of applying any of a single approach and a means to offset the weaknesses inherent in a single method with the strengths of the other method (Creswell 2003). Mixed research approach opens door to multiple methods of data collection and helps to generate the findings to a population and develop a detailed view of the meaning of a phenomenon or concept for individuals (Creswell, 2003; pp. 12-22).

In this study, Concurrent procedure is employed to triangulate quantitative and qualitative data to provide a comprehensive analysis of the research problem. Moreover, researcher 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).

3.2 Sampling

Currently there are more than 19 banking institutions in Ethiopia, both private and public which are in operation. Only private banks were included in this study. Among the 16 private banks currently under operation, the researcher selected four banks using Purposive sampling technique, which means the selection of the banks was made in a way that the researcher could get sufficient data regarding e-banking. These banks include Dashen bank, United bank. Wegagen bank and Nib bank. Initially, these banks were selected after considering their service years. Only banks that have been in the banking industry for more than 15 years were considered in this study.

The researcher decided to examine the entire population (i.e., the total population) that are working in the e-banking department of each bank and employees with hands on experience on e-banking. The entire population was chosen because the size of the population is very small. Therefore, if a small number of units were not included in the sample, it may be felt that a significant piece of the puzzle was missing. Accordingly, questionnaires were distributed to 60 employees who are currently working in the e-banking department of these banks.

Regardless of the strategy or strategies adopted for a study, and/or the sample size you plan for, you need to provide a rationale for your choices by articulating the expected benefits and weaknesses of any strategy/sample size you choose (Abdulkadir, 2014). When you decide size for sample in qualitative researches, it is important to keep in mind that there is no one direct rules. However, we have to consider the sample sizes that reach saturation or redundancy. In other words, you might conduct interviews, and after eleventh one, realize that there are no new concepts emerging. And, in the second place large enough sample in order to assess an appropriate amount of diversity. Qualitative research typically starts with a specific group, type thus the goal is credibility, not representativeness or the ability to generalize, (Nastasi, 2004). Consequently, the

researcher selected units that are convenient, close at hand, easy to reach. As it is new product as a whole in Ethiopian market, the researcher only considered who have the exposure/experience and expertise so far in this business and was found to contribute significantly to the finding. Accordingly the researcher used convenience sampling technique in the selection and was able to interview a total of 6 professionals in the field which include different e-banking product managers of these four private commercial banks, an expert from NBE and a senior manager of business development department of e-banking system provider (Cash link system providers).

3.3 Data source and method of collection

The study will be conducted by collecting data from both primary and secondary sources. Primary data will be collected from the respondents based on a structurally designed questionnaire. It will include both closed ended and open-ended questions.

Any time a researcher or decision-maker needs to gain greater insight into a particular problem, he or she is likely to question knowledgeable individuals about it. This is usually done through an informal, free-flowing conversation with anyone who is believed to be able to shed light on the question both within the organization and outside, and it is common in the exploratory type of research (Abdulkadir, 2014). In similar manner in this research the researcher has used similar approach of structured and unstructured key informant interview by identifying professionals in the field. Accordingly the researcher was able to interview six professionals in the sector. And the researcher was able to refer NBE directive No. FIS/01/2012, financial institutions call for expression of interest, expressions of interest, request for proposal and draft operation, policy and procedure and also visited the websites of each banks. Therefore, the researcher was able to gather data both from primary sources and secondary sources of data collection.

3.4 Method of Data analysis

Quantitative research techniques generate a mass of numbers that need to be summarized, described and analyzed. However, many quantitative research projects would never need to go that far; the question would be answered by simple descriptive statistics (Lacey and Luff, 2001).

Accordingly the data obtained from survey was analyzed by using descriptive statistics, statistical package for social science (SPSS) and descriptive type of analysis is presented by using tables and percentages analyze each objective. Furthermore, In order to meet the stated research objectives, the collected qualitative data was also analyzed based on the nature of the objective.

CHAPTER FOUR: RESULT AND DISCUSSION

4. Introduction

As it is discussed in the methodology part of this study, data collected by using different techniques were analyzed in this chapter. As seen in table 4.1 a total of 60 questionnaires were distributed to four purposely sampled private commercial banks (Dashen bank, United bank, Nib banks and Wegagen bank) e-banking department staffs. Out of the total 60 questionnaires, 46 questionnaires were obtained (76.6% response rate). In addition to questionnaire, the researcher conducted an interview with E-payment/e-banking managers and other professionals from system providers and NBE. Some bank documents regarding E-banking system were also investigated. In order to analyze the research results, Statistical Package for the Social Sciences (SPSS) software is used. SPSS is a computer program used for statistical analysis. SPSS fit with quantitative approach and survey strategy which were adopted in this research; SPSS has many features and properties which can provide appropriate results, these results lead to achieve research objectives. 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-payment managers of selected banks results are presented in the following sections.

Table 4.1 sample size for questionnaire

Sample size	60
Successfully returned questioners	46
Response rate	76.6%

Source: Survey result (2015)

4.1 Demographic information of 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 tables shows these differences.

Table 4.1.1 Gender of respondents

Gender	
Female	19
Male	27

Source: Survey result (2015)

Table 4.1.2 Age group of respondents

Age group	
20 – 30 years	22
31 – 40 years	21
41 – 50 years	3
51 – 60 years	0
Total	46

Source: Survey result (2015)

Table 4.1.3 Respondent's educational background

Education level	
Masters	9
University first degree	34
Diploma	3
Total	46

Source: Survey result (2015)

As it is shown on the above three tables, the highest percentage of participants in this study were males who form 27 of respondents. In the case of classification of respondents by age the highest number of participants were young (20-30 years old) who were 22 of total respondents. Regarding

the educational level of the study participants, the highest ratio of them were bachelor degree holders which were 34 of them out of 46 participants.

Table 4.1.4 Length of stay in e-banking operations of respondents in years

Length of stay	Sum	Rate
Below two years	10	21.7%
2-5 years	33	63%
6-10 years	3	15.2%
Total	46	100%

Source: Survey result (2015)

Ten respondents have worked in the e-banking department for less than two years while twenty nine of the survey participants have between two and five years' experience working in e-banking operations, seven of the respondents have between six to ten years work experience.

Table 4.1.5 working positions of the respondents

Recent position	Sum	Rate
Different Managers and division heads	9	19.5%
Reconciliation and settlement officers	8	17.3%
Issuing and Acquiring officers	11	23.9%
IT support and call center	8	17.3%
Senior officers	7	15.2%
Market research and planning officers	3	6.5%
Total	46	100%

Source: Survey result (2015)

From those forty six respondents from the e-banking department of the selected four private commercial banks, nine respondents were managers and division heads of the e-banking department, the researcher also had eight reconciliation and settlement officers as respondents, eleven respondents were issuing and acquiring officers, they were also greater part of questioner

respondents. Another eight were IT support and call center employees while seven respondents were senior officers and the least respondents were market research and planning officers.

4.2 Analysis of responses related with challenges of adopting E-banking system

Although there are many associated benefits with the adoption of E-banking, there are many reasons which obstruct implementation of the system. In case of Ethiopian banking industries, many private banks still using old banking system and are not taking full advantage from electronic banking facilities. In the following sections the researcher has made an effort to analyze the external, internal, infrastructural and security factors that can affect the adoption of E-banking.

Statistics

For all Variables

N	Valid	46
	Missing	0

Frequency Table

Table 4.2.1 Existence of plain ground to get license to be involved in E-banking services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	18	19.6	39.1	39.1
	Agree	18	19.6	39.1	78.3
	neutral	9	9.8	19.6	97.8
	Disagree	1	1.1	2.2	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

Regarding the existence of plain ground to get license to be involved in E-banking services, 39% of the respondents strongly agreed, 39% of the respondents agreed, and 19.6 % of the respondents

were neutral and only 2.2% of the respondents disagreed that there is a plain ground to get license to be involved in e-banking services.

As the data explains there is smooth process to get permission to involve in the provision on the service.

Table 4.2.2 Lack of trust is considered as barriers to the growth of e-banking

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	10	10.9	21.7	21.7
Agree	25	27.2	54.3	76.1
neutral	6	6.5	13.0	89.1
Disagree	5	5.4	10.9	100.0
Total	46	50.0	100.0	

Source: Survey result (2015)

On the subject of lack of trust as a barrier for growth of e-banking, 21.7% of the respondents strongly agreed, 54.3% of the respondents agreed, 13% of the respondents were neutral, 10% of the respondents disagree.

There is lack of trust from customers, which implies that this lack of trust in new technologies such as e-banking is one of the barriers to the growth and implementation of the services.

Table 4.2.3 Existence of sufficient legal framework

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	6	6.5	13.0	13.0
Agree	17	18.5	21.2	50.0
neutral	12	13.0	26.1	76.1
Disagree	10	10.9	37	97.8
Strongly Disagree	1	1.1	2.2	100.0
Total	46	50.0	100.0	

Source: Survey result (2015)

As shown in the table above 13% of the respondents strongly agreed, 21.2% of the respondents agreed, 26.1% of the respondents were neutral, 37% of the respondents disagree and only 2.2% of the respondents strongly disagreed. Which implies that a sufficient legal framework does not exist in the country for the regulation and implementation of e-banking services.

Table 4.2.4 Lack of competition among local bank and foreign banks

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	15	16.3	32.6	32.6
Agree	11	12.0	23.9	56.5
neutral	7	7.6	15.2	71.7
Disagree	11	12.0	23.9	95.7
Strongly Disagree	2	2.2	4.3	100.0
Total	46	50.0	100.0	

Source: Survey result (2015)

Regarding lack of competition among banks, 32% of the respondents strongly agreed, 23.6% of the respondents slightly disagreed, 15.2% of the respondents were neutral, and 23% of the respondents disagreed while only 4.3% disagreed. As shown on the data, lack of competition is a barrier to the advancement of e-banking in the country. Similarly, an interview result revealed that, Ethiopian government did not allow foreign banks to operate in the country, these is due to protecting of local banks from the well-developed foreign bank competition. Therefore, Ethiopian banking industry did not consider about competition with foreign banks and such policies could discourage banking sector of the country from the adoption and expansion of E-banking system/services.

Table 4.2.5 Government support could positively affect customer's willingness to use services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	11	12.0	23.9	23.9
	Agree	16	17.4	34.8	58.7
	neutral	13	14.1	28.3	87.0
	Disagree	4	4.3	8.7	95.7
	Strongly Disagree	2	2.2	4.3	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

On the topic of government support, 23.9% of the respondents strongly agreed, 34.8% of the respondents agreed, 28.3% of the respondents were neutral, 8.7% of the respondents disagree and only 4.3% of the respondents strongly disagreed. This shows us that government support would positively affect customer's willingness and trust towards using the services provided.

Table 4.2.6 Banks charge for E-banking services is relatively higher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	1	1.1	2.2	2.2
	Agree	4	4.3	8.7	10.9
	neutral	3	3.3	6.5	17.4
	Disagree	22	23.9	47.8	65.2
	Strongly Disagree	16	17.4	34.8	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

The above table shows that 2.2% of the respondents strongly agreed, 8.6% of the respondents agreed, 6.5% of the respondents were neutral while 47.6% of the respondents disagreed and 34.4% of them strongly disagree with the notion. This shows us that the banks charge for provision of the service is relatively low.

Table 4.2.7 E-banking has highly increased investment costs for banks in Ethiopia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	2	2.2	4.3	4.3
	Agree	14	15.2	30.4	34.8
	neutral	3	3.3	6.5	41.3
	Disagree	19	20.7	41.3	82.6
	Strongly Disagree	8	8.7	17.4	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

With regards to investment costs of the banks 4.3% of the respondents strongly agreed, 30.4% of the respondents agreed, 6.5% of the respondents were neutral while 41.3% of the respondents disagreed and 17.4% of them strongly disagree with the notion. This shows us that banks investment cost for adoption of e-banking is not significant.

Table 4.2.8 Poor interconnectivity among banks on online platforms is a major issue

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	9	9.8	19.6	19.6
	Agree	14	15.2	30.4	50.0
	neutral	12	13.0	26.1	76.1
	Disagree	8	8.7	17.4	93.5
	Strongly Disagree	3	3.3	6.5	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

With regards to poor interconnectivity among banks 19.6% of the respondents strongly agreed, 30.4% of the respondents agreed, 26.1% of the respondents were neutral while 26.1% of the respondents disagreed and 17.4% of them strongly disagree while only 6.5% strongly disagree.

This demonstrates that poor interconnectivity among banks on online platforms is a major issue for the adoption of e-banking.

Table 4.2.9 there is highly integrated technical and functional team dedicated for E-banking products and services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	6	6.5	13.0	13.0
	Agree	15	16.3	19.6	45.7
	neutral	12	13.0	26.1	71.7
	Disagree	9	9.8	32.6	91.3
	Strongly Disagree	4	4.3	8.7	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

Regarding the availability of capable human resource to handle the need of customers, 13% of the respondents strongly agreed, 19.6% of the respondents agreed, 26.1% of the respondents were neutral while 32.6% of the respondents disagreed and 8.7% of them strongly disagree. This demonstrates that there is lack of integration among the teams working on e-banking.

Table 4.2.10 Bank educates customers on how to use E-banking products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	4	4.3	8.7	8.7
	Agree	16	17.4	34.8	43.5
	neutral	14	15.2	30.4	73.9
	Disagree	8	8.7	17.4	91.3
	Strongly Disagree	4	4.3	8.7	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

The above table shows that 8.7% of the respondents strongly agreed, 34.8% of the respondents agreed, 30.5% of the respondents were neutral while 17.4% of the respondents disagreed and 8.7% of them strongly disagree with the notion that banks avail training for customers on usage of e-banking. This shows us that the banks provide training for customers on how to use the services. However, on an interview it was recommended that banks need to provide aggressive training as the level of awareness of customers in Ethiopia is very low.

Table 4.2.11 Adequacy of the marketing activities to promote banks E-banking offerings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	17	18.5	37.0	37.0
	neutral	14	15.2	30.4	67.4
	Disagree	13	14.1	28.3	95.7
	Strongly Disagree	2	2.2	4.3	100.0
	Total	46	50.0	100.0	
Missing	System	46	50.0		
Total		92	100.0		

Source: Survey result (2015)

The above table shows that 37% of the respondents agreed, 30.4% of the respondents were neutral while 28.3% of the respondents disagreed and 4.3% of them strongly disagree with the notion that banks avail training for customers on usage of e-banking. This shows us that the banks have adequate marketing activities to promote E-banking offers.

Table 4.2.12 Internet connection is not good enough to perform online transactions in Ethiopia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	17	18.5	37.0	37.0
	Agree	25	27.2	54.3	91.3
	neutral	2	2.2	4.3	95.7
	Disagree	1	1.1	2.2	97.8
	Strongly Disagree	1	1.1	2.2	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

The above table show that 37% of the respondents strongly agreed, 54.3% of the respondents agreed, 4% of the respondents were neutral while 2.2% of the respondents disagreed and 2.2% of them strongly disagree that there is poor connection in the country.

As seen from the above responses, internet connection provided by the only telecom service provider in the country (Ethio telecom) is insufficient for the delivery of e-banking services. Hence this is one of the major challenges for the adoption and implementation of e-banking services. 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. Which is in line with the findings of this study.

Table 4.2.13 Fast recovery system to handle various complaints and disputes

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	1	1.1	2.2
	Agree	17	18.5	21.0
	neutral	14	15.2	30.4
	Disagree	10	10.9	37.7
	Strongly Disagree	4	4.3	8.7
	Total	46	50.0	100.0

Source: Survey result (2015)

Regarding presence of fast recovery system to handle complaints 2.2% of the respondents strongly agreed, 21% of the respondents agreed, 30% of the respondents were neutral while 37.7% of the respondents disagreed and 8.7% of them strongly disagree.

This shows that banks do not have a fast recovery systems to handle various complaints and disputes raised from customers.

Table 4.2.14 adequate knowledge transfer from the service/technology provider

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	4	4.3	8.7	8.7
	Agree	13	14.1	28.3	37.0
	neutral	11	12.0	23.9	60.9
	Disagree	14	15.2	30.4	91.3
	Strongly Disagree	4	4.3	8.7	100.0
	Total	46	50.0	100.0	
Missing	System	46	50.0		
Total		92	100.0		

Source: Survey result (2015)

The above table show that 8.7% of the respondents strongly agreed, 28.3% of the respondents agreed, 23.9% of the respondents were neutral while 30.4% of the respondents disagreed and 8.7% of them strongly disagree to the view that there is adequate knowledge on e-banking products from the service/technology provider.

This shows that there is insufficient knowledge transfer from service/technology providers to the employees working in the e-banking department.

Table 4.2.15 Network failure is a big challenge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	20	21.7	43.5	43.5
	Agree	19	20.7	41.3	84.8
	neutral	6	6.5	13.0	97.8
	Disagree	1	1.1	2.2	100.0
	Total	46	50.0	100.0	
Missing	System	46	50.0		
Total		92	100.0		

Source: Survey result (2015)

Regarding lack of completion among banks, 43.5% of the respondents strongly agreed, 41.3% of the respondents slightly disagreed, 13% of the respondents were neutral, and 2.2% of the respondents disagreed.

This shows that network failure is another major challenge in the attempt of banks to adopt e-banking services.

Table 4.2.16 Frequent Power Interruptions is a barrier to E-banking service delivery

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	20	21.7	43.5	43.5
	Agree	17	18.5	37.0	80.4
	neutral	5	5.4	10.9	91.3
	Disagree	4	4.3	8.7	100.0
	Total	46	50.0	100.0	
Missing	System	46	50.0		
Total		92	100.0		

Source: Survey result (2015)

The above table show that 43.5% of the respondents strongly agreed, 37% of the respondents agreed, 10.9% of the respondents were neutral while 8.7% of the respondents disagreed.

Frequent Power Interruptions is a barrier to e-banking service delivery. Therefore, discouraging the full implementation of the e-banking products.

Table 4.2.17 lack of software suppliers to implement E-banking products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	4	4.3	8.7	8.7
	Agree	12	13.0	26.1	34.8
	neutral	20	21.7	43.5	78.3
	Disagree	7	7.6	15.2	93.5
	Strongly Disagree	3	3.3	6.5	100.0
	Total	46	50.0	100.0	
Total		92	100.0		

Source: Survey result (2015)

The data collected regarding lack of software providers 8.7% of the respondents strongly agreed, 26.1% of the respondents agreed, 43.5% of the respondents were neutral, 15.2% of the respondents disagree and only 6.5% of the respondents strongly disagreed. Most of the respondents are neutral to whether there is a lack of software providers.

Table 4.2.18 IT staff have the necessary skills to maintain and support the systems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	2	2.2	4.3	4.3
	Agree	18	19.6	39.1	43.5
	neutral	15	16.3	32.6	76.1
	Disagree	9	9.8	19.6	95.7
	Strongly Disagree	2	2.2	4.3	100.0
	Total	46	50.0	100.0	
Total		92	100.0		

Source: Survey result (2015)

The above data shows that 4.3% of the respondents strongly agreed, 39.1% of the respondents agreed, 32.6% of the respondents were neutral, 19.6% of the respondents disagree and only 4.3% of the respondents strongly disagreed.

This shows us that the banks have IT staff that have the necessary skills required to maintain and support the system.

Table 4.2.19 Perception of e-banking as a threat for banks 'employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	5	5.4	10.9	10.9
	Agree	17	18.5	37.0	47.8
	neutral	15	16.3	32.6	80.4
	Disagree	8	8.7	17.4	97.8
	Strongly Disagree	1	1.1	2.2	100.0
	Total	46	50.0	100.0	

Source: Survey result (2015)

The above data shows that 10.9% of the respondents strongly agreed, 37% of the respondents agreed, 32.6% of the respondents were neutral, 17.4% of the respondents disagree and only 2.2% of the respondents strongly disagreed.

This shows us that employees view e-banking as threat for their career advancement.

Table 4.2.20 Security features of E-banking are reliable

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	2	2.2	4.3	4.3
	Agree	23	25.0	21.0	54.3
	neutral	9	9.8	19.6	73.9
	Disagree	10	10.9	50.7	95.7
	Strongly Disagree	2	2.2	4.3	100.0
	Total	46	50.0	100.0	
Missing	System	46	50.0		
Total		92	100.0		

Source: Survey result (2015)

When the security features of e-banking were analyzed 4.3% of the respondents strongly agreed, 21% of the respondents agreed, 19.6% of the respondents were neutral, 50.7% of the respondents disagree and only 4.3% of the respondents strongly disagree that they are reliable.

This shows us that employees are not confident with the security features of e-banking services.

Table 4.2.21 Frauds are easily detected

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	3	3.3	6.5	6.5
	Agree	16	17.4	19.8	41.3
	neutral	15	16.3	32.6	73.9
	Disagree	9	9.8	34.6	93.5
	Strongly Disagree	3	3.3	6.5	100.0
	Total	46	50.0	100.0	
Total		92	100.0		

Source: Survey result (2015)

When the detectability of fraud were analyzed 6.5% of the respondents strongly agreed, 19.8% of the respondents agreed, 34.6% of the respondents were neutral, 21.7% of the respondents disagree and only 4.3% of the respondents strongly disagree that they are detectable.

This shows us that the frauds are easily detected. Therefore, frauds are not a challenge or barrier to the adoption of e-banking.

The researcher also had an interview with different e-banking product managers of these four private commercial banks, an expert from NBE and a senior manager of business development department of e-banking system provider.

4.3 Analysis of Responses on prospects of adopting E-banking products in Ethiopia

On this part of the questionnaire basic prospects of electronic banking adoption are presented, as per questionnaires for E-banking professionals, plenty of points have been raised and discussed, from those points service delivery time of the products is considered as an ultimate benefits of E-banking products, various inconveniences raised by customers in different uses of bank products now seems eliminated and this shows an incremental behavior on those products subscribers. In addition to these points, classic channels of banking services were incapable of operational efficiency, these days E-banking products are now increasing operational efficiencies of the assessed private banks. Also once implemented E-banking products are shown as a least cost ways of banking service delivery by the respondent's perception and day to day business activities. Man power wise, currently E-banking products are considered as a reducer of vast man power requirement which has been involving in day to day business operation of the banks. The service quality which was disfigured because of various internal and external factors are now being improved as a result to properly implemented modern banking channels. Most respondents agreed on the power of E-banking on creating a cashless society which can be recognized as a one factor to minimize the risk of carrying cash. The restricted (bounded) time which was the reflection of old banking is now replaced by a 24/7 access over individual accounts without the restriction of physical & geographical locations. Most respondents reflect their opinion on the commitment of the government to facilitate the expansion of ICT infrastructure & creation of strong banking

industry. As per the response of the participants, government has to do a lot on increasing the adoption of up to date technological outputs regarding modern banking. Finally most of respondents ends with explaining how E-banking now creating better relationship between the bank and its clients.

Therefore, from the above discussion it is possible to conclude that there are good opportunities for the adoption of e-banking service in Ethiopia.

4.4 Analysis of Response from interviews

Summarized response from the e-banking managers and experts for the forwarded questions regarding the challenges of adopting e-banking in the form of interview is presented under.

Most managers answered that customer's attitude towards the adoption of e-banking as a service was not as the banks expected. This was also affirmed with their response to the next question regarding the demand of e-banking in the country. The Mobile, Internet and agent banking division manager of one of the banks mentioned that in their bank only 13% of the customers use e-payment services while the bank expects at least 80% of them to have access to the service. It was mentioned that this occurs mainly due to the fact that customers are change averse and they are not enthusiastic about attempt new products. The second reason that was raised is that lack of awareness of the ease that the technology could offer to customers.

During the interview the researcher forwarded questions regarding the social, Economic and legal barriers to the adoption of E-banking and some of the points raised lack of suitable legal and regulatory framework, lack of government initiation or lack of government prioritization, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet and security issues were the common and main challenges mentioned by the professionals.

Regarding the provision of sufficient electronic banking training to employees, most of the respondents mentioned that sufficient trainings are not arranged for employees. The e-banking

technology is highly dynamic and it is mandatory that employees are well trained on products. This helps banks to provide quick, up to date and secured services to the customer. Furthermore, it was stated that most banks e-banking training is confined only to the ICT personnel's of each bank.

On the interview with the managers and expert in the area the common existing and future opportunities that banks foresee in the e-banking industry which were mentioned include points such as late adopter opportunities, commitment of the government to strengthen the banking industry, assurance of the government to facilitate the expansion of ICT infrastructure, improvement in the banking habit of the society, sustainable economic growth in the country and willingness among banks to cooperate in building infrastructure.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMEDATIONS

The study intended to examine the main challenges and prospects in the adoption of E-banking system in Ethiopia, through adopting mixed research approach. On the other hand, the purpose of this chapter is to outline the summary of findings in section, followed by conclusion and presents some recommendations forwarded.

5.1. Summary of findings

In accordance to the main objective of this study the researcher has identified a number of challenges and prospects in the adoption of E-banking system in Ethiopia. Challenges were investigated from different standpoints such as external factors, internal factors, infrastructural barriers and finally security issues in order to determine the hurdles for the adoption of E-banking system. The external challenges, identified in this study were lack of trust on the technological innovation used by banking industries, lack of sufficient legal framework regarding specific products in e-banking offerings at national level, lack of competition among local and foreign banks and the absence of government support to enhance and encourage e-banking adoption.

Regarding the Internal factors that negatively influence the adoption of e-banking, it was found that poor interconnectivity among banks and lack of technical and managerial skills to use and implement the system is considered as barrier for the adoption of E-banking in the country. In this study financial cost were not considered as barrier for the adoption of E-banking in Ethiopia and it is consistent with the finding of Rasoulina (2006).

In the case of infrastructural barriers, it was found that low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet, frequent power interruptions and network failures. However, lack of software and system providers was not found to be a barrier.

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). In this study it was found that security issues are a major challenge in the in the sector since security features of e-banking are not reliable and frauds are not easily detected by the system. The findings identified under these four factor were also consistent with other studies in different countries, Ghazi and Khalid (2012) & Sathye (1999), both of them found that these are the major barrier for the adoption of E-banking system.

The study also identified basic benefit a firm could get from the adoption of E-banking system. Those benefits were considered as a driving force for the adoption of the system. The benefits were classified based on observed convenience for the banks as well as clients and general usefulness of the system. Regarding the observed convenience for the banks and clients it was found that e-banking saves time, minimizes inconveniences, provides up to date information, increases operational efficiency, minimizes the cost of transaction, reduces human resource requirements, facilitates quick response, improves service quality, minimizes the risk of carrying cash, ends time limit to access bank account and information were all highly agreed upon conveniences. The general prospects identified in this study were late adopter opportunities, commitment of the government to facilitate the expansion of ICT infrastructure.

In general the finding of the study, offer other benefit for the adoption of E-banking, such as enhancing customer satisfaction, reduce the number of customers come to banking hall, increase the productivity of banks, increase reliability and accessibility of banking service, creating good relationship between clients & bank and also used as a better information control.

5.2. Conclusion

Based on the analysis made in chapter four the following conclusions are made on the assessment of the opportunities and challenges for the adoption of e-banking service in Ethiopia. ATM and debit card services, internet banking, mobile banking and other electronic payment systems are at infant stage. The most dominant e-banking channel among those banks, which are currently providing the service is ATM card, which is the first generation of electronic banking channel,

furthermore, only few clients have access to e-banking channel such as internet and mobile banking. Therefore, from this it is possible to conclude that banks are evolving at a very slow rate in adopting new technologies. This is due to low level of ICT infrastructure and lack of legal frameworks at NBE, which can initiate banking industry to implement the system. In addition to the above two basic factors affecting adoption of E-banking in Ethiopia, Result of the study also shows that lack of trust on the use of technological adoption are other major barriers for the system. Lack of competition among local and foreign banks is also another challenge for the adoption of E-banking in the country.

Technical and managerial skills available in Ethiopian banks for the adoption of E-banking are also limited. This is influencing the choice of technology in Ethiopian banks.

On the other hand, the study reveals that the benefits of technological innovation are well known to the banks and represent a formidable force to drive adoption of the system. In general perceived Ease of use is one of the basic benefits for E-banking, in which it enables bank staff to perform banking activities in a simple way. The other driving force for the adoption of the system is perceived usefulness, in which, it is used for time saving and cost reduction. This and the other benefit identified in the study were considered as a very great potential for banks to improve their public image.

In general, the findings of this study offer additional insights into the current E-banking adoption situation and its implications for E-banking growth in Ethiopia as an example of a developing country. Furthermore, the understanding of the barriers to E-banking adoption identified in this study may help to identify the best course of actions to promote its development. It will also be valuable to all banking industries of the country to increase their awareness and understanding of E-banking benefits.

5.3. Recommendations

E-banking system is a new financial evolution in Ethiopia, but it's an important issue, because it has a great impact on the whole banking system, at the same time it's difficult and need a lot of

efforts to be adopted and accepted by the banking industry, so it needs a lot of efforts to succeed. Based on the above conclusion, the researcher recommends the following points:

- For the successful implementation of E-banking system, ICT infrastructure is a major prerequisite so government should support banking sector by investing on ICT infrastructure development
- Since sufficient power supply is mandatory for the uninterrupted and efficient provision of e-banking service, therefore, ongoing effort by the government to address adequate power supply to the country should be encouraged.
- Security risk is the major challenge for the adoption of e-banking service in the banking industry. Therefore, the national bank of the country in collaboration with all banks in the country should prepare typical security technologies applicable to control system networks such as firewall, intrusion detection and prevention etc.
- Banks need to setup continuous training for their employees as the e-banking technology is highly dynamic and employees need to be moving at the same pace as the technology. By training its employee's banks will realize the full benefits of e-banking services both to them and to their customers hence increase the demand for e-banking services.
- In order to successfully facilitate E-banking adoption in Ethiopia, national bank of Ethiopia, (NBE) needs to instantaneously establish a clear and smooth set of legal frame works/directives concerning each product offered under the e-banking package.
- To exploit the benefit of E-banking system, banking industry operated in Ethiopia needs to familiarize their customers with the processes and benefits of the system by offering different trainings through TV or Radio.
- The financial institution should offer e-banking technology specifically internet and mobile banking should come up with an option of support local language to ease communication with the technology and the education should focus in establishing trust on the technology.

- To reduce the bureaucracy constrained in implementation delay NBE should separate licensing from submission, revision and approval documents to be delivered from financial institutions.
- Banks need to carry out marketing research to identify the factors inhibiting e-banking adoption. Very limited research has been carried out in this area. In this regard, banks need to regularly carry out customer surveys so as to understand what their customer's needs are and as they develop their e-banking strategy then they will formulate consumer driven strategies.
- This researcher also suggests that decision makers should consider focusing on the trust, awareness, and confidence of users by enhancing security features, utilizing proper legislation, and the provision of digital receipts without charging them extra or a guarantee for every transaction in order to inspire greater confidence in users of such services and promote a culture of e-banking usage across Ethiopia.

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Appendix: Questionnaires and interview guide.

I. Questionnaires

Saint Mary's University

School of Graduate Studies

Department of Business Administration

QUESTIONNAIRE

Dear respected respondent,

The objective of this questionnaire is to gather first-hand information that will help to assess the challenges and prospects of adopting E-Banking services in Ethiopia in the case of Dashen, Nib, United and Wegagen banks S.C. This study is undertaken as a partial requirement for the completion of the degree of Masters of Business Administration.

All data and information that will be gathered through this questionnaire will be used for the research purpose only and remains confidential. Therefore, you are kindly requested to respond to the questions with utmost good faith, honesty and to the best of your knowledge.

Section I. General Profile (*Please use the blank space for question requiring your exact answer and for the rest of questions put \surd or X that best represent you in the selected box*)

1. Gender: Male Female
2. Age: 20-30 31-40 41-50 51-60
3. Educational Status
 College Diploma University First e
 Master's Degree Other _____
4. How long have you worked in E-banking business operation _____
5. How long have you been in your current E-banking operations _____
6. Your current post? _____

Section II: Questionnaires related with challenges and prospects of adopting Electronic banking system.

Instruction: Below are lists of statements pertaining to Adoption of E-banking. Please indicate whether you agree or disagree with each statement by ticking (\surd) on the spaces that specify your

choice from the options that range from “strongly agree” to “strongly disagree”. Each choice were identified by numbers ranged from 1 to 5.

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

No .	Variable	SA	A	N	D	SD
	I. External Factors	1	2	3	4	5
1	There is a plain ground to get permission and licence to be involved in E-banking services from the concerned government body					
2	Lack of trust is considered as barriers for the adoption of E-banking system in Ethiopia.					
3	Sufficient legal framework which enforce banks to adopt technological innovations are effectively implemented					
4	Lack of competition among local bank and foreign banks					
5	More government support could positively affect customer’s willingness to use E-banking products					
	II. Internal Factors					
6	Banks charge for E-banking services is relatively higher					
7	Electronic banking has increased banking cost and charges for banks in Ethiopia					
8	Poor interconnectivity among banks on online platforms is a major issue raise by customers consuming e-banking services					
9	There is a balanced system between investment costs and service delivery charges					
10	Our bank has high level of interconnectivity with other local correspondent banks on addressing customers issues					
11	There is a highly integrated technical and functional team with in your bank dedicated for E-banking products and services					
12	The bank educates customers on how to use E-banking products					
13	There are adequate marketing activities to promote your banks E-banking offerings					

14	Implementing and expanding E-banking products can be considered as a straightforward operation of the bank					
15	Challenges of electronic banking are manageable in the Ethiopian context					
	III. Infrastructural factors					
16	In the case of using mobile banking, ATM and others, security risk affect users decision to use the system					
17	Internet connection is not good enough to perform online transactions in Ethiopia					
18	Lack of technical and managerial skills on the use technological innovation.					
19	There is fast recovery system to handle various complaints and disputes raised from customers					
20	There is vast number of technical and managerial man power working on E-banking					
21	There is adequate knowledge transfer on your bank E-banking implementation from the service/technology provider					
22	Network failure is a big challenge in offering E-banking services					
23	Frequent Power Interruptions is a barrier to E-banking service delivery					
24	Resistance of employees of banks regarding new technologies					
25	There is lack of software suppliers to implement E-banking products					
26	IT staff have the requisite skills to maintain and support the systems					
27	Perception of e-banking as a threat for banks 'employees					
	IV. Security					
28	Security features of E-banking are reliable					
29	Frauds are easily detected					
30	There is a reliable bank security system to safe guard your customers from hackers and other types of frauds					

Any other challenges? Please specify below:

Part two: Questionnaires related with the drivers of adopting E-banking system in Ethiopia.

	I. Observed convenience for the bank and clients	SA	A	N	D	SD
31	E-banking saves time					
32	E-banking minimizes inconveniences					
33	E-banking provides up to date information					
34	E-banking increases operational efficiency					
35	Increment of educated potential customer					
36	E-banking minimizes the cost of transaction					
37	E-banking reduces human resource requirements					
38	E-banking facilitates quick response					
39	E-banking improves service quality					
40	E-banking minimizes the risk of carrying cash					
41	No time limit to access bank account and information					
	II. General prospects					
42	Late adopter opportunities					
43	Commitment of the government to strengthen the banking industry					
44	Commitment of the government to facilitate the expansion of ICT infrastructure					
45	The existence of high demand for new technology					
46	E-banking creates better relationship between banks and clients					

Any other opportunities that you foresee for E-banking in Ethiopia? Please specify below.

Thank you in advance for your cooperation.

II. Interview

General Interview questions

1. Does the demand for E-banking services show an incremental behavior?
2. What are the existing and future opportunities that banks can attain by adopting E-banking?
3. Do you see any social, Economic and legal barriers to the adoption of E-banking in your institution?
4. Is there any special rule that guide banking industries in implementation of E- banking system?
5. Does your bank provide sufficient E-banking training to employees?
6. What can you say regarding the government's effort towards modernizing the banking industry?
7. What do you think must be done to further facilitate the usage of E-banking services in Ethiopia?