



**ST.MARY'S UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

Assessment of the Opportunities and Challenges for the Adoption  
of E-Banking Service (The case of Commercial bank of Ethiopia)

**By**

**MAHLET ZERIHUN**

June, 2016

Addis Ababa, Ethiopia



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**A Thesis Submitted to the School of Graduate studies of ST MARY UNIVERSITY in Partial  
Fulfillment of the Requirements for the Degree of Master of General Business  
Administration**

**By**

**Mahlet Zerihun**

**Advisor:**

**Temesgen Belayneh**

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## **ACRONYMS**

ATM	Automated teller machine
CBE	Commercial bank of Ethiopia
AVR	Automated voice response
CSFs	Critical success factors
E-banking	Electronic banking
E-commerce	Electronic commerce
ECX	Ethiopian commodity exchange
NBE	National bank of Ethiopia
EFT	Electronic fund transfer
E-payment	Electronic payment
ICT	Information communication technology
IT	Information technology
PC	Personal computer
PDA	Personal digital assistance
PEOU	Perceived ease of use
POS	Point of sale
PIN	Personal identification number
PSBs	Public service banks
PU	Perceived usefulness
SMS	Short message service
SPSS	Statistical package for social science
TA	Technology associates
TAM	Technology acceptance model
TOE	Technology organization environment



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## ABSTRACT

*Despite the growth of e-banking adoption worldwide, Ethiopian banks continue to conduct most of their banking transactions using traditional methods. The objective of this paper to examine adoption of E-banking in the commercial bank of Ethiopian banking industry with respect to the challenges which can influence firms from taking advantage of E-banking system and expected opportunity derived by adopting the system. To acquire the intended information the researcher use different data collection instruments like distributing questionnaire, conducting interview. The questionnaire types are both open-ended and close-ended. The study was conducted based on the data gathered from the selected branches of the bank. The collected data was analysed by using descriptive analysis such as tables and percentages. A research framework developed based on technology-organization-environment framework and Technology acceptance model to guide the study. The different e-banking channels by which bank is using to provide these services to the customer are ATM card, point of sale , visa card, master card, Internet banking and Mobile or SMS banking, are among the benefits of adopting the system from the viewpoint of the bank. Among the different opportunity that initiate banks to adopt e-banking services: desire existence of high competition in the banking industry, desire to improve organizational performance, desire to reduce transaction cost, desire to cover wide geographical area, and desire to build organizational reputation are among others. Chances of risk, Lack of suitable legal and regulatory framework, absence of financial networks that links different banks, Low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet, security concerns are among the major challenges for the adoption of e-banking service in the country. However, late adopter opportunities, improvement in the banking habit of the society, commitment of the government to facilitate the expansion of ICT infrastructure and willingness among banks to cooperate in building infrastructure are the major opportunities for the adoption of the system in the banking industry.*

Keywords: - (E-Banking, opportunity and challenges, Technology organization environment, chance of risk, perceived usefulness, perceived ease of use)

# CHAPTER ONE

## Introduction

As an introduction of the study, this chapter presents: background of the study, statement of the problem, research questions, research objective, scope of the study, limitation of the study, significance of the study, research and organization of the whole paper respectively.

### 1.1 Background of the Study

Financial services industry has recently been open to historic transformation, it can call developments are emerging and advancing rapidly in all areas of financial intermediation and financial markets: E-finance, E-money, electronic banking (E-banking), E-brokering, insurance, and E-exchanges. The new information technology (IT) is turning into the most important factor in the future development of banking, influencing banks' marketing and business strategies. In recent years, the adoption of e-banking began to occur quite extensively as a channel of distribution for financial services due to rapid advancement in IT and intensive competitive banking markets. The driving forces behind the rapid transformation of banks are influential changes in the economic environment: Innovations in information technology, innovations in financial products, the dynamic nature of customers demand, liberalization and consolidation of financial markets, deregulation of financial inter-mediation etc. These and other factors make it complicated to design a bank's strategy, which process is threatened by unforeseen developments and changes in the economic environment and therefore, strategies must be flexible to adjust to these changes. ( lustsik, 2003).

The financial services market is continuing to change rapidly, which brings into question whether traditional banks, as they are now structured, will actually continue to exist by the end of the decade or even survive through the next years (Olga lustsik, 2003). The evolution of e-banking started from the use of Automatic Teller Machines (ATMs) and Finland is the first country in the world to have taken a lead in e-banking (Mishra and Kiranmai, 2009) in order to provide efficient and effective service to their customers. Electronic banking has been widely used in developed

countries and is rapidly expanding in developing countries. However, the slow diffusion of e-commerce to African countries has been attributed to a Number of issues some of which may be unique to the African Continent (Darley, W. K, 2001). Electronic banking (e-banking) is nothing but e-business in banking industry. It may also be referred as internet banking. The internet is transforming the banking and financial Industry in terms of the nature of core products /services and the way these are packaged, proposed, delivered and consumed (Sathye, 1999).

E-banking is defined as the automated delivery of new and traditional banking products and service directly to customers through electronic, interactive communication channels. 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 ATM, Debit card, credit card etc. The computer applications are paramount concern to the banks in today's business environment and internet has become the major platform for all financial, banking and commercial transactions in the present scenario (Magembe, B A S and Shemi A P (2002).

It is an invaluable and powerful tool driving development, supporting growth, promoting innovation and enhancing competitiveness (KamelNathShrick & Parzinger, 2005, 2007). Banks and other businesses alike are turning to Information Technology (IT) to improve business efficiency by delivering the service with minimum cost, service quality and Attract new customers (Nath et al., 2008). Technological innovations have been identified to contribute to the distribution channels of banks. The evolution of banking technology has been driven by changes in distribution channels as evidenced by automated teller machine (ATM), Debit card, credit card, visa card, Phone- banking, Tele-banking, PC-banking and most recently internet banking. The paperless banking has become inevitable (Goi, 2005).

A strong banking industry is important in every country and can have a significant effect in supporting economic development through efficient financial services. In Ethiopia, the role of the banking industry needs to change to keep up with the globalization movement, both at the procedural level and at the informational level. This change will include moving from traditional distribution channel banking to electronic distribution channel banking. E-Banking transactions

have opened up new window of opportunity to the existing banks and financial institutions. It permits business process re-engineering, serving borderless market, to achieve zero latency leading to improvements in customer service levels and better risk management because of real-time settlement. Since its evolution in 90th decades, it is having unprecedented growth. The growth rate is higher in Developed Countries, and comparatively lower in least developed countries (Chang & Gallup, 2003, 2008). Commercial Bank of Ethiopia (CBE) is a pioneer to introduce electronic payments when it launched proprietary ATM system in 2002 by Eight Automated Teller Machine (ATMs). Since then the service of E-payment has been expanding to POS, Mobile banking and Internet banking delivery channels.

Information and communications technologies (ICTs) have changed the way of conducting business transactions and meeting the growing demands of customers for most organizations. The promise of ICTs in the banking sector has been seen in terms of its potential to increase customer base, reduce transaction costs, improve the quality and timeliness of response, enhance opportunities for advertising and branding, facilitate self-service and service customization, and improve customer communication and relationship. Most banks in developed and some in developing parts of the world are now offering e-banking services with various levels of sophistication (Garau, 2002). Thus, given the almost complete adoption of e-banking in developed countries, the reason for the lack of such adoption in developing country like Ethiopia is an important research must conduct.

## **1.2 Statement of the problem**

The economy of most developing countries is cash driven; meaning that monetary transactions are basically made through the exchange of bank notes and coins for goods and services. However, this trend is now giving way to a modern and sophisticated payment system where the currency and notes are converted to data, which are in turn transmitted through the telephone lines and satellite transponders. This is as a result of rapid technological progress and development in the financial market (Ozuru et al.; & Johnson, 2010, 2005). There is faster delivery of information from the customer and service provider, thus differentiating Internet enabled electronic banking system from the traditional banking operation (Singhal and Padhmanabhan, 2008; Salawu et al.; 2007). E-banking has thus become important channel to sell Products and Services; leading to a

paradigm shift in marketing practices, resulting in high performance in the banking industry (Christopher et al. 2006; Brodie et al 2007; Singhal and Padhmanabhan, 2008). The banking industry has been undergoing changes since the mid-1990s, in the form of innovative use of information technology and development in electronic commerce (Kalakota and Whinston, 1996). This development made e-banking pose as a threat to the traditional branch operations, despite the fact that electronic commerce is still developing and is rapidly changing (Harris and Spence, 2002; Turbin et al.; 2002). According to Ozuru et al.; 2010) “The importance of electronic payment system in any country can never be over emphasized, due to the dramatic transformation in technological advancements that is being experienced by the global financial industry”.

Now a day's banks use different schemes so as to satisfy their customer needs. Among these approach using card banking technology has get a wider concern. In this regard CBE being a pioneer in introducing ATM has been working day and night towards reaching a full-fledged service. With all ATMs installed at convenient places including branches, hotels, malls and other public places one can enjoy a 24 hours a day and 7 days a week service including cash withdrawals, bill payment, forex, fund transfer, mobile top up, balance inquiry and the like.

When compared with the banking industry operated in developed country, without doubt the banking industry in Ethiopia is underdeveloped and therefore, there is an 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).

These services are aimed at giving the bank the strategic advantage it needs to maintain the leadership gap it holds over the Ethiopian financial market. With over 10 mill account holders the bank has the biggest market share & aims at future adding to the customer's interest & satisfaction along with harvesting higher returns by utilizing the electronic banking service provision. so far although the e-banking service provision launch has showed to promising, plagues of different kinds & challenges have negatively its diffusion & growth. Those challenges are possibly related to low level of internet service penetration which is closely related with e-commerce service, along

with high initial cost both from users side & banks side to obtain the high technology hardware & software needed for the e-banking service use added to of course to the lack of awareness & understanding from customers which in turn has created a perceived security risk associated with the service usage. Therefore this study identified the major challenges & opportunity of E-banking service based on the research problem stated above.

### **1.3 Research Questions**

Based on the problem stated in this study, researcher develops the following research question.

To gain a comprehensive understanding of the phenomenon under investigation, and in order to be able to provide a sufficient justification for answering that question, the following specific questions needs to be addressed. For the purpose of the present research, these questions are:

1. What are the benefits or opportunities of adopting e-banking service from the viewpoint of the bank?
2. What are the challenges to the Commercial bank of Ethiopia's e-banking system?

### **1.4 Objective of the Study**

#### **1.4.1 General objective**

To assess the opportunity of e-banking service, and challenges for the adoption of e-banking service in Commercial Bank of Ethiopia.

#### **1.4.2 Specific objectives**

1. To explore the current practice and extent of adoption of e-banking service in CBE.
2. To examine the existing challenges while adopting e-banking services in CBE.
3. To identify the existing opportunities or benefits realized by banks for the adoption of e-banking service in CBE.

### **1.5 Significance of the Study**

Since E-banking system is in an infant stage in Ethiopia, by investigating the different challenges for the adoption of this service delivery channel and by recommending solutions for the identified problems, this study will help for practitioner's or banks to benefit from the adoption of this

technology. In addition, it helps to fill significant knowledge gaps about E-banking; there by it give insight to researchers as a source of information for further investigation and recommendation that would help management achieve strategic objective by correctly directing efforts in effective & efficient implementation of e-banking service. Finally this study will help to policy makers those concerning bodies in making law about the bank.

### **1.6 Scope of the Study**

The scope of the study was limited on geographical location which is focused only Addis Ababa branches. The questionnaires were distributed to the commercial bank of Ethiopia employees of four selected branches that are found in A.A. They are currently using the service of E-banking but it does not consider all branches of employees have on technology. Hence the generalization may not be applicable to them.

### **1.7 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 commercial banks in Ethiopia. Owing to the initial stage of e-banking services available in Ethiopia, it was very difficult to get secondary data as well as literature in this area from the country perspective. And other limitations was conduct limited variables, shortage of book & published source in concerning of E-banking and the last shortage of time



## **1.8 Organization of the study**

This study organized in to five chapters. The first chapter provides an introduction to the study. It contains background of the study, statement of problem, objectives, research questions, significance and scope of the study. The second chapter was presents the literature review regarding the definition of E-banking, Evolution of E-banking system, frameworks for the research and sets out some empirical studies regarding the issues under investigated. The third chapter was explaining methods of the study. In this chapter the type and design of the study, the subjects and sampling of the study, procedures of data collection and the data analysis techniques were discussed. The fourth chapter is about the results and discussion of the results of the study. In this part of the study was analysed the collected data are summarized, and then findings was discussed and interpreted.

The fifth chapter was includes the summary, conclusions and recommendations of the study. The summary of the findings was being drawn from the results discussed in the fourth chapter. Finally forward some recommendations

## **CHAPTER TWO**

### **Review of Related Literature**

#### **2.1 Introduction**

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

#### **2.2 Theoretical Review**

##### **2.2.1 Introduction to E-banking**

E-banking has a variety of definitions all refer to the same meaning, the following section show Some of these definitions. E-banking is a form of banking service where funds are transferred through an exchange of electronic signal between financial institutions, rather than exchange of cash, checks, or other negotiable instruments (Kamrul, 2009). E-banking, also known as electronic funds transfer (EFT), is simply the use of electronic means to transfer funds directly from one account to another, rather than by check or cash (Malak, 2007).

The term of E-banking often refers to online banking/Internet banking which is the use of the internet as a remote delivery channel for banking services (Furst & Nolle 2002, p.5). With the help

of the internet, banking is no longer bound to time or geography. Consumers all over the world have relatively easy access to their accounts 24 hours per day, seven days a week. Another definition of E-banking is that. ``E-banking is the use of a computer to retrieve and Process banking data (statements, transaction details, etc.) and to initiate transactions (payments, transfers requests for services, etc.). Directly with a bank or with other financial service provider remotely via a telecommunications network'' (Yang 1997, p.2). It should be noted that electronic Banking is a bigger platform than just banking via the internet. E-banking can be also defined as a variety of platforms such as internet banking or (online banking), TV-based banking, mobile phone banking, and PC (personal computer) banking (or offline banking) whereby customers access these services using an intelligent electronic device, like PC, personal digital assistant (PDA), automated teller machine (ATM), point of sale (POS), kiosk, or touch tone telephone (Alagheband 2006, p.11). Different forms of E-banking system were discussed as follows.

**1. Automated Teller Machines (ATM)** - It is an electronic terminal which gives consumers the opportunity to get banking service at almost any time. To withdraw cash, make deposits or transfer funds between accounts, a consumer needs an ATM card and a personal identification number (PIN).

**2. Point-of-Sale Transfer Terminals (POS)** - The system allows consumers to pay for retail purchase with a check card, a new name for debit card. This card looks like a credit card but with a significant difference. The money for the purchase is transferred immediately from account of debit card holder to the store's account (Malak, 2007).

**3. Internet / extranet banking-** It is an electronic home banking system using web technology. In which Bank customers are able to conduct their business transactions with the bank through personal computers.

**4. Mobile banking-** Mobile banking is a service that enables customers to conduct some banking services such as account inquiry and funds transfer, by using of short text message (SMS). Banks offer Internet banking in two main ways. An existing bank with physical offices can establish a Web site and offer Internet banking to its customers in addition to its traditional delivery channels. A second alternative is to establish virtual branchless or Internet-only, Bank almost without

physical offices. Virtual banks may offer their customers the ability to make deposits and withdraw funds via ATMs or other remote delivery channels owned by other institutions (Furst & Nolle 2002, p.5). In the context of this study E-banking were not considered as only transferring of service by using internet connection rather it considered as multi-channel service provided through ATM, internet banking, Mobile banking (Mod birr system), point sale terminal and telephone banking.

### **2.2.2 Definition of E-Banking**

E-banking has a variety of definitions all refer to the same meaning, the following section show some of these definitions. E-banking is a form of banking service where funds are transferred through an exchange of electronic signal between financial institutions, rather than exchange of cash, checks, or other negotiable instruments (Kamrul 2009). The term of E-banking often refers to online banking/Internet banking which is the use of the Internet as a remote delivery channel for banking services (Furst & Nolle 2002, p.5). With the help of the internet, banking is no longer bound to time or geography.

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) 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, Mols, Sathye, 1998,1998,1999). For example, Burr (1996) describes it as an electronic connection between bank and customer in order to prepare, manage and control financial transactions.

According to Singh & Malhotra (2004), E-banking can be defined as the deployment of banking services and products over electronic and communication networks directly to customers. These electronic and communication networks include Automated Teller Machines (ATMs), direct dial-up connections, private and public networks, the Internet, televisions, mobile devices and telephones. Among these technologies, the increasing penetration of personal computers, relatively easier access to the internet and particularly the wider diffusion of mobile phones has drawn the attention of most banks to e-banking. E-banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet or mobile phone.

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

### **2.2.3 Evolution of E-Banking**

Since the late 1990s E-Banking has developed from virtual insignificance to tens of millions of users worldwide (OECD, 2001). However, E-Banking is the product of different generations of electronic transactions. The current web-based internet is the latest of several generations of systems: Automated Teller machine (ATMs), Phone Banking, PC or House Banking. Automated teller machines (ATMs) were the first well-known machines to provide electronic access to customers where as in phone banking, users call their bank's computer system on their ordinary phone and use the phone keypad to perform banking transactions.

Electronic innovation in banking industry can be traced back to 1970, when the computerization of financial institutions gained momentum (Malak, 2007), however; a visible presence of this was evident to the customers since 1980, with the introduction of ATM. Innovative banking has grown

since then, aided by technological developments in the telecommunications and information technology industry. The early decade of the 1990s witnessed the emergence of automated voice response (AVR) technology. By using the AVR Technology, banks could offer telephone banking facilities for financial services. With further advancements in technology, banks were able to offer services, through PC owned and operated by costumers at their convenience, through the use of intranet propriety software. The users of these services were, however, mainly corporate customers rather than retail ones (Sohail & shanmugham, 2003). The security first network bank was the first Internet banking in the world that was built in 1995 in USA. After that some famous banks introduced their internet banking one after another, such as Citibank and bank of America.

#### **2.2.4 Types of E-banking**

Cheques and drafts have replaced the traditional payment system with money as a medium of settlement and further development in the field has been with the advent of electronic cards. The most commonly used electronic cards include ATM cards, Debit cards, Credit cards and Smart cards. ATM card is a kind of plastic card, which allows a cardholder to withdraw money from his bank account through automated teller machine. This card can be used also for other banking services like deposit and transfer to any other account by using the ATM machine. Credit card is the modern electronic plastic card that may be used repeatedly to borrow money or buy products and services on credit. VISA, Master Card, American Express and Discover is commonly known and widely used credit cards throughout the world. The decision with which card to go depends on the comparison of the features of the specific card (not the brand). The most important features, of course, are Interest rate and Annual fees. Debit cards are electronic plastic cards directly tied to bank account and the amount of money the cardholder can spend with it is limited to the amount of money he/she has in the bank. It is called debit card because when cardholder uses a debit card, the transaction debits (withdraws) the amount of the transaction from cardholders' account, usually on the same day (C.S.V Murthy, 2004).

##### **2.2.4.1 Benefits of E-Cards**

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

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

#### **2.2.4.2 Mobile Banking**

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

#### **2.2.4.3 Tele Banking**

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

#### **2.2.4.4 Home Banking**

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

#### **2.2.4.5 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).

#### **2.2.5 Importance of E-Banking**

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

##### **2.2.5.1 from the Banks Point of View**

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

**Enhanced Image:** E-banking helps to enhance the image of the organization as a customer focused innovative organization. This was especially true in early days when only the most innovative organizations were implementing this channel. Despite its common availability today, an attractive banking website with a large portfolio of innovative products still enhances a bank's



image. This image also helps in becoming effective at e-marketing and attracting young/professional customer base. (Young, 2007).

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

**Easier Expansion:** Traditionally, when a bank wanted to expand geographically it had to open new branches, thereby incurring high start-up and maintenance costs. E-channels, such as the Internet, have made this unnecessary in many circumstances. Now banks with a traditional customer base in one part of the country or world can attract customers from other parts, as most of the financial transactions do not require a physical presence near customers living/working place. Shah & Clarke (1997)

**Load Reduction on Other Channels:** E-Channels are largely automatic, and most of the routine activity such as account checking or bill payment may be carried out using these channels. This usually results in load reduction on other delivery channels, such as branches. This trend is likely to continue as more sophisticated services such as mortgages or asset finance are offered using e-Banking channels. In some countries, routine branch transactions such as cash/cheque deposit related activities are also being automated, further reducing the workload of branch staff, and enabling the time to be used for providing better quality customer services. Shah & Clarke (1997)

**Cost Reduction:** The main economic argument of e-banking so far has been reduction of overhead costs of other channels such as branches, which require expensive buildings and a staff presence. It also seems that the cost per transaction of e-banking often falls more rapidly than that of traditional banks once a critical mass of customers is achieved. The research in this area is still inconclusive, and often-contradicting reports appear in different parts of the world. The general consensus is that fixed costs of e-banking are much greater than variable costs, so the larger the customer base of a bank, the lower the cost per transaction would be. Whilst this implies that cost per transaction for smaller banks would in most cases be greater than those of larger banks, even in small banks it is seen as likely that the cost per transaction will be below that of other banking channels. Shah & Clarke (1997)

**Organizational Efficiency:** To implement e-banking, organizations often have to re-engineer their business processes, integrate systems and promote agile working practices. These steps, which are often pushed to the top of the agenda by the desire to achieve e-banking, often result in greater efficiency and agility in organizations. However, radical organizational changes are also often linked to risks such as low employee morale, or the collapse of traditional services or the customer base. In addition, Electronic banking has also helped banks in proper documentation of their records and transactions. Shah & Clarke (1997)

#### **2.2.5.2 Benefits from the Customers' Point of View**

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

- Reduced costs in accessing and using the banking services.
- Increased comfort and time saving.
- Transactions can be made 24 hours a day, without requiring the physical interaction with the bank.
- Quick and continuous access to information: Corporations will have easier access to information as, they can check on multiple accounts at the click of a button.

- Better cash management: E-banking facilities speed up cash cycle and increases efficiency of business processes as large variety of cash management instruments are available on internet sites. For example, it is possible to manage company's shortterm cash via internet banks (investments in over-night, short- and long term deposits, in commercial papers, in bonds and equities, in money market funds). Private customers seek slightly different kind of benefits from e-banking. In the study on online banking drivers Aladwani (2001) has found, that providing faster, easier and more reliable services to customers were amongst the top drivers of e-banking development.

The main benefits from e-banking for private customers are as per BankAway (2001) are as follows:-

- Reduced costs: This is in terms of the cost of availing and using the various banking products and services.
- Convenience: All the banking transactions can be performed from the comfort of the home or office or from the place a customer wants to.
- Speed: The response of the medium is very fast; therefore customers can actually wait till the last minute before concluding a fund transfer.
- Funds management: Customers can download their history of different accounts and do a "what-if" analysis on their own PC before affecting any transaction on the web. This will lead to better funds management. In addition,
- Besides withdrawing cash customers can also have mini banks statements, balance inquiry at these ATMs. Through Internet Banking customer can operate his account while sitting in his office or home. There is no need to go to the bank in person for such matter.

E- Banking has also greatly helped in payment of utility bill. Now there is no need to stand in long queues outside banks for his purpose. All services that are usually available from the local bank can be found on a single website. The Growth of credit card usage also owes greatly to E-banking. Now a customer can shop worldwide without any need of carrying paper money with him and Banks are available 24 hours a day, seven days a week and they are only a mouse click away.

### **2.2.5.3 Benefits to General Economy**

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

### **2.2.6 E-Banking Risks**

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

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

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

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

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

### **2.2.7 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.

After the overthrow of the Dergue regime by the EPRDF, the Transitional Government of Ethiopia was established and the new economic policy for the period of transition was issued. This new economic policy replaced centrally planned economic system with a market-oriented system and ushered in private sector. 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 Licensing and Supervision of Banking Business No.84/1994 laid down the legal basis for investment.

#### **2.2.7.1 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).

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).

### **Factors influencing Banks to Adopt E-Banking System**

Many researchers have been used different frame works in the study of adopting new technological innovation. Among frameworks that have been developed based on the past studies includes, the Technology-organization-Environment framework (TOE) (Tornatzky & Fleischer, 1990). which identifies three basic Factors for the adoption of technological innovation, i.e., technological factors, organizational and environmental factors. TOE framework was proposed by Tornatzky and Fleischer; it is designed for studying the likelihood of adoption success of technology innovations. This framework is a comprehensive and well received framework in the context of innovation adoption by organizations and has been used in many studies (Salwani, *et al.*, & Ellis 2009; Chang *et al.*, 2007, Zhu & Kraemer 2006).

According to Tornatzky and Fleischer (1990), technology adoption within an organization is influenced by factors pertaining to the technological context, the organizational context, and the external environment. Based on this, the researcher adopts the TOE framework to summarize possible key factors affecting E-banking adoption.

**The Technological factor** refers to adopter's perception of E-banking attributes. Typical characteristics of technology considered in technology adoption studies are based on the assumption of Roger's diffusion of innovation (Rogers 2003), Which include relative advantages (perceived benefits), and relative disadvantages (perceived risks).

*The Organizational factor* refers to the organization's characteristics that influence its ability to adopt and use of E-banking system.

*The Environmental factor* refers to the external environment in which an organization operates and its condition for supporting the development of E-banking services. For each context, various factors have been identified from the literature but only those that are considered relevant for E-banking adoption are included in the framework.

**The Technology Acceptance model (TAM)** TAM was developed by Davis (1986) to explain the computer-usage behavior. According to the model, in explaining the adoption of any information system, perceived ease of use (PEOU) and perceived usefulness (PU) are the two most important determinants.

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

**2. Perceived usefulness:** - refers to the degree to which an organization that using a particular system would enhance or improve its job performance.

According to Masrom and Hussein (2008) the adoption of whether to use an information system for a particular individual is very much dependent on the perceived usefulness and perceived ease of use of the information system.

## **2.3 Empirical Review**

### **2.3.1 Challenges and prospects of E-Banking Adoption**

#### **Challenges**

According to MM Mahman (2008) in Bangladesh despite huge demand from the business community as well as the retail customers particularly the urban customers, electronic banking (e-banking) is still at a budding state due mainly to a number of constraints such as unavailability of a backbone network connecting the whole country; inadequacy of reliable and secure information infrastructure especially telecommunication infrastructure; sluggish ICT penetration in banking sector; insufficient legal and regulatory support for adopting e-banking and so on. The concept of e-banking includes all types of banking activities performed through electronic networks. It is the most recent delivery channel of banking services, which is used for both business-to-business and business-to-customer transactions.



However, in true sense, e-banking includes activities like payment of bills and invoices, transfer of funds between accounts, applying for a loan, payment of loan installments, sending funds to third parties via emails or internet connections regardless of where the client is located. Leow, Hock Bee (1999) state that the terms PC banking, online banking, Internet banking, telephone banking or mobile banking refers to a number of ways in which customer can access their banks without having to be physically present at the bank branch. Therefore, e-banking covers all these ways of banking business electronically. Since e-banking offers some smart services benefiting both banks and customers compared with traditional banking system, it has become imperative to make necessary room for banks to flourish e- banking. Among others, attractiveness of e-banking includes: it lowers transaction cost; provide 24- hour services; ensure increased security and control over transactions; reduces fraud risk; performs higher volume of transactions with less time; increases number and volume of value payment through banks; allows remote transactions facilities that replace physical presence of a customer in a bank branch and; increases transaction speed and accuracy. On the other hand, traditional banking is time-consuming and more costly and therefore, e-banking is replacing traditional banking all over the world.

In addition, an exploratory study that was conducted in Zimbabwe by Chitura Tofara (2008) indicated that incompatibility with the existing system, cost of implementation, security concerns, lack of expertise, inadequate legislation and consumer acceptance are the major challenges for the adoption of e-banking in the country's banking industry.

### **Prospects of E-Banking**

According to M., M Rahman (2008) in Bangladesh e-banking is now a global phenomenon.

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

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

Resistance to changes in technology among customers and staff due to:-

- ❖ Lack of awareness on the benefits of new technologies,
- ❖ Fear of risk among banks
- ❖ Lack of trained personnel in key organizations and
- ❖ Tendency to be content with the existing structures
- ❖ People are resistant to new payment mechanisms;
- ❖ Security where disclosure of private information, counterfeiting and illegal alteration of payment data may be rampant.
- ❖ Frequent connectivity failure in telephone lines
- ❖ Frequent power interruption

### **2.3.2 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 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.

### **2.3.3 Opportunity and Challenges 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.

#### **2.3.4 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.

##### **Challenges**

- 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

##### **Opportunity 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.

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 analysing 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 E-banking, also the result shows that banks which are developing in the international scale are more likely to adopt E-banking innovations.

Finally the result of the study indicated that extent of penetration of E-banking in the growth phase of an emerging market has an important correlation with the improvement of commercial performance. The 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. 8 Journal of Management Information System and E-commerce (Vol. 1, No. 1, June 2014) 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 behavior and critical success factors conducted in Estonia, was intended to study the further understanding of, how consumers perceive electronic banking in the heyday of interactive channels in Estonia, as Estonia is internationally renowned for being a pioneer in the acceptance of new technologies.

A series of an in depth interviews was conducted with leading industry experts in Estonia. The selection criterion for the respondent was mainly their involvement with the development of Internet banking systems from the early days of its emergence. The survey conducted for this research addressed six different issues influencing the adoption of Internet banking (Better prices, Recommendations, Better service, Marketing efforts, 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 behavioural

control factors that might influence the adoption of Internet banking by Hoppe *et al.*, (2001) were based on theory of planned behaviour (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.

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 assess the opportunity and challenges factors influencing adoption of E-banking in Ethiopian banking industries by using survey and interview conducted to the selected branches of the bank.

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# **CHAPTER THREE**

## **RESEARCH METHODOLOGY**

### **3.1 Introduction**

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

### **3.2 Research Approach & Method**

Research approach is selected by researcher(s) based on the research purpose, the nature of the research, the problem area and research questions (Alhamdani et al.2006). The research approach in this study is chosen based on the purpose and the research questions set out to be addressed. According to Creswell (2003, p.13-15) there are three basic types of research approaches, quantitative, qualitative and mixed approach.

This research paper intended to examine the main opportunity and challenges of adopting E-banking in sampled branches of commercial bank of Ethiopia. To acquire the intended information the researcher was use different data collection instruments like distributing questionnaire, conducting interview. The questionnaires are both open-ended and close-ended. In order to collect information regarding the adoption of e-banking. Survey for the quantitative strategy was used through distributing self-administered questionnaires. Questionnaires were distributed to employees of the selected branches. Those respondents were select because, they are deemed to be knowledgeable about E-banking system and could provide important perspectives on its adoption.

### **3.3 Source of data**

The study was conducted by both primary and secondary sources. Primary data are those which are collected a fresh & for the first time & happen to be original in character (Ohtari, 2004:95).

Primary data was collect from the respondents based on a structurally designed. It was include both closed ended and open-ended questions .In addition, unstructured interview with the employees of the e-payment was uses to collect supporting data. Secondary source of data are those which are made available i.e. data which have already been collected & analyzed by someone else (Ohtari, 2004) Secondary data was collected from the websites of the bank and that was collected from books, report and published articles.

### **3.4 Population of the study**

Sampling is the process of choosing, from a much large population, a group about which wish to make generalized statements so that the selected part represent the total group (Leedy, 1989; pp. 158). The sampling population was employees of the selected braches. The selection of the samples was limited to branches of the bank. These selections are limited to these samples because these are highly performer in daily transaction and these are the employees who perform the actual activities of the bank.

### **3.5 Samplings techniques & procedures**

The study was used stratified sampling technique and judgmental technique simultaneously. The stratified sampling technique was used to categorize by district. There are four districts; south, north, east and west then by simple random sampling select 4 branches from those district.

### **3.6 Sample size determination**

The total population of the research was employees of the selected branches of CBE in Addis Ababa. The total populations of the selected branches around 300 employees. By using of Slovin formula the researcher use around 171 sample employees at 95% confidence level. The resarcher was distributing questioner to samples in randomly selected branches. In this study all the employees of the randomly selected branches was used as a sample.

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

$$n = \frac{300}{1 + 300(0.05^2)} = 171$$

### **3.7 Methods of data collection**

To acquire the intended information the researcher was use different data collection instruments like distributing questionnaire, conducting interview. The questionnaire both open-ended and close-ended. In order to collect information regarding the adoption of e-banking thus, the respondents answer the questions and filled questionnaires collected from each respondent according to the time line provided for data collection. The researcher personally gives out the questionnaires. The staffs of the purposely sampled branches included in the survey. A questionnaire was distributed to all 171 professional staffs. Questions presents in the em.in such form of affirmative statements, relating to the concepts on e-banking and to identify their intention on the challenges and opportunities of using electronic banking system, in such a way to enable measurement of the respondent's opinions.

The questionnaires were structured in close-ended type and responses to the questions were measured on a five Likert rating scale where: Strongly Agree (SA) = 1; Agree (A) = 2; Neutral (N) =3, Disagree (D) = 4; and Strongly Disagree (SD) = 5; the use of Likert scale is to make it easier for respondents to answer question in a simple way. In addition, this research instrument will permit an efficient use of statistics for the interpretation of data. Moreover, the central issue to argue that likert scales is that it produce ordinal data. Johns (2010) noted that in statistical terms the level of measurement of the likert response scale is ordinal rather than interval: that is, we can make assumptions about the order but not the spacing of the response options. Thus, the permissible descriptive statistics that can perform on ordinal data is median (or average response) and mode (or more frequent responses) (Hole 2011).

The questionnaire was divided into two sections. Section I captured basic demographic information of the respondents such as gender, age, educational level and income Section II captured information about the nature of the challenges faced in the adoption and usage of E-banking services and sought to determine the perceived benefits of using E-banking system.

### **3.8 Methods of data Analysis**

In order to meet the stated research objectives, the collected data was analyzed based on the nature of the objective. A descriptive analysis is used to present and interpret the data collected on various variables of factors affecting the adoption of e- banking. Using percentages and tables was employ to analyse each objective. Data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence, to address the initial proposition of a study (Yin, 1989; pp. 105). The researcher analyzed the data collected through survey to statistical population concerning the adoption of E-banking system. The data collected via questionnaires was analyzed with descriptive statistics using statistical package for social scientists (SPSS). Furthermore, Wolcott (1994) cited in Creswell (2003; pp. 184), suggested that qualitative research is fundamentally interpretative i.e. the researcher makes an interpretation of the data. Thus, the data that was collected from the interview and reviews of documents were interpreted qualitatively. To sum, the analysis of quantitative data and interpretation of qualitative data combines to seek convergence among the results (Creswell, 2003).

### **3.9 Ethics of Research**

The respondents was told the purpose of the study and asked their permission. The data collected only used for this study purpose and was not accessible for any other purposes. However, the study result was present and accessible both for the graduating school and the organization. To ensure that the intrust of all parties have been protected & respondents were informed about the objective of the interview prior to each interview.

Reliability refers to the degree to which the data collection tools or analysis procedures will yield consistent findings. (Saunders,Lewis&Thornhill, 2009). Reliability measures the internal consistency of a group of items which is used in questionnaire construction. Reliability analysis examines the homogeneity or cohesion of the items that comprise each scale.

# **CHAPTER FOUR**

## **Results and Discussion**

### **4.1 Introduction**

This chapter presents the results and analysis of data collected via questionnaire, interviews and document analysis. The remaining part of this chapter is organized as follows. Section.4.1 presents the overview of the chapter and followed by demographic information of the respondents in section 4.2, Section 4.3 presents the result and discussion regarding the challenges of adopting E-banking in Ethiopia. Information regarding the perceived opportunity and challenges of adopting E-banking are presented in section 4.4. The last section about discussion of the result.

To find the major out puts of the study and to give important recommendations, the collected data should be analyzed and discussed, accordingly the analysis and important findings from the collected data are discussed below.

### **4.2. Demographic information of the respondents**

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

**Table 4.1, Respondents' Demographic profile**

Variables	Classification of variables	Frequency	Percentage
Gender	Male	80	47%
	Female	87	51%
	Missing	4	2%
Age	21-29	109	64%
	30-39	50	29%
	40-50	5	3%
	Over 50	2	1%
	Missing	5	3%
Educational level	Diploma	18	10%
	Bachelor degree	150	88%
	Masters degree	2	1%
	Missing	1	1%
Monthly income (in Eth. Birr)	Br2000-Br3999	30	18%
	Br4000-Br4999	40	23%
	Br5000-Br9999	94	55%
	Over 10,000Br	7	4%
	Missing	0	0%

**Source: Own survey result, 2016**

As it is shown on the above table, the highest percentage of participants in this study was females which are 87 out of the total who form 51% of respondents. In the case of classification of respondents by age the highest percentage of participants are young (21-29 years old) which are 109 out of the total who form 64% of total respondents. Regarding the educational level of the study participants, the highest percentage of them has bachelor degree that form 88% of total

participants. Which is 150 from the total. On the other hand, the highest percentage of participants has monthly income ranges between 5000 to 9999 Eth birr; their percentage in participation is 55%.

The following section discusses the challenges and opportunity to the adoption of E-banking system in CBE. These challenges and opportunity are identified based on two basic frameworks, technology- organization- environment (TOE) frame work and technology acceptance model (TAM).

### **4.3. Challenges of adopting E-banking system in Ethiopia**

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 don't have access to take advantage from electronic banking facilities. Wondwossen & Tsegai (2005) observed the following reasons which may be considered as hindrance factors for the use of electronic payment system in Ethiopia. These hindrance factors include, lack of appropriate infrastructure for E-payment, lack of internet facilities with customer and learning how to interact with bank website. Moreover, factors that can affect adoption of E-banking in the country regarding the technological factor, organizational factor and Environmental factor were analyzed in the following sections.

#### **4.3.1. Technological factor**

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

##### **4.3.1.1. Perceived Risk**

One of the basic barrier a firm faces, while adopting technological innovation is the perceived risks. For example the study of Sohail and Shanmugham (2003) suggests that one of the challenges in the adoption of electronic banking is fear of security risks. Moreover, the bank

managers of the selected branches participated in this study were asked whether security issue is raised with the use of technological facility in the banking industries, and all of them stated that security is the main concern that hinders our bank to use technological facilities. These were also supported by the survey result shown on table 4.2, as follows.

**Table 4.2, Technological factor**

S/NO	Description		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Customers of our bank fear risk to use automated teller machine(ATM )	Frequency	50	66	32	14	9
		Valid Percent	29.2%	38.6%	18.7%	8.2%	5.3%
2	Lack of confidence with the security aspects considered as challenges for the adoption of E-banking system	Frequency	26	88	11	38	8
		Valid Percent	15.2%	51.5%	6.4%	22.2%	4.7%
3	In the case of using mobile banking, ATM and others, security risk affect users decision to use the system	Frequency	33	81	14	37	6
		Valid Percent	19.3%	47.4%	8.2%	21.6%	3.5%
4	Customers do not trust the technology provided by the bank	Frequency	28	50	23	47	23
		Valid Percent	16.4%	29.2%	13.5%	27.4%	13.5%

**Source: Own survey result, 2016**

The result presented in the above table shows that, the respondents asked whether customers of banks fear risk to use ATM, and the descriptive statistics result gives median and mode of 2.00, that means the largest number of respondent were agreed on the issue, which is 66(38.6%) of the respondents are agree. therefore fear of risk is one of the factor that hinder adoption of E-banking system in the CBE. Similarly the result shown on the above table revealed that lack of confidence with the security issue is considered as challenges for the adoption E-banking system, were median and mode value for the second question is 2.00. This result were consistent with the findings of



Ghazi and Khalid (2012, p.9); Khalfan *et al* (2006) in which all indicted that, technological challenges, such as security risk as hindrance factor for the adoption of E-banking.

Also the result shown on the above table indicated that lack of trust on the use of technological facility provided by bank is another factor that can hinder adoption of technological innovation by Ethiopian banking industries. Large numbers of respondents 50 respondents out of the total or about 29.2% agree on customers do not trust the technology. median of 3.00 and mode of 2.00. Agreed with the idea that trust is one basic factor in the adoption of E-banking system. This result confirms the finding of Sathye (1999) which suggests; the greatest challenge among the electronic banking sector is winning the trust of customers in the issue of security or perceived security risk as a key inhibitor in the adoption of online banking.

#### **4.3.2. Organizational factor**

One of the basic issue related with organizational factor is, the availability of financial as well skilled human resource to implement the system. In this study costs related with the use of E-banking instrument and technical or managerial skills required to implement E-banking system were considered as organizational factors.

The result depicted on the tables deals with whether there is the banks have procedures in place for when there is an interruption in service of e-banking for the customers were 78(45.6%) are agree.

As it is shown in the following table 4.3, regarding the cost incurred on the use of different E-banking system like internet/online banking and mobile banking the largest number of respondents 61 out of the total or 35.7% did not agreed with the idea. Similarly the descriptive statistics result shows that, median and mode value for the first two questions in the table is 4.00.

On the other hand the result presented on table 4.3. Blow revealed that unfamiliarity with the service provided though ATM, Internet banking, telephone and mobile phone by customers, Lack of technical and managerial skills on the use of technological innovation and Lack of skills to implement E-banking system are considered as challenges for the adoption of E-banking system.

#### **Table 4.3. Organizational Factor.**

S/NO			Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	The bank have procedures in place for when there is an interruption in service of e-banking for the customers	Frequency	50	78	12	25	6
		Valid Percent	29.2%	45.6%	7.1%	14.6%	3.5%
2	Relatively using of Mobile to get banking service is expensive for customers	Frequency	22	58	15	61	15
		Valid Percent	12.7%	34%	8.8%	35.7%	8.8%
3	Lack of sufficient government support will affect customers	Frequency	25	58	27	51	10
		Valid Percent	14.6%	34%	15.8%	29.8%	5.8%
4	Customers of our bank were not familiar with service provided though ATM, Internet banking, telephone and mobile phone	Frequency	30	73	16	39	13
		Valid Percent	17.5%	42.7%	9.4%	22.8%	7.6%
5	Lack of technical and managerial skills on the use technological innovations	Frequency	28	81	9	41	12
		Valid Percent	16.4%	47.3%	5.3%	24%	7%
6	Lack of skills to implement E-banking system	Frequency	29	44	17	64	17
		Valid Percent	17%	25.7%	9.9%	37.4%	10%

**Source: survey result, 2016**

The above results were also supported by an interview script received from the respondents, which indicated that, compared with traditional banking system; using different technological innovation in banking industry is used to perform banking activities at lower costs. This finding is consistent with the finding of Rasoulina & Javaheri(2006) which suggests, cost, infrastructure, Socio-cultural, time, information, legislation and regulation and economic as the most effective issues affecting the electronic activities. These issues can be either challenges or opportunity. For instance, if a country has managed to achieve a cost reduction greater than the investment made in

adoption of new technology, then the cost factor can be considered as an opportunity than as challenge.

In general, using of E-banking service such as internet banking, mobile banking and others is not expensive when compared with traditional banking system. On the other hand lack of social awareness/lack of familiarity with different technology and lack of sufficient skills to use and implement E-banking system were considered as challenges to adopt E-banking system in Ethiopia.

### **4.3.3. Environmental factor**

Another factor which can affect the adoption of technological innovation in banking industry is an external environment: in this study four basic environmental factors are considered, these are legal frame works, national ICT infrastructure, competitive pressure and government support. The result obtained from survey, interview and literature regarding those four issues were presented in the following sections.

#### **4.3.3.1 Lack of legal and regulatory framework**

Electronic payments are not currently covered in Ethiopian legal system. Lack of such legal framework may thus hinder the introduction of cost effective modern electronic payment instrument such as ATMs, credit and debit cards, mobile/telephone/internet banking. Other policy initiative which is currently under consideration is the development of securities market, particularly, that of long term debt instruments (Getahun 2008). Similarly the study of Gardachew (2010) revealed that lack of legal frame work is one of the challenges for E-banking system in Ethiopia. In contrary the study of Wondwossen and Tsegai (2005) revealed that an adequate legal structure and security framework could encourage the use of E-payments in Ethiopia. However, the result of survey presented in table 4.4 about legal frame work on implementation of E-banking system revealed that lack of legal frame works and target market regulatory difference is considered as challenges faced by banking industries for the adoption of E-banking system in Ethiopia.

**Table 4.4.Environmental factor (Lack of legal and trade market)**

S/NO	Description		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Lack of legal frame works that enforce banking industries to adopt technological innovation	Frequency	39	73	15	26	18
		Valid Percent	22.8%	42.7%	8.8%	15.2%	10.5%
2	The bank have a target market or trade area for e-banking	Frequency	45	54	31	32	9
		Valid Percent	26.3%	31.6%	18.1%	18.7%	5.3%

**Source: Survey result, 2016**

Results reported on table 4.4, shows that the median and mode value for the first questions were 2.00, that means, the largest number of respondents 73 or 42.7% out of the total respondents were agreed that there is no legal frame works in Ethiopia. Likewise, the median and mode value for the second question in the above table were 2.00, largest number of respondents 54 or 31.6% were agreed that the bank have target market or trade area for e-banking. Ethiopia (NBE) also prove that, Ethiopia does not have special rule on the use of E-banking system or it is not yet included in the banking regulation. Since there is no legal frame works on the adoption of technological innovation at central bank, Ethiopian banking industry cannot be enforced to implement E-banking system. So lack of legal frame work for the implementation of E-banking system is one basic challenge for Ethiopian banking industry. The finding of this study were also consistent with the study of Tan and Ouyang (2002), they found that lack of legislation is an initial challenges that influence E-banking adoption in china.

#### **4.3.3.2. Lack of adequate ICT infrastructure**

Despite the recent improvements made by Ethiopian government on the national infrastructure, the overall ICT infrastructure in Ethiopia remains inadequate. Card-based payment systems in Ethiopia have been growing fast in recent years. Four commercial banks in the country including the state owned (Commercial

Bank of Ethiopia), Dashen bank, Zemen bank and Wegagen bank have introduced wider use of debit or ATM cards. Commercial banks in Ethiopia also cited plans to use new technologies for remittance transfers, including mobile-phone transfers and remittance-linked financial products such as prepaid cards. However, significant challenges to these plans include, lack of adequate financial and telecommunications infrastructure for the new technologies (Alemayehu & Jacqueline 2011). Similarly the study of Wondwossen and Tsegai (2005) stated that lack of sufficient telecommunication infrastructure is one of the basic challenges in the development of E-payment in Ethiopia. More over the questionnaire result in this study presents four questions to examine the perception of bank staff on the issue.

**Table 4.5.Environmental factor (Lack of adequate ICT infrastructure)**

S/NO	Description		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Using internet banking is difficult due to low internet access	Frequency	62	82	4	16	7
		Valid Percent	36.3%	48%	2.3%	9.4%	4%
2	Internet connection was not good enough to perform online transactions in Ethiopia	Frequency	48	91	3	21	8
		Valid Percent	28%	53.2%	1.8%	12.3%	4.7%
3	Lack of available ICT infrastructure	Frequency	43	79	8	37	7
		Valid Percent	25.2%	44.4%	4.7%	21.6%	4.1%
4	Mobile banking services may not perform	Frequency	40	82	8	30	11
		Valid Percent	23.4%	48%	4.7%	17.5%	6.4%
5	Customers may not willing to accept E-banking	Frequency	19	57	27	55	13
		Valid Percent	11.1%	33.3%	15.8%	32.3%	7.6%

**Source: Survey result, 2016**

The above table 4.5 shows that ICT infrastructure in Ethiopia for internet access is not sufficient to use online banking service, were the median and mode value for the first question is 2.00. Similarly the median and mode value of the rest three questions is 2.00, which indicated that lack of available ICT infrastructure in the country inhibits to use E-banking system. Similarly, an interview script received from the CBE E-payment manager indicates that the poor quality of telecommunication network service is a major obstacle for all banks in Ethiopia to effectively deliver some services such as internet banking, mobile banking and others.

Inevitable *Moreover, the manager of ARADA GIORGIS branch indicated that: Our bank were aggressively doing on the provision of high quality service to customers by employing different technological innovation, for example the bank purchase CORE banking system software, which offers service to customers more than the sophisticated ATM machine. It would enable banks to provide Internet banking to deliver product/service to customers. It helps customers to view their balances, transfer funds, and pay bills online. Banks could also offer mobile banking services through which customers can check their balance and transfer funds by short message service (SMS), as well as phone banking to check balances and make account inquires by phone. However, some experts in the banking industry speculate that underdeveloped telecommunications infrastructure may hinder the visibility and practicality of the CORE banking system.* Therefore, one of the major obstacle factor identified in this study is lack of ICT infrastructure, to use E-banking service, such as internet banking, mobile banking, ATM and others.

#### **4.3.3.3. Lack of competition**

As it is stated in different E-banking literature, competitive pressure is considered as driver for the adoption of E-banking in developed country. For example, the study of Laforet & Lu (2005) and Salwani (2009) suggests that, the foreign funded banks are more competitive in securing corporate clients over the Chinese banks because they are perceived to offer better services and more stringent security measures given their longer experience in E-banking development. However, lack of competition in Ethiopia among local and foreign bank hinders Ethiopian banking industries to adopt E-banking system. Respondents were asked whether lack of competition among local and foreign banks influence adoption of E-banking and the result obtained from survey is shown on the following table.

**Table 4.6.Environmental factor (Lack of competition)**

Description		Frequency	Percent
Valid	Strongly Agree	13	7.6%
	Agree	67	39.2%
	Neutral	33	19.3%
	Disagree	47	27.5%
	Strongly disagree	11	6.4%
	Total	171	100

**Source: Survey result, 2016**

The above table 4.6 shows that the largest number of respondents 67 or 39.2%, were agreed with the idea that lack of competition between Ethiopian banking sector and foreign bank is considered as challenges for the adoption of E-banking system. 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 well-developed foreign bank competition therefore, Ethiopian banking industry did not consider about competition with foreign banks and such polices could discourage banking sector of the country from adoption of E-banking system.

**4.4. Perceived benefits/opportunity of adopting E- banking system in Ethiopian**

**Banking industry**

An advantage that is expected to be gained from the adoption of E-banking covers both direct and indirect benefits for the banking industries. Direct benefits include savings on operational cost, improved organizational functionality, productivity gain, improved efficiency, saving of time and

increased profitability. Indirect benefits include the opportunity or intangible benefits such as improved customer's satisfaction through improved services, improved banking experience and fulfillment of their changing needs and lifestyle (Lu 2005; Kuan 2001 & Iacouou 1995).

Perceived benefit of adopting E-banking system considered in this study were classified based on technology acceptance model (TAM), as perceived ease of use (PEU) and perceived usefulness (PU). PU was classified in terms of time and cost saving. Also other benefits beyond cost and time saving were analyzed at the end. In order to access online banking services, it is important that bank should have ICT infrastructure and internet facility available to facilitate their customers with all kinds of online banking services. Pikkarainen et al. (2004) argued that bank must have an official website which facilitates customers to perform all kinds of online transaction so that, It saves customer cost and time as adopting E-banking system. Customer can make transactions from their home. Polatoglu *et al.* (2001) suggests many benefits associated with online banking. Customer can pay their bills, can pay their loans, credit and debit card facilities. In other words it provides freedom from location, saves time and cost.

#### **4.4.1. Perceived ease of use**

One of the basic benefits related with the use of E-banking system is the perceived ease of use. Giglio (2002) suggests that adopting online banking services reduce the workload over the banking staff and it's easy to have more satisfied customers. On the other hand Robinson (2000) indicated that online banking provides convenience not only to bank and also to customers. The data obtained from the survey in this study also confirms the finding of Giglio (2002) and Robinson (2000) and the result were shown in table 4.8 as follows.

**Table 4.7, perceived ease of use**



S/NO	Description		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	E- banking makes it easier for me to do banking activities	Frequency	92	71	0	8	0
		Valid Percent	53.8%	41.5%	0	4.7%	0
2	In the case of mobile banking, our customers can simply use banking service by using their cell phone	Frequency	61	87	8	13	2
		Valid Percent	35.7%	50.9%	4.7%	7.6%	1.1%
3	From the bank perspective it is easy to use mobile	Frequency	68	92	4	5	2
		Valid Percent	39.8%	53.8%	2.3%	2.9%	1.2%
4	Using E-payment system (like debit card, salary card, ATM or visa card) simplify the activity of workers to deliver service to customer	Frequency	88	58	9	9	7
		Valid Percent	51.5%	33.9%	5.3%	5.3%	4%
5	Our bank provide guidelines on the use of electronic banking facility	Frequency	68	87	8	6	2
		Valid Percent	39.8%	50.9%	4.7%	3.5%	1.1%
6	The management of the bank provides training courses for its staff when introducing new services.	Frequency	52	97	10	8	4
		Valid Percent	30.4%	56.7%	5.9%	4.7%	2.3%
7	Improve the relationship with customers.	Frequency	77	66	14	12	2
		Valid Percent	45%	38.7%	8.2%	7%	1.1%

**Source: Survey result,20126**

Regarding ease of use as a benefit of adopting E-banking system, respondents were asked whether they `strongly agreed, Agreed, Neutral, and Disagreed or strongly disagreed` based on seven

questions shown in the above table 4.8. The result for all statements of the field indicated that, Median and Mode value is 2.00, which means that respondents of the sampled agreed with the idea that perceived ease of use in terms of, simplifying banking activity, is a good factor for the ability to adopt E-banking system. More over an interview result were also support the result of questionnaire that it indicated, it is an option less to implement E-banking to simplify the banking activity and improve customer satisfaction.

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

#### **4.4.2. Perceived usefulness**

Perceived Usefulness is a good factor to measure the success of E-banking adoption. Hoppe *et al.* (2001) indicated that perceived relative advantage has a positive influence on the adoption of Internet Banking and it is compatible with their values to be adopted by users.

##### **4.4.2.1. Time saving**

According to an interview result, one of the basic benefits considered in the adoption of E-banking system, is that it saves time to accomplish banking activities both for banks as well to customers. Using the system to get banking service is fast and available 24 hours a day and 7 days a week. This were in line with the study of Karjaluoto *et al.* (2002), which identifies time saving as a major benefit of adopting online banking system. That is it saves time to accomplish banking activities both for banks as well to customers. Using the system to get banking service is fast and 70 available 24 hours a day and 7 days a week. This were in line with the study of Karjaluoto *et al.* (2002), which identifies time saving as a major benefit of adopting online banking system.

#### **Table 4.8. Percieved Usefulness (Time saving)**

S/No	Description		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	E-banking such as, Internet banking ,Mobile banking, ATM and POS services are enables users to complete banking activities	Frequency	93	63	9	5	1
		Valid Percent	54.4%	36.8%	5.3%	2.9%	0.6%
2	E-banking such as, Internet banking ,Mobile banking, ATM and POS are convenient, in terms of time	Frequency	72	88	3	6	2
		Valid Percent	42%	51.5%	1.8%	3.5%	1.2%
3	E-banking such as, Internet banking ,Mobile banking, ATM and POS are convenient, in terms of 7 days and	Frequency	65	90	10	4	2
		Valid Percent	38%	52.6%	5.8%	2.4%	1.2%
4	E-banking is more accessible to users than visiting a bank	Frequency	67	78	13	10	3
		Valid Percent	39.2%	45.6%	7.6%	5.8%	1.8%

**Source: Survey result, 2016**

The median and mode responses of the question, using E-banking such as internet banking, mobile banking, ATM and other services enables users to complete banking activities more quickly and

easily were 2.00 and 1.00 respectively. It means that the largest number of respondents 93 or 54.4% out of the total was strongly agreed. These result implies, that using online banking system helps to perform banking activities within a short period of time. Clients can simply check their balance, transfer funds and pay their bills on line with just a click of mouse and a touch of button. On the other hand using internet banking is more convenient in terms of saving time and delivering of bank service to customer 24 hours a day and 7 days a week, were the median and mode value is 1.00. The result shown on the above table 4.9 also revealed that the median and mode value for the last question is 2.00 and 1.00 respectively, which indicates that, without visiting brick and mortar, customers can get bank service by using E-banking system. In line with this finding Balachandher *et al.* (2010) suggests that, one of the implications of E-banking is that it should reduce the need to visit bank branches to get services.

#### **4.4.2.2. Cost saving**

Cost minimization is an important goal for business organization in addition to profit maximization. we can see cost minimization as an advantage of using the system from two perspectives, first from the bank perspectives, by using E-banking system like, ATM, internet banking, mobile banking and others, banks save a lot of costs. In the long run a bank can save money by not paying for tellers or for managing branches. This way of cutting transaction cost results in higher profit margin for the banks. D'Souza (2002) noted that, the combination of higher technology and higher skills have posted a higher turnover for banks as they have been able to provide better customer support and have managed their assets well. Second, customers can get banking service at lower costs compared with traditional banking service, because, it is cheaper to make transaction over Electronic fund transfer. Similarly, the study of, Balachandher *et al.* (2010), noted that, online banking fees have reduced over the years and less expensive when compared with traditional system. Moreover, the survey result regarding cost factor is shown on table 4.9 as follows.

**Table 4.9.Percieved Usefulness (Cost saving)**

S/No	Description		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Using technological tools like ATM helps to perform transaction at lower cost.	Frequency	71	86	1	10	3
		Valid Percent	41.5%	50.3%	0.6%	5.8%	1.8%
2	High installation cost.	Frequency	49	55	21	24	22
		Valid Percent	28.6%	32.2%	12.3%	14%	12.9%

**Source: Survey result, 2016**

The median and mode responses for both questions; “The transactions in Internet banking are at a lower price, or at no cost and using technological tools like ATM helps to perform transaction at lower cost” were 2.00. These result implies, using of technological tools such as internet and ATM were resulted in performing of banking duties at lower prices. Similarly, an interview result also indicates that, the basic benefit a firm or customers gained from the adoption of E-banking is cost minimization. This finding is consistent with the previous studies of Poon (2008), and Balachandher *et al.* (2010), in which all of whom found, cost minimization as an important factor for the adoption of E-banking system.

#### **4.4.3. Other Benefits**

In addition to, perceived ease of use, and perceived usefulness, in terms cost and time saving, there are also different benefits which, banking industry can attain from adoption of E-banking system. The other benefit of E-banking system identified in this study are ,improving of customer satisfaction, through enhancing speed and efficiency, reduce number of customers come to banking hall, while it reduces the work load of bank staff, increase the productivity of banks, by creating foreign currency, increase reliability and accessibility of banking service ,create better relationship among banks and clients, used as better information control and unlimited time to access bank account and information. Selected respondents were asked whether the above listed

benefits are considered in their organization as success factor for the adoption of E-banking system and the result obtained from survey were shown on the following table.

**Table 4.10.other benefits of E-banking system**

S/No	Description		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Improve customer service	Frequency	78	79	7	6	1
		Valid Percent	45.6%	46.2%	4.1%	3.5%	0.6%
2	Speed and efficiency	Frequency	77	81	3	6	4
		Valid Percent	45%	47.3%	1.8%	3.5%	2.4%
3	Reduce number of customers come to the banking hall	Frequency	71	73	11	11	5
		Valid Percent	41.5%	42.8%	6.45	6.4%	2.9%
4	Increased the productivity of bank	Frequency	75	86	7	2	1
		Valid Percent	43.8%	50.3%	4.1%	1.2%	0.6%
5	Increase reliability and accessibility	Frequency	68	87	7	8	1
		Valid Percent	39.8%	50.9%	4.1%	4.6%	0.6%
6	Used as better information control tools	Frequency	51	101	4	14	1
		Valid Percent	29.8%	59.1%	2.3%	8.2%	0.6%
7	No time limit to access bank account and information	Frequency	74	75	5	14	3
		Valid Percent	43.3%	43.8%	2.9%	8.2%	1.8%
8	Cover wide geographic area.	Frequency	51	74	8	29	9
		Valid Percent	29.8%	43.3%	4.7%	16.9%	5.3%

**Source: Survey result, 2016**

Table 4.11, shows that the median and mode value for the first question E-banking is considered as improving of customer's service were 2.00. This result implies that, by using the system banks can improve customer satisfaction. Moreover, an interview result were also support this idea, that one of the key factor that push banking industry to adopt technological innovation is enhancing of

customer satisfaction. Similarly the median and mode value for the second question is 2.00 and 1.00 respectively; it indicated using of E-banking system helps bank staff to perform banking activity quickly by employing a low amount of resources. On the other hand customers can get banking services without visiting bank office, were the median and mode value for the third question is 1.00. If banks can use sufficient technological tools to deliver service, such as ATM, Internet, Mobile and POS terminal, it would not be limited by geographical location to get banking service. So, it can reduce number of customers come to banking hall compared with traditional banking system. The other benefits gained from using of E-banking system is that it increase the productivity/profitability of bank, were the median and mode value for the fourth question in the above table is 2.00 and 1.00 respectively. In addition to increasing the productivity of bank, the system also increase reliability and accessibility of banking services, were the median and mode value for the question related with reliability and accessibility as a benefit are 2.00 and 1.00, respectively.

Moreover, E-banking system create better relationship between banks and clients, were the median and mode value for this question is 2.00. Customers of the bank who uses on line banking service can view all information posted by banks on their website. The other benefit listed on the above table is that the system is used as a better control for confidential information, were the median and mode value for this question is 2.00. For example, the bank provide PIN code for each individual users of ATM in which, information regarding clients 77 account balance is accessible only to each individual customers and banks. Lastly, E-banking service were not limited by time, were the median and mode response for this issue is 1.00. Customers of the bank who uses online banking can get 24/7/365/6 (24 hours a day, 7 days a week and 365/6 days a year) banking service.

#### **4.5. Discussion of the Result**

The data obtained from survey, interview and documents has been analyzed. Three basic factors were used to analyses the challenges of adopting E-banking system, technological factor, organizational factor and Environmental factor. On the other hand perceived ease of use and perceived usefulness, are two basic factors used as an opportunity for the adoption of E- banking. Also some other benefits of the system has been analysed in the chapter. The highest percentage of participants in this study was females which are 87 out of the total who form 51% of

respondents. In the case of classification of respondents by age the highest percentage of participants are young (21-29 years old) which are 109 out of the total who form 64% of total respondents. Regarding the educational level of the study participants, the highest percentage of them has bachelor degree that form 88% of total participants. Which is 150 from the total. On the other hand, the highest percentage of participants has monthly income ranges between 5000 to 9999 Eth birr; their percentage in participation is 55%.

The respondents asked whether customers of banks fear risk to use ATM, and the descriptive statistics result gives median and mode of 2.00, that means the largest number of respondent were agreed on the issue, which is 66(38.6%) of the respondents are agree. the cost incurred on the use of different E-banking system like internet/online banking and mobile banking the largest number of respondents 61 out of the total or 35.7% did not agreed with the idea. The largest number of respondents 73 or 42.7% out of the total respondents were agreed that there is no legal frame works in Ethiopia, largest number of respondents 54 or 31.6% were agreed that the bank have target market or trade area for e-banking. ICT infrastructure in Ethiopia for internet access is not sufficient to use online banking service, which is 48% of them agreed on this idea. The largest numbers of respondents 67 or 39.2% were agreed with the idea that lack of competition between Ethiopian banking sector and foreign bank is considered as challenges for the adoption of E-banking system. The result for all statements of the field indicated that, Median and Mode value is 2.00, which means that respondents of the sampled agreed with the idea that perceived ease.

The largest number of respondents 93 or 54.4% out of the total was strongly agreed. These result implies, that using online banking system helps to perform banking activities within a short period of time. The transactions in Internet banking are at a lower price, or at no cost and using technological tools like ATM helps to perform transaction at lower cost” were 2.00. These result implies, using of technological tools such as internet and ATM were resulted in performing of banking duties at lower prices. Lastly, E-banking service were not limited by time, were the median and mode response for this issue is 1.00.

## **CHAPTER FIVE**



## **Summary, Conclusion and Recommendation**

The study intended to examine the main challenges and opportunity in the adoption of E-banking system in Commercial Bank of Ethiopia, through adopting mixed research approach. On the other hand, the purpose of this chapter is to delineate the summary of findings in section 5.1, followed by conclusion in section 5.2 and presents some recommendations forwarded in section 5.3.

### **5.1. Summary of findings**

This study aims at investigating the main challenges and opportunity of adopting E-banking in commercial bank of Ethiopia. To achieve the proposed objective two basic frame works were used, i.e. Technology-organization-Environment (TOE) and technology acceptance model (TAM). On the other hand both quantitative as well as qualitative (mixed) research approach was employed in the study.

Guided by the technology-organization–environment (TOE) framework and technology acceptance model (TAM), this study has identified a number of challenges and opportunity for E-banking adoption. TOE, is classified in to three factors to determine challenges for the adoption of E-banking system. The technological challenges, identified in this study were security risk and lack of trust on the technological innovation used by banking industries. The finding identified under technological factor were also consistent with other studies on technology adoption in different countries, Ghazi and Khalid (2012) & Sathye (1999), both of them found that security risk is the major barrier for the adoption of E-banking system.

In the case of organizational factor, financial cost as well as human resource is considered, in this study financial cost were not considered as challenge for the adoption of E-banking in commercial bank of Ethiopia and it is consistent with the finding of Rasoulina (2006). On the other hand 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.

Most challenges to E-banking adoption identified in this study were come from external Environments; specifically those are lack of legal framework regarding E-banking system at National level, lack of ICT infrastructure, and Absence of competition between local and foreign banks. Interestingly, lack of Government support was not taken as challenges for the adoption of E-banking system in Ethiopia.

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 technology acceptance model (TAM) as perceived ease of use and perceived use fullness. Perceived ease of use is taken as a major benefit of using E-banking system. At the same time this finding supports the study of Giglio (2002) and Robinson (2000).The other benefit found in the study were based on its usefulness in terms of time and cost saving. These are two basic benefits that drive banking industry to adopt technological innovations.

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**

E-banking system, such as ATM, mobile banking, internet banking and others were not well adopted by Ethiopian banking industry. This is due to low level of ICT infrastructure and lack of legal frame works 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 security risk and lack of trust on the use of technological adoption are other major barriers for the system. The level of security risk associated with E-banking product or service, such as ATM, internet banking, mobile banking and others, pose different challenges to different banks. Improvements are required to ensure client confidence. Lack of competition

among local and foreign banks is also another challenge for the adoption of E-banking in the country.

Chances of risk, lack of trained and efficient staff in e-banking context, lack of suitable legal and regulatory framework, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high installation cost of internet and security issues are the main challenges for adoption of e-banking in Ethiopia. In addition, lack of customer awareness regarding the service is another challenge in order to provide the service. Therefore, from this, it is possible to conclude that there are challenges for the adoption of e-banking service, that are not yet adopted the system and for the sufficient adoption of the service from the viewpoint of the bank that are currently providing the service in the country.

Technical and managerial skills available in commercial bank 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 challenges to E-banking adoption identified in this study may help to identify the best course of actions to promote its development. It also 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 need a lot of efforts to succeed.

Based on the above conclusion, the researcher recommends the following points:

- In order to successfully facilitate E-banking adoption in Ethiopia, national bank of Ethiopia, (NBE) needs to urgently establish a clear set of legal frame works on the use of technological innovation in banking sector.
- 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.
- In order to survive, Ethiopian banking industry need to move away from traditional bases of retail bank competition to a new technology based form of competition by focusing on cost reduction, customer retention, awareness, credibility, security, ease of use, and wider scope of products and services.
- 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.
- Banks should pay special attention to deliver service to customers by using E- banking system, which can easily be accessible.
- Creating continuous social awareness about E-banking services by emphasizing its advantage like time saving, low cost and convinces through different forms of media advertising such as brochures, webpages etc.
- Banks should build always to guarantee reliability or dependability of online transactions in order to build customer confidence & to improve the trust worthiness reputation of banks.
- Effective cooperation among banks has to be developed. The value of E-banking will be increased by linking one activity with other both with in banks & outside with suppliers, channels & customers.

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## Appendix A: Questionnaires and interview guide.

### ST MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES

Dear Sir/Madam

My name is Mahlet Zerihun Desalegn, Msc student in department of business administration at ST Mary's University. The aim of this questionnaire is to **identify the opportunity and challenge of adopting E-banking service in commercial bank of Ethiopia**. The information you provide in response to the items in the questionnaire will be used as part of the data needed for a study of *Adopting E-banking, mainly focused on challenges and perceived benefits*. The results of the study are anticipated to supply to the understanding of the basic challenges and benefits of adopting new technology in delivering of service to customers in commercial banks of Ethiopia. I would like to assure you that the information you provide will be used only for the purpose of achieving academic award. Your involvement is regarded as a great input to the quality of the research results. Hence, I believe that you will enlarge your assistance by participating in the study. Your honest and thoughtful response is invaluable.

Thank you for your participation

Best regards,

April, 2016

### General Instruction

This questionnaire contains two sections that will be expected to take approximately 05-10 minutes to complete. Please provide your responses to the questions based on the instructions under each section. If you have comments or if you want to provide further explanations, please use the space provided at the end of the questionnaire.

### Section I: Demographic profile of respondents

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

1. Gender: Male  Female
2. Age: 21-29  30-39  40-50  over 50



3. Educational level: Diploma holder  First degree  Masters degree

4. Monthly income (in Eth. Birr):

Less than 2000Br  Br2000-Br3999  Br4000-Br4999

Br5000-9999  OverBr10, 000

**Section II: Questionnaires related with opportunity and challenges 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 (√) on the spaces that specify your choice from the options that range from “strongly Agree” to “strongly disagree”. Each choices were identified by numbers ranged from 1 to 5.

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

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

	The following are some challenges the company faces, when adopting E-banking system, please indicate level of your choice.	SA	A	N	D	S.D
		1	2	3	4	5
1	<b>I. Technological factors (Perceived</b> Customers of automated teller					
2	<b>risk</b> ) of confidence with the security aspects considered as					
3	In the case of using mobile banking, ATM and others, security					
4	Customers do not trust the technology provided by the bank					
	<b>II. Organizational factors</b>					
5	The bank have procedures in place for when there is an					
6	Relatively using of Mobile to get banking service is expensive					
7	Lack of sufficient government support will affect customers					
8	Customers of our bank were not familiar with service provided					
9	Lack of technical and managerial skills on the use technological					
10	Lack of skills to implement E-banking system					
	<b>III. Environmental factors</b>					
11	Using internet banking is difficult due to low internet access					
12	Internet connection was not good enough to perform online					
13	Lack of available ICT infrastructure					
14	Mobile banking services may not perform well because of					
15	Lack of legal frame works that enforce banking industries to					
16	The bank have a target market or trade area for e-banking					
17	Lack of competition among local banks.					
18	Customers may not willing to accept E-banking service					

Any other barriers? Please specify below.

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The following are some of the opportunity derived from the adoption of E-banking system, please indicate your choice <b>IV. Perceived Ease of Use</b>		SA	A	N	D	S.A
		1	2	3	4	5
19	E- banking makes it easier for me to do banking					
20	In the case of mobile banking, our customers					
21	From the bank perspective it is easy to use					
22	Using E-payment system (like debit card, online and ATM services) simplify the					
23	Our bank provide guidelines on the use of electronic banking facility					
24	The management of the bank provide training courses for its staff when introducing new services.					
25	Improve the relationship with customers.					
	<b>V. Perceived Usefulness</b>					
26	E-banking such as, Internet banking ,Mobile					
27	E-banking such as, Internet banking ,Mobile					
28	E-banking such as, Internet banking ,Mobile					
29	E-banking is more accessible to users than					
30	Using technological tools like ATM helps to					
31	Improve customer service					
32	Speed and efficiency					
33	Reduce number of customers come to the					
34	Increased the productivity of bank					
35	Increase reliability and accessibility					
36	Used as better information control tools					
37	No time limit to access bank account and					
38	Cover wide geographic area.					
39	High installation cost.					

**Part two: Questionnaires related with the opportunity of adopting E-banking**

Any other benefits? Please specify.

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## **Interview questionnaires**

### **I. Challenges of adopting E-banking system.**

1. What type of Electronic banking service do you provide? ATM, Internet banking, mobile banking or others? Please specify
2. What are the basic challenges of adopting new technological innovations like ATM, internet banking and mobile banking?
3. Is the following factors considered in your institution as challenges for the adoption of technological innovation?
  - A. lack of competition
  - B. Customers reluctance
  - C. lack of social awareness
  - D. cost incurred in the purchase of technological instruments
  - E. Security risk
  - F. inadequate ICT infrastructure
4. Do you see any social, Economic and legal challenges to the adoption of ATM, internet banking and mobile banking in your branch?
5. Do you think that government policy have impact on the adoption of E- banking system?  
(Please Specify/explain)

### **II. Opportunity of adopting E-banking system.**

1. What are the benefits your branch gained from the adoption of ATM, internet banking and mobile banking system in the delivery of service to customers?
2. Concerning the opportunity I want to talk about. One of these is the perceived advantages, so what are the advantages derived from the usage of technological tools like ATM, internet and mobile to deliver service to customers instead of using the traditional tools.
- 3 In your opinion what are the key factors that push to adopt ATM, internet banking and mobile banking system?
4. As Your opinion, what are the advantages / reasons that you consider of implementing E-Banking system?

