ST. MARY'S UNIVERSITY

BUSINESS FACULTY

DEPARTMENT OF ACCOUNTING

ASSESSMENT OF E-PAYMENT SYSTEM CHALLENGES AND PROSPECTS THE CASE OF COMMERCIAL BANK OF ETHIOPIA

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ACRONYMS

ATM	Automatic Teller Machine
B2C	Business to Consumer
B2B	Business to Business
B2G	Business to Government e-commerce
CBE	Commercial Bank of Ethiopia
C2C	Consumer to Consumer
EFT	Electronic Fund Transfer
EBPP	Electronic Billing Presentiment and Payment
ICT	Information Communication Technology
INSA	Information Networking System Agency
NFC	Near Field Communication
PIN	Personal Identification Number
PKC	Public Key Cryptography
POS	Point of sale
TTP	Trusted Third Party
SMS	Short Message Service
SWIFT	Society for Worldwide Interbank Financial Telecommunication
WAP	Wireless Application Protocol

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Information technology is considered as the key driver for the changes takes place around the world. Due to pervasive and steadily growth of information and communication technology the world banking industry is entering into anew phenomena of unprecedented form of completion supported by modern information and communication infrastructure. (Murthy, 2004). Over the years we have experienced as progression of value transfer systems from barter, through bank notes, payment orders, cheques and later credit cards. This has finally evolved in to electronic payment systems which enables commerce on the internet. (Asokan,et,al, 2000). E-Payment is a subset of an ecommerce transaction to include electronic payment for buying and selling goods or services offered through the internet. When we think of electronic payments as referring to online transactions on the internet, they are actually many forms of electronic payments. As technology developing, the range of devices and processes to transact electronically continues to increase while the percentage of cash and check transactions continues to decrease. The evolution of e-payment started from the use of Automatic Teller Machines (ATM) and Finland is the first country in the world to have taken a lead in e-payment. (Mishra, and Kiranmai, 2009).

Electronic payment 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 2001). In Ethiopia commercial bank of Ethiopia being the pioneer in introducing ATM based payment system but Dashen Bank is the first to fully implement this system in the country. The most commonly used electronic cards include ATM cards, credit cards, debit cards, and recently commercial bank of Ethiopia start PoS (Point of Sale), mobile banking and internet banking services. (Http://www.combanketh.et). In general there are many challenges for developing e-payment in Ethiopia so that, this paper focuses to identify this challenges and prospects in the case of commercial bank of Ethiopia.

1.2Background of the Organization

The National Bank of Ethiopia was established in 1963 proclamation 206 of 1963 and began operation in January 1964 prior to this proclamation the bank used to carry out dual activities i.e. commercial banking and central banking. The proclamation raised the Banks capital to Ethiopian dollars 10 million and granted broad administrative autonomy and juridical personality. The Commercial Bank of Ethiopia (CBE) is the leading bank in Ethiopia, established in 1942. At the moment CBE has more than 7 million account holders and also it has strong correspondent relations with more than 50 renowned foreign banks and SWIFT bilateral arrangements with 500 others. The CBE is noted as the pioneer of modern banking the country. It was the first bank to serve Automatic Teller Machine (ATM) services for its locals and the first to serve western union money transfer services in the country early 1990s and currently working with other 20 money transfer agents like money gram, bole Atlantic international, x press money and others. In the long years of its market existence, CBE has ensured sustainable profitability with strong support to the country's economic growth, expanded its branch network covering large geographical areas, substantially increased its customer base and capital site and hence it becomes one of the top African banks in terms of in directing Ethiopia's economy towards development and progress. This government owned bank holds more than Birr 50 billion worth of assets with around 18,000 employees, making it one of the largest bank in the country. By the year 2012/2013 the bank posted a gross profit of 8.4 billion birr and according to a performance report tabled by the office of strategy and management with the Bank, the fiscal year also saw the opening of additional 148 branches. It is also effectively serving its customers in Juba, Sudan, since it received a regulatory approval in 2009. (Http://www. cbebanketh. et)

1.3 Statement of the problems

Most of the business to business transactions are currently taking place through the use of e-payment system to complete the full cycle of e-commerce. E-payment system can provide several benefits for the different players in the field as well as the overall economy. These may include, the card holder can benefit from the safe and convenient nature of using card for payment, it allows merchants to reach out to the global market and the merchant will be able to increase sales and can manage to reduce risks as well as costs related to cash management, it reduces operation and processing cost at the same time, saves paper for receipts and prevent fraud through automated control. Above all these, the positive impacts of e-payment card for economic development. However, there are many challenges to fully implement it as it have been assessed through preliminary study,some of these are, low level of internet connection and lack of telecommunication infrastructure, high rate of illiteracy, lack of awareness remain key challenges. In the context of the above background information, this research tried to assess the challenges and prospects of e-payment system in the case of CBE.

1.4 Research Questions

This study is designed to assess and evaluate the challenges and prospects of e-payment system in commercial Bank of Ethiopia. To realize the objective of this study, the research will be attempts to answer the following basic questions.

- What are challenges that Commercial Bank of Ethiopia (CBE) facing in establishing and running E-payment?
- What are customers attitude towards e-payment system in commercials Bank of Ethiopia?
- How effectively is commercial bank of Ethiopia utilizing E-payment?
- What are the prospects of E-payment development?

1.5 Objective of the Study

1.5.1 General Objective

The general objective of this study is to assess clearly the challenges and prospects of e-payment system in commercial Bank of Ethiopia.

1.5.2 Specific Objective

- To identify challenges of E-payment and to recommend the possible solution.
- To evaluate or measure effectiveness of E-payment in commercial Bank of Ethiopia.
- To analyze the current status of E-payment system in commercial Bank of Ethiopia.
- To identify and assess customers attitude towards E-payment system in Commercial Bank of Ethiopia.
- To investigate the main prospects of E-payment development.

1.6 Significance of the study

The research is primarily under taking to assess the challenges and prospects of e-payment system. This study is expected to fill the gap and to contribute a better understanding of the e-payment system and possible challenges of the current situation. The major Significance of study is:-

- The researchers gain knowledge relating on e-payment system.
- It's significant for people who would like to look in to similar topics can take it as a stepping stone.
- It also serves as a basis for further studies.

1.7 Scope of the Study

The introduction and use of e-payment system highly depends on the development of e-commerce i.e. E-payment in Ethiopia is at a start up stage but could play a vital role in the banking industry in particular and the economic development of the country in general. Therefore this study focuses on the challenges and prospects of e-payment system the case of commercial Bank of Ethiopia Goffa Suffer Branch (E-payment head office). Commercial Bank of Ethiopia is the pioneer in introducing Automatic Teller Machine (ATM) services for its local

users, and also recently start mobile banking and internet banking services, so this study mainly focus on these services. In order to accomplish the study successfully in terms of time, area to be covered and resources required to conduct the research scope (delimitation) is very important so that researchers of this study tries to separate (divide) the time period by the three conditions. This means to collect ATM related data used the past four years annual reports starting from (2010-2014) and to collect data about internet banking and mobile banking used reports starting from 2013 until now because both are new technologies so the users are small in number.

1.8 Research Design and Methodology

1.8.1 Research Design

The main aim of this research is to assess the challenges and prospects of e-payment system. To achieve this objective a general plan that guides the process of data collection, analysis and interpretation must be designed so the student researchers used descriptive research design.

1.8.2 Population and Sampling Design

For the purpose of studding e-payment challenges and prospects a decision must be made to use a primary and secondary data. The sampling technique that has been used to acquire the necessary information from e-payment users are stratified sampling which is probability technique and also judgmental (purposive) sampling method is used to collect data from e-payment department (staff). In the first sampling method, the population is heterogeneous so that by using accidental sampling the population is divided into homogeneous strata. In the second sampling method the student researchers selected sampling units from the population who have the required information. The total population size of this study is all the e-payment department staff and all users of e-payment system, but because of time and budget constraints the researchers of this study tries to draw representative sample based on the above sampling technique.

Table 1.1Total population and sample size

Respondents	Population	Sample size
Automatic Teller Machine users(Card holders)	2500	50
Mobile banking users	500	20
Internet banking users	30	30
E-payment department (staff)	107	15
Total population and sample size	3137	115

(Source organization profile)

1.8.3 Types of Data collected

The major sources that has been used to collect data is both primarily and secondary sources. Primary data collected from e-payment department and users of e-payment system. Secondary data collected from the banks documents, magazines, Annual reports, broachers, Medias and other documents that are related to the topic.

1.8.4 Method of Data Collection

From various data collection instruments the researchers of this study used questionnaire (Open ended or close ended type of question) and un structured interview method to collect primary data from e-payment department and users of e-payment system. Secondary data collected by referring the banks documents, magazines, Annual reports, broachers, Medias and other documents that are related to the topic.

1.8.5 Data Analysis Methods

The researchers of this study summarized the responses of the sample population by grouping similar responses together in order to avoid repetition of ideas. This is done by tabulating the data and analyzing in percentage.

1.9 Limitation of the Study

The researchers encountered the following challenges while conducting this study.

- Shortage of time
- Budget constraints
- Lack of experience of researchers
- Willingness of the respondent
- Lack of reference materials

1.10 Organizations of the Study

The research paper consisted four chapters. The first chapter is the introduction parts, including background of the organization, background of the study, statement of the problem, research question, objective of the study, significance of the study, scope of the study, research methodology and limitation of the study. The second chapter is reviewing of relevant literatures. The third chapter discussed the data presentation and analysis. Finally the last, chapter which is chapter four, presents conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 E-commerce an over view

In today's world many people across the global make payments electronically together than in person or cash commerce constitutes the exchange of products and services between businesses group and individuals. Commerce or trade can hence, be seen as one of the essential activities of any business. If we look back, commerce in the pre internet age was very restricted compared to the possibility of the new information technology and the infrastructure (information infrastructure) offer. The major limiting factors were time and space. Even if shop were open 24 hours a day only a limited number of customers' could come to the location of the shop. The shop can also offer only a limited selection of goods as space is limited on the premises. A shop on the internet is unlimited in space and time. There are no limits on the number of product a shop can offer. The internet is charging the traditional sales model, which is factional in nature. E-commerce was one of the first business type to become digitally available but, the internet offers more than just the beginning and selling of products and service. (Amor, 2002).

According to Koponen,2011, key word in e-commerce is that business is done without any physical exchanges or direct physical contract. The internet has emerged as major force for change not only in business relationship, but also in the way people communicate e-commerce is charging the way many companies conduct business and has introduced a new category of virtual online business (Szupeicz,O 1999). Business and individual can use electronic commerce to reduce transaction cost by improving the flow of information and increasing the coordination of actions. By reducing the cost of searching for potential buyers and sellers and increasing the number of potential market participants, electronic commerce can change the attractiveness of vertical integration for many firms. (Schneider Gary P., 2002). According to Koponen.A major types of e-commerce can be categorized in to five distinct forms.

Business to consumer (B2C): business to consumer concentrates to retail or sale side of the e-commerce. It is commerce between companies and consumers, involves customers gathering

information; purchasing physical goods like books, travel or information goods like downloadable digitalized material content such as soft ware, music or electronic books.

As an example from in B2C field is Amazon.com which based on big variety of assortment is closer to internet shopping mall. (Koponen.A, 2011)

Business to business (B2B): when e-commerce is extended to supply chain management between and among business we get a new concept, which is called business to business (B2B). B2B area is now a day's growing much faster than B2C and about 80% of the e-commerce is this type. Companies are able to manage different element along the supply chain like manufacturers, distributors and dealers. So B2B e-commerce is simply e-commerce between two or more companies. Main focus in B2B is on procurement where as B2C already focuses on selling and marketing. (Koponen.A, 2011)

Consumer to consumer (C2C): consumer to consumer (C2C) e-commerce occurs between private individuals or consumers. In general the main objective of e-commerce is to provide competitive customer service globally. (Koponen.A, 2011)

Business to government e-commerce (B2G): E-commerce between companies and the public sector is usually referred as Business-to-government e-commerce. In practice it means the use of the internet for licensing procedures, public procurement, and other government related operations. In B2G the public sector has a leading role for establishing e-commerce. (Koponen.A, 2011).

Mobile Commerce (m-commerce): Mobile commerce or m-commerce is defined as a process of buying and selling of goods or services through wireless technology. Most common representative in this category is of cause mobile phone. Biggest benefit of m-commerce is, that terminal is portable and there is radio coverage in major cities. There is also increasing amount of available in m-commerce sector for example; Data or Information services, which cover for example automatic or manual delivery of sport news, weather information, stock market updates to a mobile device. (Koponen.A, 2011)

Benefit of E-commerce

The literature identifies a large value of potential benefit from the adoption of e-commerce. The benefits may be divided in to five areas. (Davies Paul Beynon , 2004):

- Cost savings: These are efficiency gains that include lower elastic cost, lower potential cost, lower storage cost and lower personal cost.
- Time savings: These are efficiency gains that include quicker persons time to markets, customers and suppliers.
- Connection improvement: These include benefit such as disintermediation the process by which mediating organizations are removed in the customer chain or supply chain.
- Quality improvement: These improvements include access to new markets, innovative ways of marketing new products and service, and the general improvement in customer relation.
- Strategic improvement: these include more effective and efficient organizational forms and doing business on the globe scale.

2.2 History and Meaning of Electronic payment system

As payment is an integral part of mercantile process, electronic payment an integral part of e-commerce. Payment systems that use electronic distribution net works constitute a fortunate practice in the banking and business sector since 1960, especially for the transfer of big amounts of money. The term electronic payment includes any payment to businesses bank or public services from citizens or businesses, which are executed through a telecommunications or electronic net works using modern technology. It is obvious that based on this definition, the electronic payment that are executed by the payer himself, whether the latter is a consumer or a business without the intervention of another natural person, furthermore, the payment is made from distance without the physical presence of the payer and naturally it does not include cash. (Sumanjeet Singh , 2009).

E-payment is a subset of an e-commerce transaction to include electronic payment for buying and selling goods or services offered through the internet. Generally we think of electronic payments as referring to online transactions on the internet, there are actually many forms of

electronic payments. Electronic payment is not a new phenomenon. The use of electronic networks for trade began in the early 1970s in the financial sector. Some of the first applications involved Electronic Funds Transfer (EFT) the movement of money between financial institutions via telecommunications networks. Even Automated Teller Machines (ATM), beginning in the 1980s, is a form of electronic payment; every time the customer uses the ATM, it involves a transaction made over a computer network. (Barnes, Sand Hunt, 2001)

As technology developing, the range of devices and processes to transact electronically continues to increase while the percentage of cash and check transactions continues to decrease. In the US, for example, checks have declined from 85% of non-cash payments in 1979 to 59% in 2002, and electronic payments have grown to 41%. The Internet has the potential to become the most active trade intermediary within a decade. Also, Internet shopping may revolutionize retailing by allowing consumers to sit in their homes and buy an enormous variety of products and services from all over the worlds. Many businesses and consumers are still wary of conducting extensive business electronically. However, almost everyone will use the form of E-commerce in near future. Many types of electronic payment systems exist, but the average number is about seven, including Debit cards, Credit Cards, Electronic Fund Transfers, Direct Cards, Direct Debits, Internet banking, and e-commerce payment systems. (Http//www.epayement.com).

Increasingly, organizations are avoiding paper based solutions because the internet and availability of software products and services make electronic payment solution more convenient and cost effective electronic payment already exist in many forms including credit cards, cards, digital cash and micropayments, most of these forms of payments occur independently as onetime events rather than as part of an ecommerce system. Increasingly however credit cards are used for payment for internet services and online purchases. The growth of e-commerce on the internet has created new demands on electronic payments, which involving different entities such as banks, merchants, consumers and corporations. Include cash. (O.Szupeicz Bohdan, 1999).

One major function of e-commerce sites is the handling of payments over the internet. Electronic commerce involves the exchange of some form of money for goods and services. Implementation of e-payment system is still involving. As a result, a number of proposals and implementations of electronic payment systems compete for dominance. However, electronic

payments are far cheaper than the dead free method of mailing out paper invoices and then processing payments received. E-payment can be convenient for customers and can save companies a lot of money. (Schneider Gary P., 2002)

2.3 Types of E-payment Card

A payment card is a plastic card containing information that can be used for payment purposes, usually emitted from a financial institute. (Maurizio Marek, 2011).

In general payment cards offer:

- Getting cash from ATM (Automatic Teller Machine)
- Pay directly to sellers with POS(Point of Sale)
- Pay online

Debit Card

Are very much like a credit card, but it work quite differently. Lasted of charging purchases against credit, a debit card removes the amount of the char he from the card holder's bank account and transfers it to the seller's bank account. Debit cards issuer, the cardholder's bank and usually carry the name of major credit card issuer, such as visa or master card by agreement between the issuing bank and the credit card issuer. In pay-new payment systems, the payer's account is debited at the time of payment. ATM card based systems fall into this category. (Schneider Gary P, 2002).Debit instruments allow the payer to have purchases directly charged (Debited to funds on his/her account at deposit taking institution such as a bank). Debit instruments include direct debits, debit cards and cheques. (Vassilion, Charalampos, 2004).

Direct debits are pre-authorized debits on the payer's bank account that are initiated by the beneficiary. Direct debits are currently often used for recurring payments, such as utility bill payments, (e.g. for water, electricity and telephone usage), or for one-time payments where there is no direct contact between the payer and beneficiary. Of all non-cash payments in the EU, 25% are direct debits. Direct debits are most popular in Spain, Germany and Austria. (http://www.eurotechnology.com/store/mobilepaymetnt).

Debit cards provide a convenient way to present the cardholder information needed to debit the cardholder's bank account. This information is embedded in the magnetic stripe (or chip) on the back of the card. A dedicated terminal is required to read the information on the debit card and possibly to verify whether the debit card is still valid and whether the transaction would exceed usage limits set for the card. Debit cards are used in 19-20% of all EU non-cash payments and are most popular in Denmark, Belgium and the Netherlands. A cheque is a written order from one party (the drawer) to another (the drawee, normally a bank) requiring the drawee to pay a specified sum on demand to the drawer or to a third party specified by the drawer. An electronic cheque follows the same principle, except that the order is in electronic format rather than in writing. Mainly payment providers in the United States have begun to offer electronic cheques (e-cheques) to allow customers to pay for purchases online. (http://www.eurotechnology.com/store/mobilepaymetnt).

Credit Cards

Credit cards are by far the most popular form of line payments for consumers a credit card such as a visa or a master card has a spending limit based on the user's credit history. (Schneider Gary P., 2002). Credit cards are widely accepted by merchants around the world and provide assurances for both the consumer and the merchants. In pay-later (credit) payment a system, the payee's bank account is credited the amount of sale before the payer's account is debited. Credit card systems fall into this category. Credit cards allow customers to make purchases up to a pre arranged ceiling the credit that is granted is either settled in part, full by the end of a specified period generally, a month, or can be settled in part, with the remaining balance extended as credit (Asokan, et.al.2000).

Credits cards are internationally known to customers are accepted by merchant. They are also easy to use on the internet, as only the credit card detail need to be sent to the beneficiary in order to effect payment. (Vassiliou,Charalampos, 2004)

Charge Cards

Charge cards are similar to credit cards except they have no revolving credit line, so the balance must be paid off every month. Credit, debit and charge card methods of payments have been successfully utilized in the pre internet period, and they are often used in the e-commerce world

as well. Charge cards such as one from America express or diner's club carries no spending limit and the entire amount charged to the card is due at the end of the billing period. Charge cards do not involve lines of credit and do not accumulate interest charges. (Schneider Gary P. 2002).

2.4 Types of electronic payment systems

Currently there exist more than hundred e-payment systems. Some e-payment systems are simply electronic versions of existing payment systems (e.g. online credit card). Some others are based on digital currency, which enables storage and exchange of values digitally. (Tadesse and Kidan 2005). With the growing complexities in the e-commerce transactions, different electronic payment systems have appeared in the last few years. At least dozens of electronic payment systems proposed or already in practice are found. (Marthy, 2002).

2.4.1Online Credit Card Payment System

Online credit card payment system is the most common type of payment system for e-commerce. (Tadesse and Kidon, 2005).

This payment system has been widely accepted by consumers and merchants throughout the world, and by far the most popular methods of payments especially in the retail markets. (Laudon.C and traver, 2002).

This form of payment system has several advantages, which are never available through the traditional modes of payment. Some of the most important are: privacy, integrity, compatibility, good transaction efficiency, acceptability, convenience, mobility, low financial risk and anonymity. However, online credit card payment seeks to address several limitations of online credit card payments for merchant including lack of authentication, repudiation of charges and credit card frauds. (Sumanjeet Singh, 2009).

2.4.2Electronic Payment based on Trusted Third Party

Since there is no face-to face interaction in most e-commerce transactions, the payment system must be strongly secured. Trust is also another important factor that has to be considered. Towards this end, most electronic payment systems used for e-commerce are based on the idea of Trusted Third Party (TTP). TTP provides trust, security, identification and authentication,

which are highly desirable in these kinds of payment schemes. The specific role of the TTP varies from one payment system to another. In some payment systems such as Cyber Cash the role of TTP is limited to serving as a channel of communication between the open Internet and close financial networks. In other systems, such as PayPal and First Virtual, both buyers and sellers have to open account in the TTP and transfer money into their TTP account. (Tadesse and Kidan, 2005).

2.4.3Electronic Cash (Digital Cash)

Electronic cash (e-cash) is a new concept in online payment system because it combines computerized convenience with security and privacy that improve on paper cash. E-cash is an electronic or digital form of value storage and value exchange that have limited convertibility in to other forms of value and require intermediaries to convert. (Sumanjeet Singh, 2009)

Electronic cash has got some similarities with real money such as privacy, transferability and convenience, low transaction cost, good acceptability, authority, like real money, digital cash is totally anonymous. However, there is also a type of digital cash called an identified e-money, which reveals the identity of the person who first withdrew the money from the bank. But unlike real cash, digital cash cannot be instantly converted to other form of value without the involvement of a third party like bank. Privacy in digital cash is achieved using blind signature without the involvement of TTP. This is in contrast with other e-payment systems. (Tadesse and Kidan, 2005)

2.4.4 **Electronic Cheque Payment System**

Electronic cheques address the electronic needs of millions of businesses, which today exchange traditional paper cheques with the other vendors, consumers and government. Electronic cheque also known as e-cheque and I-cheque are used to make electronic payment between two parties through an intermediary and not very much different from the traditional or current cheque processing system. Electronic cheques are generated and exchanged online. (Juang, w.s, 2006). Electronic cheque system has many advantages: they don't require consumers to reveal account information to other individuals when setting an auction, they don't require consumers to continually send sensitive financial information over the web, they are less expensive than credit cards and they are much faster than paper based traditional cheque. But, this system of payment

also has several disadvantages includes, they relatively high fixed costs, their limited use only in virtual world and the fact that they can protect the users anonymity. (Sumanjeet Singh, 2009)

2.4.5 Mobile Payments

Mobile payment (m-payment) is an electronic payment done using mobile devices. One of the main uses of m-payment is in mobile commerce (m-commerce). Instead of using cash or cards a consumer can use a mobile phone to pay for a wide range of services and goods. There are 5 million of cell phones around the world.

Japan is the leading country to introduce mobile payment and it is a major payment system in Japan. Smart phone can be equipped with NFC (Near Field Communication) to communicate with reader an out 4cm away. Other approaches of mobile payment include free cash: make the payment from phone, pay pal mobile opopay, Google g pay, based on text messages. (Maurizio Marek, 2011).

SMS (Short Message Service), WAP (Wireless Application Proteocol) and Bluetooth application are the technology that enabled m-commerce. M-payment is used for online payments and for POS (Point of Sale) transactions. Mobile devices are also used at POS terminals, vending machines, ticketing machines. (Tadesse and Kidan, 2005).

2.4.6 Smart Card based E-payment System

Smart cards are receiving renewed attention as a mode of online payment. They are essentially credit card sized plastic cards with the memory chips and in some cases, with microprocessors embedded in them so as to serve as storage devices for much greater information than credit cards within built transaction processing capability. (Rajesh Chakarabari and vikas Kardile, (2002). In e-payment smart cards are used either as storage of money or to enhance e-payment security. To use smart card it is necessary to have a smart card reader, a hardware device that communicated with the chip on the smart card. The reader can be attached with PCs, electronic cash register, etc. these are actually stored-value cards in which prepayment or currency values are electronically stored on the card chips.

Compared with traditional electronic cash system, smart cards based electronic payment does not need to maintain a large real time database. They also have advantages, such as anonymity,

transfer payment between individual parties, and low transactional handling cost of files. Smart cards are also better protected from misuse than, say conventional credit cards, because the smart card information is encrypted. The benefit of smart card is highly dependent on the availability of smart card reader. (Sumanjeet Singh, 2009).

2.4.7 Electronic Billing Presentment and Payment

Electronic Billing Presentment and Payment (EBPP) are online payment systems for monthly bills. EBPP enables consumers to pay their bills by electronic means after they view their bills electronically. Bills, particularly monthly bills, are norms of modern life. It includes, electronic bills, telephone bills, etc. are some instances. EBPP enables consumers to pay their bills by electronic means after they view their bills electronically. Actors for EBPP include customers, commercial banks and third party processors. Third party processors facilitate bill presentment and payment. (Tadesse and Kidan, 2005).

Bill processing is costly. From the time the bills are issued to the time they are paid, a substantial amount of cost is incurred. Electronic payment systems reduce considerably the cost associated with paying bills. (Laudon.C and Traver, 2002).

2.5 Features and benefits of E-payment

According to Garadahew Warku (2010) study all e-payment methods share number of common characteristics. These are independence; inter operability and portability, security anonymity, divisibility ease of use, transaction fees, convenience, cost, control and traceability.

Electronic payment system is most beneficial for online sellers, because it allows them to transact sales online rather than being confined in a local brick store. It reduces operational and processing cost at the same time saves paper for receipts. It allows merchants to reach out to the global market. Depending on the company, it offers security for credit and debit card payments. Blue Snap is a great example of a reliable gateway for online payments. In time for this season, consumers can now shop online avoiding long mall lines and heavy traffic during holidays. (Http://www.answers.com/topic/payment). In general E-cards offer a number of benefits to the issuing banks and customers of the bank including:

- Enhance payment security by theft or loss.
- Reduce Undeliverable payments via electronic delivery to the card account.
- Prevent fraud through automated controls.
- Increase customer satisfaction and enhance services to constituents.
- Improve operations efficiency and profitability of the issuing banks.
- Reduce printing, mailing and financial handling costs associated with processing transaction.
- For any buying and selling activity it is so much more convenient.
- It saves time or much faster than carrying cash.

Electronic payments have significant number of economic benefits apart from their convenience and safety. These benefits when maximized can go a long way in contributing immensely to economic development of a nation. While the high level of cash transactions creates an opportunity for the electronic payment industry, it also impossible a cost on local economies. Cash has to be omitted, securely transported, counted and reconciled, kept secure an maintained for reuse time and time again. The per payment cost is high, will always remain right whereas the costs of electronic system are fixed. Once the infrastructure has been built, the costs per-transaction is very low. (Cob, 2005).

Automated electronic payments act as a gate way into the banking sector and as a powerful engine for growth such payments draw cash out of circulation and in to the banking accounts, providing low cost funds that can be used to support bank lending for investment adviser of overall economic activity. The process creates greater transparency and accountability, leading to greater efficiency and better economic performance (Said Alshaikh, 2005)

2.6 Online VS offline cash payment

Two widely accepted approaches to holding cash exit to day online storage and offline storage. Online cash storage means that the costumer does not personally possess electronic cash instead; a trusted third party an online bank online is involved in all transfer of electronic cash and holds the customer cash account online system work by requiring merchants to contact the customer's bank to receive customer purchase, which helps prevent forward by confirming that the customer's cash is valid. Offline cash storage is the virtual equivalent of money kept in wallet.

The customer holds it and no third party is involved in the translation protection against fraud is still a concern, so either hardware or software safe guards must be used to prevent double or fraudulent spending. (Schneider Gary P., 2002).

The obvious problem with offline payment is now to prevent payers from spending more money than they actually possess. In a purely digital world, dishonest payer can easily reset the local state of his system after each payment to the state before the payment. Therefore offline payment systems that prevent double spending require tamper-resistant hardware, such as smart cards at the payer end. (Askon et, al 2000). Often, tamper resistant hardware, such as security modules of point-of-sale (PoS) terminal is also used at the payee end-it is mandatory in the case of shared key system and in cases where the payee dose not forward individual transactions but only totals. On line systems obviously require more communication, but not necessarily tamper resistant hardware. (Kumaga Delali,,2010). In general, they are considered more secure than off-line system.

2.7 Traditional VS Electronic payment system

To get in to the depth of e-payment process, it is better to understand the processing of conventional or traditional payment system. A Traditional process of payment and settlement involve a buyer-to-seller transfer of cash or payment information (i.e, cheque and credit cards). The actual settlement of payment takes place in the financial processing net work. Cash payment requires a buyer's deposit of payment from his/her bank account, transfer of cash to the seller, and the sellers deposit of payment to his/her account. On cash payment mechanisms are settled by adjusting i.e. crediting and debiting the appropriate account between banks based on payment information conveyed via cheque or credit cards. (Sumajneet Singh, 2009)

2.8 E-BANKING

Electronic banking is one of the most successful online businesses. E-banking allows customers to accept their accounts and execute orders through a simple to use web site. There is no special soft ware for customers to install (other than a web browser and many banks don't change for this service some banks even lower costs for online transactions versus on site banking transactions). Electronic banking saves individuals and companies time and money. Online

banking puts the power of banking tin to the hands of the customer and allows to the customers to choose self service for all their banking needs with online served as customers can view their account histories transfer funds, order checks, playbills, re order checks, or get in touch with the customer service department of the bank. Electronic banking is an online service that allows customers to perform the same banking functions as in quicken, except that they can access their accounts directly over the internet. (Amor Daniel, 2002).

Internet and electronic banking create a customized interactive relationship that differs from personal contact with a teller, but is more personal than an automated teller machine transaction or telephone contact with an automated cell center. (O'Szuprowi Bohdan, 1999).

2.9 Challenges of E-payment

E-payment has many positive impacts in the banking industry and economic development of the country in general. However, there are challenges to fully implement this system even in the developed world and also in the developing country especially in Africa. The identified challenges as revealed by previous research works are security infrastructure, regulatory and legal issues and socio-cultural challenges.

2.9.1 Security

One of the biggest challenges of e-payment is to ensure its security. E-payment systems have to take into account the need of multilateral security i.e. security needs of all participating parties in the e-payment system must be given due attention. An e-payment system that is not secured may not get trust from its users. Trust is one of the crucial factors for the acceptance of e-payment system. (Taddesse and Kidon, 2005).

The overall security of e-payments and online transactions in general comprises several components. Some of the most important are:

Availability: the instrument provides efficient and timely response and has adequate capacity in Order to support acceptable performance, and is able to recover quickly from disruptions.

Authenticity and Authorization: the instrument has appropriate measures to authenticate the correct identity and authorization of customers using the service, and to make sure that all transactions are legitimate.

Integrity: the instrument has the appropriate measures to protect data integrity in e-payment transactions. This means the e-payment-related information in transit or in storage cannot be altered or deleted without authorization.

Non-repudiation: the instrument uses transaction authentication methods that promote non repudiation and establish accountability for e-payment transactions. Proof that a message has been sent and received is provided to protect the sender against false denial of receipt by the recipient and to protect the recipient against a false claim by the sender that the data have been sent.

Confidentiality: the instrument takes the appropriate measures to preserve the confidentiality of relevant e-payment information. Key information should not be disclosed in such a way that it can be viewed or used by those unauthorized to do so.

The technologies to secure e-payment transactions can be broadly classified under two different types of methods: symmetric and asymmetric encryption. In symmetric encryption (secret key cryptography), a shared secret key is used for both encryption and decryption. Symmetric cryptographic algorithms are comparatively fast as they employ fairly simple mathematics and therefore, can also quickly encrypt and decrypt large volumes of data. Asymmetric encryption (Public Key Cryptography, PKC) reduces the key distribution problem by splitting the encryption and decryption keys into a mathematically associated unique key pair, one being public and one being private. (Http//www.eurotechnology.com/store/mobile payments)

2.9.2 Infrastructure

Infrastructure is necessary for the successful implementation of electronic payment proper infrastructure for electronic payment is a challenge. E payment infrastructure includes mobile and internet network, a network that links banks and other institutions, electricity and so on. Businesses that success fully meet the challenge supposed by long age and culture issues still face the challenge posed by variations and inadequacies in the infrastructure that supports the

internet throughout the world. Internet and communications net work over which the message packets travel. In many countries other than United States the telecommunications industry is either government owned or heavily regulated by the government. In many cases, regulations in these countries have inhibited the development of the telecommunications infrastructure or limited the expansion of that infrastructure to a size that cannot reliably support internet data packet traffic. (Schenider Gary P., 2002). In general development of information and communication technology is the major challenge to implement e-payment system.

2.9.3 Regulatory and Legal Issues

Businesses that operate on the web must comply with the same laws and regulations that govern the operations of all business. If they do not, they face the same set of penalties fines, reparation payments, court imposed dissolution, and even fail time for officers and owners that any business face. (Schenider Gary P., 2002).

National, regional or international set of laws, rules and other regulations are important requirements for the successful implementation of e-payment schemes. Some of the major elements include rules on money laundering, supervision of commercial banks and e-money in situations by supervisory authorities, payment system oversight by central banks, consumer and data protection, cooperation and competition issues. (Http;//.ecb.int/events/pdf/conferences/e payment).

The virtual and global nature of e-payment also raises legal questions such as which jurisdiction will be competent and about applicable laws in disputed cases, validity of electronic, electronic contracts and electronic signature. A legal regulatory frame work that builds trust and confidence supporting technical efforts is an important issue to be addressed in implementing e-payments. (Tadesse and Kidan, 2005)

2.9.4 Socio cultural challenges

Cultural and historical differences in attitudes and the use of different forms of money complicate the task of developing an electronic payment system that is applicable at international level. According to Taddesse & Kidan (2005) difference in the degree of the required security and efficiency among people of different cultures and level of development aggravates the

problems. Consumer's confidence and trust in the traditional payments system has made customers less likely to adopt new technologies.

New technologies will not dominate the market until customers are confident that their privacy will be protected and adequate assurance of security is guaranteed.

2.10 E-payment in Africa

Electronic payments in most African countries is very limited in use or virtually non exist. According to Tadesse and Kidan (2005), e-payment in most African countries is either inexistent or practiced in limited circumstances. Most African countries lack the infrastructure and proper legal and regulatory framework for e-payment. E-payment infrastructure such as, internet is not widely available in Africa, bank and other financial institutions are not adequately automated to enable e-banking and e-payment. Legal and regulatory framework is also inexistent in most African countries.

Challenges of electronic payment in Africa

In a study work by Tadesse and Kidan (2005) the following have been identified as barriers for the introduction, adoption and growth of electronic payments in the African context:

- Most banks in Africa do not deliver credit cards
- Behavioral constraints: the fact that African society is cash based, people are accustomed to using cash for most of their transactions.
- Banks attitude: African banks are very conservative; they use very few innovative products and marketing techniques.
- Lack of confidence: the security issue is one of the major challenges in the development of e payments in Africa.

2.11. E-Payment in Ethiopia

In Ethiopia private, public banks and other financial institutions are operating today. Despite a rapid increase in the number of financial institutions the Ethiopian e payment system is still underdeveloped compared to the rest of the world. Cash is still the dominant medium of

exchange. Currently commercial bank of Ethiopia provides e payment services. The common banking functions provided by public and private banks in Ethiopia are deposit mobilization, credit allocation, money transfer and safe custody. Commercial bank of Ethiopia is the pioneer to introduce e payment system in 2003 by eight Automatic teller machines (ATMs). Tuesday, 19 June 2012 Commercial Bank of Ethiopia announced the launch of internet banking services for the 74 branches connected through integrated banking solutions (Core Banking). The bank will offer the service to individual customers as well as to companies. The new system operates on any device that is able to support an internet browser and makes use of anti hacking and anti E-theft systems building up on the experience of Asian and European banks. The internet banking system put in place by the commercial bank also has strict customer authentication methods as well as building a significant Information technology architecture. The new online service will allow clients to send money, keep track of their accounts, check on the status of loans, and transfer money between personal accounts or to the account of another bank customer. The service also allows customers to pay utility bills such as electricity, water and telephone online. The internet banking project took eighteen months to realize beginning from the selection of technology and including development and deployment in the 74 CBE branches which have implemented CORE banking solutions. CBE anticipates that more than 100,000 of its customers will be able to make use of the newly offered internet banking service initially. (en.wikipedia. org/wiki/online.banking).

E payment which refers to the use of modern technology that allows customers to access banking services electronically whether it is to withdraw cash, transfer funds, to pay bills, or to obtain commercial information and advices are not known in Ethiopia at the early stage but at this time commercial bank of Ethiopia provides the modern E-payment technologies like ATM, Debit card, Credit card, Tele banking, Internet banking, Mobile banking and Point of sale. Banking through mobile phones lets people take part in financial services even if they are not near a bank. Until recently, Ethiopia and Zimbabwe were the only nations in Africa without mobile money services. Now, that has changed for Ethiopia. BelCash and M-Birr are mobile banking technology providers. They have been setting up mobile banking and mobile money services in Ethiopia for the past three years. The Dutch company BelCash is working in partnership with banks to provide easier access to financing through bank accounts. Ireland based M-Birr is a mobile money service that works with microfinance groups where no registration with a bank is

needed. Ethiopia's mobile phone industry is young. And wireless service coverage in the county is not well developed. The pressure on the wireless network is expected to increase. The National Bank of Ethiopia recently finished a draft order on how mobile banking services should be structured. This comes as international companies have shown interest in starting mobile banking services. (en.wikipedia.org/wiki/online.banking).

2.12 E-Payment Products in Ethiopia

2.12.1 Automated Teller machine (ATM)

These are cash dispensing machine, which are frequently seen at banks and other locations such as shopping centers and building societies. Their main purpose is to allow customer to draw cash at any time and to provide banking services where it would not have been viable to open another branch e.g. on university campus. CBE is the pioneer in introducing ATM service for local users in 2001 with its fleet of eight ATMs located in Addis Ababa. An automated teller machine or ATM is a computerized telecommunications device that provides a financial institution's customers a method of financial transactions in a public space without the need for a human clerk or bank teller. Reliable is a visa branded debit card issued by CBE to facilitate the exchange of funds without paper or hard copy. It is either domestic or international. The domestic card is valid only in Ethiopia while the international card is used to make international transactions. (http://www.combanketh.et). Security is provided by the customer entering a personal identification number (PIN). Using an ATM, customers can access their bank accounts in order to make cash withdrawals (credit card cash advances) and check their account balances. Many ATMs also allow people to deposit cash or checks, transfer money between their bank accounts, pay bills, or purchase goods and services, forex, mobile top up. Some of the advantages of ATM to customers are:- (http://www.combanketh.et)

- Provides 24-Hours access to accounts.
- Ability to draw cash after normal banking hours
- Quicker than normal cashier service
- Complete security as only the card holder knows the PIN
- Does not just operate as a medium of obtaining cash

2.12.2 Mobile Banking

Mobile banking is relatively new Electronic Banking Product. However it is fastly becoming one of the most popular products. Customer can perform a number of transactions from the convenience of their own home or office; in fact from anywhere they have access to phone.

Customers can do following!-

> Check balances and statement information
> Transfer funds from one account to another
> Pay certain bills
> Order statements or cheque books

Mobile banking comes in as a part of the banks initiative to offer multiple channels banking providing convenience for its customer. A versatile multifunctional, free service that is accessible and viewable on the monitor of mobile phone. (en.wikipedia.org/wiki/online. banking).

CBE mobile banking service provides customers with application based (http and downloadable channel) and SMS based mobile banking services. At this time mobile banking users in CBE are 50,000 and more than 780 branches out of this 468 are online or use mobile banking service. In general CBE Mobile banking services include: (http://www.combanketh.et)

> My account: you can view your account balance
> Account transaction: you can view the last 6 transactions you made with the latest at the top of the list.
> Own account transfer
> Pay beneficiary

2.12.3 Internet Banking

The advent of the internet and the popularity of personal computers presented both an opportunity and a challenge for the banking industry. For years, financial institutions have used powerful computer networks to automate million of daily transactions; today, often the only paper record is the customer's receipt at the point of sale. Now that their customers are

connected to the internet via personal computers, banks envision similar advantages by adopting those same internal electronic processes to home use. Banks view online banking as a powerful "value added" tool to attract and retain new customers while helping to eliminate costly paper handling and teller interactions in an increasingly competitive banking environment. (En.wikipdia.org/wiki/online. banking).

Services of Commercial bank of Ethiopia internet banking includes:

> Account balance
> Messages
> Create/view/and cancel standing orders
> Create/view/delete beneficiary (for payment)
> Payment etc...

2.12.4 Point of sale (PoS)

A point of sale (PoS) terminal is a portable electronic device that enables the processing of credit and debit card payments for products and services at retail locations. The PoS terminal provides a convenient, modern and efficient means of processing payment online in real-time.

Features of the PoS

- Fast processing: The transactions can be processed within four-to-eight seconds via an internet connection
- Multi card acceptability: the PoS terminal accepts all cards including international Visa and master Card debit/credit cards and all local debit/credit cards
- EMV compliant: The PoS terminal is EMV compliant and accepts the more secure Chip and Pin cards that prevent fraud
- Online real-time reporting and quicker balancing: the terminal conveniently views real-time data, search transactions, customizes reports and analyze sales trends
- Newest technology: the PoS uses the latest equipment, including up-to-date software designed to help reduce fraud and enhance data security. (en.wikipedia.org/wiki/online. banking)
  (http://www. combanketh. et)

2.13 E-payment system Challenges in Ethiopia

According to Garadahew worku, (2010) E-payment in Ethiopia faces numerous challenges to fully implement it. In general Challenges for e-payment system in Ethiopia are:

- Low level of Internet connection and poorly developed telecommunication infrastructure is a major challenge.
- High rates of illiteracy. Low literacy rate are a serious impediment for the adoption of E-payment in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-payment, they should not only know how to read and write but also possess basic ICT literacy.
- High cost of Internet access relative to per capital income is critical factor compared to the developed countries, are higher costs of entry into the e-commerce market in Ethiopia.
- Electric power interruption. Lack of reliable power supply is a key challenge for smoothly running e-payment in Ethiopia.
- Cyber security issues is a global challenge that requires global and multidimensional response with respect to policy, socio-economic, legal and technological aspects, e-banking applications respect a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, businesses and potentially harm banking customers. It is imperative for bank to understand and address security concerns in order to leverage. The potentials of ICTs in delivering e-payment application
- Lack of awareness on the benefits of new technologies
- Fear of risk: Because most transactions or buying selling activities takes place in cash.

2.14 Prospects of E-payment

According to Garedachew worku (2010) study the following points are prospects of e-payment development:-

> Opportunities offered by ICT through e-learning programs.

> World bank and other responsible organizations are helping developing countries to design national e-strategies

> Commitments of the governments. The Ethiopian governments consider ICT as an indispensible tool to alleviate poverty and facilitate a state transformation aiming an effective and efficient service delivery.

> Create awareness on the society regarding to e-payment.

> Enhance ICT infrastructure

> Sharing of experience developing countries regarding to e-payment

> Promote how e-payment makes life easier.

CHAPTER THREE

DATA PRESENTATION ANALYSIS AND INTERPRETATION

3.1 Introduction

This chapter is concerned with data presentation and analysis on the basis of data gathered via questionnaire and unstructured interview method. Four types of questionnaire were prepared and distributed. The first type of questionnaire was distributed to e-payment department staffs, the second type of questionnaire was distributed to Automatic Teller Machine (ATM) users, the third and the forth type of questionnaire was distributed to mobile banking and internet banking users respectively. The student researchers used unstructured interview to gather information from E-payment area staffs. The total number of questionnaire distributed were 115, among which 15 were to e-payment department staffs, 50 were to ATM (Automatic Teller Machine) users, 30 were to internet banking users and 20 were to mobile banking users. Out of these 2 questionnaires from e-payment staff, 5 questionnaires from mobile banking and 16 from internet banking not returned because un willingness of the respondents, un capable of answering the question.

Table 3.1 General characteristics of e-payment department staffs

General Information

Item	Options	Frequency	Percentage
Gender	Female	10	76.9%
	Male	3	23.1%
	Total	13	100%
Age	18-25	3	23.1%
	26-34	7	53.8%
	35-45	3	23.8%
	Above 45	-	-
	Total	13	100%

(Source, on survey)

The above table shows that out of 13 respondents 10 (76.9%) are male and 3 (23.1%) of them are female. As it is shown on the table female are less in number, this means most of the jobs are occupied by male employees.

As depicted on table 3.1 23.1% of respondents are between 18-25 years old, 53.8% of respondents between 26-34 years old and 23.1% of respondents are between 35-45 years old. This shows that the age of most of the respondents work in e-payment area lies between the age group 26-34.

Table 3.2 Educational status

Item	Frequency	Percentage
Less than 12 grade	-	-
12 grade completed	-	-
Diploma	1	7.7%
1st degree	12	90.3%
2nd degree and above	-	-
Total	13	100%

(Source, on survey)

As shown on table 3.2 out of 13 respondents 1(7.7%) are diploma holder and 12 (92.3%) of the respondents have first degree. None of the respondents are below diploma. From this it is expected that respondents will provide the required information with reasonable precision.

Table 3.3 Work experience in the bank

Item	Frequency	Percentage
Below 2 years	1	7.7%
2-5 years	5	38.4%
Above 5 years	7	53.8%
Total	13	100%

(Source, on survey)

As depicted on table 3.3 1(7.7%) of the respondent were below 2 years of work experience, respondents lies between 2-5 years of experience is 5 (38.4%) and above 5 years of work experience are 7 (53.8%) of respondents. This implies majorities of the respondent are rich in experience and will provide the required information with detail.

3.2 Analysis of the study

The student researcher examines the challenges and prospects of e-payment system in the case of Commercial Bank Ethiopia from the point of view of e-payment staffs and users of e-payment system. To this end many questions was given to e-payment users and staffs related to challenges and prospects of e-payment system. Thus in this section responses from employees and users are summarized in the form of table.

Table 3.4 E payment service

Description	Frequency	Percentage (%)
How do you rate the current e-payment service given by your organization?		
Very good	7	54.2
Good	5	38.8
Fair	1	7.7
Poor	-	-
Very poor	-	-
Total	13	100

(Source, on survey)

As indicated on table 3.4, Employees were asked about the current e-payment service given by the organization; accordingly no respondents rated this service as poor and very poor. While 7(54.2%), &1(7.7%) rated the service as, very good, good, and fair respectively. Majority of respondents indicated that the current e-payment service is good. This is because CBE first start the e-payment service with ATM and know it is introduce other e-payment service such as, mobile and internet banking at a time.

Table 3.5 convenience and appropriateness.

Description	Frequency	Percentage (%)
How do you rate the convenience and appropriateness of CBE's organizational structure to the E payment users?		
Very good	8	61.5
Good	4	30.8
Fair	-	-
Poor	1	7.7
Very poor	-	-
Total	13	100

(Source, on survey)

As shown on table 3.5, employees were asked about the convenience and appropriateness of CBE's organizational structure to the e- payment users, 8(61.5%) of the respondents rated it as very good, 4(30.8%) of respondents rated it as good, and 1(7.7%) of the respondents rated it as poor. This implies that CBE's organizational structure is appropriate and convenient to e-payment users. Because the customers were able to get the service at a time they want effectively anywhere and also CBE spreading out the e- payment service within the whole country to address the customers need. The reason for this is that the organizational structure starting from president to several E payment departments is accomplishing each and every task effectively.

Table 3.6 personnel competence.

Description	Frequency	(%)
How do you rate your office personnel competence in doing their e-payment activities effectively?		
Very good	9	69.2
Good	3	23.1
Fair	-	-
Poor	1	7.7
Very poor	-	-
Total	13	100

(Source on survey)

According to table 3.6 employees' were asked about office personnel competence in doing their e-payment activities effectively, 9(69.2%) rated it as very good, 3(23.1%) rated it as good, and

1(7.7%) rated it as poor. This implies that the employees of the organization have a good personnel competence. The respondents who rated it as a good personnel competence justified their response by highlighting the effectiveness of doing their duties, ethics, and punctually.

Table 3.7 Infrastructural facilities

Description	Frequency	(%)
How do you rate the infrastructural facilities for e payment in our country?		
Very good	3	23.1
Good	4	30.8
Fair	2	15.4
Poor	3	23.1
Very poor	1	7.7
Total	13	100

(Source on survey)

From table 3.7 Employees were asked about the infrastructural facilities for e payment in our country; from the asked employees, 3(23.1%) rated it as very good, 4(30.8%) rated it as good, 2(15.4%) rated it as fair, 3(23.1%) rated it as poor and 1(7.7%) rated it as very poor. The respondents showed the existence of insufficient infrastructural facilities and justified their response by highlighting network connection, failure of electric power and other materials important for this service.

Table 3.8 Effectiveness of e-payment

Description	Frequency	(%)
How do you rate the effectiveness of utilizing e payment in your organization?		
Very good	6	46.2
Good	7	53.8
Fair	-	-
Poor	-	-
Very poor	-	-
Total	13	100

(Source on survey)

According to table 3.8, employees were asked about effectiveness of utilizing e- payment in the organization; from the asked employees 6(46.2%) rated it as very good, and 7(53.8%) rated it as good accordingly no respondents answered fair, poor and very poor. This indicates that the utilization of e payment is enhancing the performance of the banks by satisfying the needs of customers at any time anywhere, by minimizing the lining up of the customers in the branch and also by reducing the cost for print out like paper and ink.

Table 3.9 E- payment security

Description	Frequency	(%)
How do you rate e payment service in terms of security?		
Very good	7	53.8
Good	5	38.4
Fair	1	7.7
Poor	-	-
Very poor	-	-
Total	13	100

(Source on survey)

As indicated on table 3.9, employees were asked about e-payment service in terms of security; from the asked employees 7(53.8%) rated it as very good 5(38.4 %) rated it as good, 1(7.7%) rated it as fair. This implies the e-payment service is secured. The respondents who rated it as secured justified their response by highlighting the implementation of passwords, to access programs, and support the organization is getting from INSA (Information Networking Security Agency) regarding security issues.

Table 3.10 Customer's attitude

Description	Frequency	(%)
How do you rate the level of customer's attitude towards e payment?		
Very good	-	-
Good	6	46.15
Fair	5	38.45
Poor	2	15.38
Very poor	-	-
Total	13	100

(Source on survey)

As indicated in table 3.10, employees were asked about the level of customer's attitude towards e-payment, from the asked employees 6(46.15%) rated customers attitude as good, 5(38.46%) rated it as fair, and 2(15.38%) rated it as poor. Based on this it can be said that customers currently have a good attitude towards e-payment due to extensive awareness creation activity such as advertizing in Medias, broachers and other techniques.

Table 3.11 Challenges of electronic payment

Item	Description	Yes	%	No	%
		Frequency		Frequency	
1	Challenges that CBE faced in establishing e-payment	7	53.8%	6	46.2%
2	Is there any challenge CBE is facing in running e-payment	8	61.53%	5	38.47%

(Source on survey)

As indicated on table 3.11 of item 1, employees were asked about challenges that CBE faced in establishing e-payment: from the asked employees, 7(53.8%) of respondents indicated that there was a challenge justified their response by highlighting, establish awareness across the

customer, updating the customer penetrating the card system that may occur after 6 months if it remains in active and also as any new system public taught it is in secured.

As indicated on table 3.11 item 2, employees were asked about challenges CBE is facing in running e-payment, from the asked employees there is no response from 2 respondents. Majority of the respondents indicated that there is a challenge in running e payment justified their response by highlighting network problem, awareness of the people, shortage of trained man power, and maintenance of machinery.

3.2.1 Prospects of e-payment development

In addition to rating question there were open-ended questions that have been raised to the respondents based on their opinion. So that, the respondents answered regarding prospects of e-payment development as:

- Up grading in materials and man power
- Developing of the network facility and electronic power stability
- Creating awareness through advertisement.
- By giving training to internal employees and e-payment technical team

3.3 ATM user's response

Table 3.12General Characteristics of the ATM users

Item	Options	Frequency	Percentage
Gender	Female	9	18%
	Male	41	82%
	Total	50	100%
Age	18-25	24	48%
	26-34	24	48%
	35-45	2	4%
	Above 45	-	-
	Total	50	100%

(Source, on survey)

The above table shows that out of 50 respondents 9(18%) are female and 41(82%) are male. This implies female respondents are less in number, so it can be said that most of ATM (Automatic Teller Machine) users are male.

As indicated on table 3.12, 24(48%) of respondents are between 18-25 years old, 24(48%) of respondents are between 26-34 years old, and 2(4%) of the respondents are between 35-45 years old. This implies most ATM users are in the younger age group.

Table 3.13 Educational status

Item	Options	Frequency	Percentage
Educational status	Less than 12 grade		
	12 grade completed	1	2%
	Diploma	7	14%
	1st degree	41	82%
	2nd degree and above	1	2%
Total		50	100%

(Source, on survey)

As shown on table 3.13, out of 50 respondents, 1(2%) of the respondent is 12 grade completed, 7(14%) of the respondents have diploma, 41(82%) have 1st degree, and 1 (2%) of the respondent is 2nd degree and above. This implies majority of the respondents have first degree. From this it is expected that respondents will provide the required information with reasonable precision.

Table 3.14 Change in day to day activity.

Description	Yes		No	
	Frequency	%	Frequency	%
Have you observed a change in your day to day business activities before and after using the visa card?	45	90	5	10

(Source on survey)

According to table 3.14 users were asked about impacts of ATM visa card service on day to day business activity; 45(90%) of the respondents indicated that visa card service is important for day to day business activity, while the rest highlighted the fact that ATM service has no significant effect on their day to day activities because the connection is sometimes out of service.

Majority of respondents justified their response by raising convenience and access to money as major reason.

Table 3.15 Adequate training and amount of money

Item	Description	Yes		No	
		Frequency	%	Frequency	%
1	Do you gate adequate training from CBE before using visa card?	19	38	31	62
2	Do you think the amount of birr authorized for ATM per day is adequate?	22	44	28	56

(Source on survey)

As shown on table 3.15,item 1, ATM users were asked about adequate training from CBE before using the service, 19 (38%) of respondents indicated that CBE provide orientation before the service is delivered , while the rest highlighted the inadequacy of training and justified their response by learned from friends, and by reading broachers related with the service.

As indicated on table 3.15,item 2, 22(44%) of respondents indicated their comfort with the amount of money they have access per withdrawal, while the rest highlighted the fact that the authorized amount is insufficient in helping them meet their goals.

Table 3.16 Challenges in using visa card and POS (Point of sale) terminal

Item	**Description**	**Always**		**Usually**		**Sometimes**		**Rarely**		**Never**	
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No**	**%**
1	How often do you face any challenges in using CBE visa card?	5	10	8	16	29	58	7	14	1	2
2	How often do you use your visa card for pos terminal?	3	6	10	20	5	10	4	8	28	56

(Source on survey)

As shown on table 3.16,item 1, ATM users were asked about challenges in using CBE visa card, 5 (10%) rated challenges as always, 8(16%) rated it as usually, 29 (58%) rated it as sometimes, 7(14%) rated it as rarely and 1 (20%) rated it as never. Based on this response it can be said that majority of ATM users sometimes face challenges when a network is unavailable, if there is technical problem on the machine, when the machine does not have enough money and a time of taking the card.

As shown on table 3.16,item 2, ATM users were asked about how often do you use your visa card for pos terminal, 3(6%) rated it as always, 10(20%) rated it as usually, 5(10%) rated it as sometimes, 4(8%) rated it as rarely and 28(56%) rated it as never. This implies that majority of the respondents does not use their visa card for pos terminal because this terminal is not available everywhere.

Table 3.17 Respondents response on ATM

Description	**Always**		**Usually**		**Sometimes**		**Rarely**		**Never**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No**	**%**
How often do you get help when you need while using ATM?	11	22	14	28	8	16	10	20	7	14

(Source on survey)

As shown on table 3.17, 11(22%) of respondents rated the help they get on ATM as excellent, 14(28%) rated it as usually, 8(16%) rated it as sometimes, 10(20%) rated it as rarely and 7(14%) rated it as never. The majority of the respondents indicated that they will get help at any time of using ATM, while the rest highlighted that they do not get any help when using ATM machine.

Table 3.18 The level of awareness

Description	Frequency	(%)
How do you rate the level your of awareness about visa card service?		
Very good	34	68
Good	10	20
Fair	4	8
Poor	2	4
Very poor	-	-
Total	50	100

(Source on survey)

As indicated on table 3.18, ATM users were asked about the level of awareness on their visa card service; from the asked respondents, 34(68%) rated it as very good, 10(20%) rated it as good, 4(8%) rated it as fair and 2(4%) rated it as poor. This implies majority of the respondents have enough awareness about ATM service, due to experience shared from other users and by reading brouchers towards usage of ATM machine, and password implementation.

Table 3.19 The infrastructural facilities

Description	Frequency	(%)
How do you rate the infrastructural facilities for visa card in our country?		
Very good	6	12
Good	24	48
Fair	6	12
Poor	12	24
Very poor	2	4
Total	50	100

(Source on survey)

According to table 3.19, ATM users were asked about infrastructural facilities for visa card in our country, from the asked respondents, 6(12%) rated it as very good, 24(48%) rated it as good, 6(12%) rated it as fair, 12(24%) rated it as poor, and 2(4%) rated it as very poor. Majority of respondents showed the existence as insufficient infrastructural facilities and justified their response by highlighting network problem, small number of ATM machine and shortage of electricity.

Table 3.20, ATM in terms of security

Description	Frequency	(%)
How do you rate the automatic teller machine in terms of security?		
Very good	29	58
Good	15	30
Fair	4	8
Poor	1	2
Very poor	1	2
Total	50	100

(Source on survey)

As shown on table 3.20, ATM users were asked about the machine in terms of security, 29(58%) rated it as very good, 15(30%) rated it as good, 4(8%) rated it as fair, 1(2%) rated it as poor, and 1(2%) rated it as very poor.

The respondents who rated it as secured justified their response by highlighting the implementation of passwords and to access programs, while the rest indicated that sometimes there is delay request and extraction.

3.3.1 Prospects of ATM development

In addition to rating question there was an open ended question that has been raised to the respondents based on their opinion. So that, the respondents answered regarding prospects for automatic teller machine (ATM) visa card development as follows:

- Quality and quantity of ATM machine available in every where
- The infrastructures across the country must be improved
- CBE must create awareness on the customers and country side citizens because ATM provides a number of advantages.

3.4 Internet banking users

Table 3.21 General characteristics of Internet Banking users

Item	Options	Frequency	Percentage
Gender	Female	3	21.4%
	Male	11	78.6%
	Total	14	100%
Age	18-25	4	28.6%
	26-34	10	71.4%
	35-45	-	-
	Above 45	-	-
	Total	14	100%

(Source on survey)

The above table shows that out of 14 respondents 3(21.4%) are female and 11 (78.6%) are male. As it is shown on the table female are less in number, this implies most of internet banking user are male.

As depicted on table 3.21, 4(28.6%) of respondents are between 18-25 years old and 10 (71.4%) of respondents are between 26-34 years old. This shows that most of internet banking users lies between the age group 26-34.

Table 3.22 Educational status

Item	Frequency	Percentage (%)
Less than 12 grade	-	-
12 grade completed	-	-
Diploma	-	-
1st degree	11	78.6%
2nd degree and above	3	21.4%
Total	14	100%

(Source on survey)

As show on table 3.22, out of 14 respondents, 11(78.6%) have 1st degree, and 3(21.4%) of the respondents have 2nd degree and above. None of the respondents are below 1st degree from this it is expected that respondents will provide the required information with reasonable precision.

Table 3.23 Change in day to day activity

Description	Yes	%	No	%
	Frequency		Frequency	
Have you observed a change in your day today business activities before and after using internet banking?	11	78.6	3	21.4

(Source on survey)

On table 3.23, internet banking users were asked about the change on their day today business activities, 11(78.6%) of respondents indicated that internet banking has a great impact on their day to day business activities justified their response by the time it saves, accessibility from anywhere, minimize transportation cost, allows access any account and make transaction without going to bank. while the rest highlighted the fact that it doesn't brought any change on their day to day business activity because of network failure .

Table 3.24 Adequacy of training

Description	Yes	%	No	%
	Frequency		Frequency	
Do you get adequate training from CBE before using internet banking?	8	57.1	6	42.9

(Source on survey)

On table 3.24, internet banking users were asked about adequate training from CBE before using the service, 8(57.1%) of respondents indicated that CBE provide orientation before the service is delivered , while the rest highlighted the inadequacy of training and justified their response by learned from friends, and by reading broachers related with the service.

Table 3.25 Challenges of internet banking

Description	Frequency	Percentage
How often do you face any challenges in using CBE internet banking?		
Always	-	-
Usually	2	14.2%
Sometimes	5	35.8%
Rarely	5	35.8%
Never	2	14.2%
Total	14	100%

(Source on survey)

As depicted on table 3.25, 2(14.2%) rated it as usually, 5(35.8%) rated it as sometimes, 5(35.8%) rated it as rarely and, 2(14.2%) rated it as never. The respondents who rated it as face challenges justified their response by highlighting the network connection problem and system complexity.

Table 3.26 The level of awareness.

Description	Excellent		Very good		Good		Fair		Poor		Very poor	
	No.	%	No.	%	No	%	No.	%	No.	%	No.	%
How do you rate the level of your awareness about internet banking?	3	21.4	3	21.4	4	28.6	3	21.4	-	-	1	71%

(Source on survey)

As indicated on table 3.26, internet banking users were asked about the level of awareness, 3(21.4%) rated level of awareness as excellent, 3(21.4%) rated it as very good, 4(28.6%) rated it as good, and 1(7.1%) rated it as very poor. This implies that the respondents are sufficient awareness towards internet banking due to experience shared from other users and by reading broachers.

Table 3.27 Internet banking in terms of security

Description	Excellent		Very good		Good		Fair		Poor		Very poor	
	No.	%	No.	%	No	%	No.	%	No.	%	No.	%
How do you rate internet banking service in terms of security?	3	21.4	4	28.6	6	42.9	-	-	-	-	1	71 %

(Source on survey)

On table 3.27, internet banking users were asked about the internet banking service in terms of security, 3(21.4%), rated the security as excellent, 4(28.6%) rated it as very good, 6(42.9%) rated it as good and 1(7.1%) rated it as very poor. The respondents who rated it as secured justified their response by highlighting the implementation of passwords (constant password and one time password), and support the organization is getting from INSA (Information Networking System Agency) regarding security issues so this shows that the system is secured.

Table 3.28 Availability of network

Description	Excellent		Very good		Good		Fair		Poor		Very poor	
	No.	%	No.	%	No	%	No.	%	No.	%	No.	%
How do you rate the infrastructural facilities for internet banking in our country?	1	7.1			2	14.3	4	28.6	4	28.6	3	21.4

(Source on survey)

As indicated on table 3.28, internet banking users were asked about infrastructural facilities for internet banking in our country, 1(7.1%) rated existing facilities as excellent, 2(14.3%) rated it as good, 4(28.6%) rated it as fair, 4(28.6) rated it as poor, and 3(21.4%), rated it as very poor. This shows the infrastructural facilities for internet banking in our country is poor. The respondents showed the existence of insufficient infrastructural facilities and justified their response by highlighting network connection and materials such as token which is important for this.

3.4.1Prospects of internet banking development

In addition to rating question there was an open ended question that have been raised to the respondents based on their opinion the respondents answered regarding prospects of e-payment development as:-

> Upgrading telecom service.
> By increasing infrastructural facilities
> By Creating awareness

3.4.2 Advantages of internet banking

The respondents answered regarding benefits of internet banking in addition to other payment system as follows;

> It provides 24 hours service
> It saves time, resource
> It can access every where even at home
> Local money transfer, exchange rate information
> My statement and account balance

3.5 Mobile Banking Users

Table 3.29 General characteristics of mobile banking users

Item	Options	Frequency	Percentage
Gender	Female	3	20%
	Male	12	80%
	Total	15	100%
Age	18-25	10	66.67%
	26-34	5	33.33%
	35-45	-	-
	Above 45	-	-
	Total	15	100%

(Source on survey)

The above table shows that out of 15 respondents 3(20%) were female and 12 (80%) were male. This shows female respondents are less in number so that, most of the mobile banking user are male.

On table 3.29, 10(66.67%) of respondents are between 18-25 years old, and 33.33% of respondents are between 26-34 years old. This implies majorities of mobile banking user are in the younger age group.

Table 3.30, Educational status

Item	**Frequency**	**Percentage**
Less than 12 grade	-	-
12 grade completed	-	-
Diploma	-	-
1st degree	14	93.33%
2nd degree and above	1	6.67%
Total	15	100%

(Source on survey)

As shown on table 3.30, out of 15 respondents, 14(93.33%) have 1st degree and 1(6.67%) are 2nd degree and above. None of the respondents are below 1st degree from this it is expected that respondents will provide the required information with reasonable precision.

Table 3.31 Change in day to day business activities

Description	Yes		No	
Have you observed a change in	Frequency	%	Frequency	%
Your day to day business activities?	13	86.67	2	13.33

(Source on survey)

As indicated on table 3.31, mobile banking users were asked about a change in day to day business activity. Majority of respondents indicated that mobile banking has a great impact on their day to day business activities and justified their response by the time it saves, accessibility from anywhere, minimize transportation cost, allows access any account and make transaction without going to bank, while the rest highlighted the fact that it does not brought any change on their day to day business activity because of network failure.

Table 3.32 Adequacy of training

Description	Yes		No	
Do you get adequate training from	Frequency	%	Frequency	%
CBE before using mobile banking?	10	66.67	5	33.33

(Source on survey)

On table 3.32, respondents were asked about CBE provide adequate training before using mobile banking, 10(66.67%) of respondents indicates that CBE provide orientation before the service is delivered, while the rest highlighted the inadequacy of training and justified their response by learned from friends, and by reading broachers related with the service.

Table 3.33 Challenges of mobile banking

Description	Always		Usually		Sometimes		Rarely		Never	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
How often do you face any challenges in using CBE mobile banking?			3	20	8	53.33	3	20	1	6.67

(Source, on survey)

As indicated on table 3.33, respondents were asked about challenges in using mobile banking; from the asked users, 3(20%) rated it as usually, 8(53.33%) rated it as sometimes, 3(20%) rated it as rarely and 1(6.667%) rated it as never. Majority of respondents justified their response by highlighting network connection, lack of knowledge and awareness.

Table 3.34 The level of awareness

Description	Frequency	(%)
How do you rate the level of your awareness about mobile banking?		
Very good	10	66.67
Good	3	20
Fair	2	13.33
Poor	-	-
Very poor	-	-
Total	15	100

(Source on survey)

According to table 3.34, mobile banking users were asked about the level of awareness, from the asked users 10(66.67%) rated it as very good, 3 (20%) rated it as good, and 2(13.33%) rated it as fair. This shows majority of mobile baking users have sufficient awareness, because the bank uses different method to enhance the user's attitude such as advertizing in Medias, broachers and others.

Table 3.35 Mobile banking in terms of security

Description	Frequency	(%)
How do you rate the mobile banking service in terms of security?		
Very good	10	66.67
Good	5	33.33
Fair	-	-
Poor	-	-
Very poor	-	-
Total	15	100

(Source on survey)

On table 3.35, users were asked about the mobile banking service in terms of security, , 10(66.67%) rated it as very good, and 5(33.33%) rated it as good. The respondents who rated it as secured justified their response by highlighting the implementation of passwords and support the organization is getting from INSA (Information Networking System Agency) regarding security issues so this shows that the system is secured.

Table 3.36 Infrastructural facilities

Description	Frequency	(%)
How do you rate the infrastructural facilities for mobile banking in our country?		
Very good	1	6.67
Good	7	46.67
Fair	2	13.33
Poor	5	33.33
Very poor	-	-
Total	15	100

(Source on survey)

As shown on table 3.36, users were asked about the infrastructural facilities for mobile banking in our country, 1(6.67%) rated existing facilities as very good, 7(46.67%) rated it as good, 2(13.33%) rated it as fair, and 5 (33.33%) rated it as poor. Majority of the respondents indicates that as an introduction the infrastructural facilitates is good.

3.5.1 Prospects of mobile banking development

In addition to rating question there were two open ended questions that have been raised to the respondents based on their opinion. So that, the respondents answered regarding prospects for mobile banking development as follows:

- Creating awareness by advertisement, or by other techniques
- Reducing network related problems in collaboration with telecommunication
- By preparing own network infrastructure for the banking service exclusively

3.5.2 Benefits of mobile banking

In addition to rating question there was an open ended question that has been raised to the respondents based on their opinion. So the respondents answered regarding benefits of mobile banking.

- Knowing bank balance
- Getting the bank access in home
- Own account transfer
- Account transaction
- Save time
- Easy to use and accessibility

CHAPTER FOUR

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The objective of this study is to assess challenges and prospects of e-payment in Commercial Bank of Ethiopia. Accordingly the researchers gathered data through secondary and mainly through primary sources and conducted analysis to spot out major findings. In this chapter the researchers summarize the major findings, conclusions and recommendations.

4.1 Summary

The points below are the summary of major findings derived from the data gathered and analyzed.

- Commercial Bank of Ethiopia is the first bank to introduce ATM Service in 2003.
- According to the analysis 76.9% of e-payment staff are male.
- According to the analysis 82%, 78.6%, and 80% of ATM, internet, and mobile banking users are male respectively.
- As the result of the analysis, 90.3%, of e payment staff have 1st degree.
- According to the analysis 82 %, 78.6% and 93.33% of ATM, internet, and mobile banking users have 1st degree respectively.
- 53.8% of e-payment staff have more than 5 years work experience.
- According to the study 38.8% of e-payment area staff confirmed that the current e-payment service given by the organizations is good.
- According to the analysis 61.5% of e-payment staffs showed CBE's organizational structure is convenience and appropriate to e-payment users.
- According to the study 46.1% of respondents indicate that the department is organized with experienced personnel that enable the corporation to fulfill its goal effectively.
- The study revealed that the current infrastructural facility for e-payment in our country is poor. For example network connection, failure of electric power and others.
- According to the study 53.8% of e-payment departments staffs indicated that effectiveness of e-payment in the organization is good.
- 46.1% of the respondents rated the banks payment service as very good in terms of security because the bank uses different technique to secure the service.

- According to the study 46.15% of e-payment staffs confirmed that customers currently have a good attitude towards e payment due to extensive awareness creation activity.
- The study indicates that there was a challenge when establishing e-payment for example; establishing awareness across the customer, updating the customer penetrating the card system that may occur after 6 months if it remains in active and as any new system public taught it is unsecured.
- According to the study 61.53% of e payment staffs facing a challenge when running the service. Some of these are network problem, awareness of the people, storage of trained manpower and maintenance of machinery.
- According to the study, considerable number of e-payment users confirmed that CBE give training before the service is delivered but it is not adequate.
- 56% of ATM user does not use their visa card for (POS) point of sale terminal.
- Another major finding revealed that 58% of ATM users facing challenge in using CBE Visa Card for example, when the machine does not have enough money, when a network is unavailable.
- According to the gathered information 56% of respondents indicated that the amount of money authorized for ATM per day is not adequate.
- The benefits of internet banking and mobile banking is:
    - Providing 24 hours service
    - Saving time, resources
    - Accessing your money anywhere ever at home
    - My statement and account balance
    - Local money transfer, exchange rate information.

4.2 Conclusions

All data analysis and detailed discussion made in preceding part of this study are a means to lead the researchers to possible conclusion and recommendation.

- Most of the e payment users are male, and lies between the age group 26-34.The majority of respondents are 1st degree holders. In addition to this more of the department employees served the organization more than 5 years. The student researchers concluded that the e-payment department has sufficient skill and good qualification.
- According to the study the customer's attitude towards e payment system is sufficient but the bank does not give adequate training for users before the service is delivered. Therefore, the student researchers concluded that CBE does not work properly on this area.
- The study revealed that the current e- payment service given by the organization is rapidly increasing, for instance the first e- payment service was ATM, but at this time start mobile and internet banking. Therefore, the student researchers concluded that the future of e-payment is bright.
- The utilization of e-payment is enhancing the performance of the banks by satisfying the need of customer at any time anywhere and by minimizing the lining up of the customers in the branch. Therefore, the researchers concluded that e-payment is one factor to increase the performance of the organization.
- The study revealed that all e-payment services provided by CBE are secured. Therefore, the researchers concluded that the organization have better security system.
- According to the study the prospects of e-payment development is upgrading in materials and man power, developing the network facility and electrical power stability, preparing own network infrastructure for the banking service exclusively, Therefore the researchers concluded that the banks current activity is good but for better result the bank must give emphasis on the above points.
- The fact that the e-payment users and staffs facing challenges while using the payment system this lead us to conclude the infrastructural facilities for e- payment is not fulfill, such as, network problem, failure of electric power and awareness of the customer so that to solve this problem the following recommendations is forwarded.

4.3 Recommendations

In order to promote and develop viable e-payment in CBE the following recommendations are forwarded:

- The bank should work strongly in collaboration with ethio telecom to develop alternative network lines rather solely relaying on telecommunication networks which have frequent link failure.
- Another important factor related to the e-payment infrastructure is the reliable supply of electric power. The frequent interruption of electric power is a challenge by itself. So that, CBE should have standby generators which provide service when there is no power.
- It is indispensable for the improvement of society's social and economic life to raise public awareness of the benefits of new technologies such as computer enabled networks, due attention as an important part of their task. Managers of financial institutions such as banks should be bold enough to invest on ICT equipment and manpower training in the field to ensure competitiveness in modern world.
- Enterprises should also acquire the POS (point of sale) device to make it possible for customers to pay for goods and services using their visa card.
- The bank should also facilitate training programs for employees of the bank to increase their knowledge on the filed.
- Banks and other financial institutions in their own way should embark on educational campaigns to increase the public awareness about the benefits of e-payment. This will help to create a cashless society, reduce risk of being lost or stolen, and mitigate long queues in transacting business among others.
- The bank should provide adequate training for all it's a payment customer before delivering the service.
- The bank is currently working towards customer's attitude on e-payment system but for a better result the bank should have to supply a continuous awareness creation to satisfy the user need.

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APPENDICES

SUBMISSION APPROVAL SHEET

This paper has been submitted for examination with our approval as advisor.

Name:_____

Signature:_____

Place of submission _____

Date:

STATEMENT OF DECLARATION

We, the undersigned declare that this senior essay/project is our original work prepared under the guidance or advisor, Ato Binyam Aragaw. All sources of materials used for the manuscript have been duly acknowledged.

Name:_____

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