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CHALLENGES AND OPPORTUNITIES OF AUTOMATIC TELLER  
MACHINE (ATM) ON WEGAGEN BANK SHARE COMPANY.

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JUNE 2014

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# Table of contents

## Title page

Acknowledgment-----	I
Table of content-----	II
List of table and figures-----	V
Acronyms-----	VI
Chapter one	
Introduction	
1.1 Background of the study-----	1
1.1.1 Branch network-----	2
1.1.2 Ict (information and communication technology-----	2
1.2 Statement of problem-----	3
1.3 Research question-----	3
1.4 Objective of the study-----	4
1.4.1 General objective-----	4
1.4.2 Specific objective-----	4
1.5 Significant of the study-----	4
1.6 Scope of the study-----	4
1.7 Definition of terms-----	5
1.8 Research design and methodology-----	5
1.8.1 Research design-----	5
1.8.2 Population and sample technique-----	5
1.8.3 Types of data collected-----	6
1.8.4 Methods of data collection-----	6
1.8.5 Method of data analysis-----	6
1.9 Limitation of the study-----	6
1.10 Organization of the paper-----	7

## Chapter two

### REVIEW OF RELATED LITERATURE

2.1 An over view of e-commerce-----	8
2.1.1 Definition of e-commerce-----	8
2.1.2 Advantages and limitations of e-commerce-----	11
2.1.3 Value chain in e-commerce-----	15
2.1.4 Integrating e-commerce-----	16
2.2 An over view of electronic payment-----	18
2.3 Types of electronic payment media-----	20
2.3.1 Trusted third partytype(TTP)-----	20
2.3.2 Notational fund transfer-related type-----	21
2.3.3 Digital cash or electronic money-----	21
2.4 Payment fromthree perspectives-----	25
2.4.1 Merchant-----	26
2.4.2 Customer-----	26
2.4.3 Financial service provider-----	26
2.5 The financial service provider as a risk manager-----	27
2.6 Characteristics of payment system-----	28
2.7 Challenges of e-payment-----	31
2.7.1 Security-----	31
2.7.2 Infrastructure-----	33
2.7.3 Regulatory and legal issues-----	33
2.7.4 Socio cultural challenges-----	34
2.7.5 Resistance to changes in technology among customers and staff-----	35
2.7.6 ICT equipment costs-----	35

2.7.7 Non-readiness of banks and other stake holders(acceptability)-----	35
2.8 Opportunities of e-payment-----	36
Chapter Three	
DATA REPRESENTATION, ANALYSIS, AND INTERPRETATION	
3.1 Introduction	
3.2 Data collected from secondary sources-----	39
3.3 Data collected from primary sources-----	39
3.3.1 Analysis of questions related to electronic payment system-----	40
Chapter Four	
SUMMARY, CONCLUSION, AND RECOMMENDATION	
4.1 Summary-----	48
4.2 Conclusion-----	49
4.3 Recommendations-----	51
Bibliography	
Appendices	

List of tables and figures

List of tables

Table1.Written electronic payment systems and procedures and efficiency in dealing with conventional(traditional) payments systems-----37

Table2.Draw backs of traditional payment system-----37

Table3.Employess knowledge about electronic payment system and the importance of electronic payment for the bank-----38

Table4.Issue realated with the important of to make the whole system computerazid-----39

Table5.Easiness of ATM and effect of language in the ATM-----42

Table6.The requirement to be ATM card holder-----43

List of diagrams

Figure1.Rate of employess skill in electronic(autaomated)payment system-----39

Figure2.Challenges in relation to electronic payment in the bank-----40

Figure3.Opportunites of e-payment to the bank-----41

Figure4.Challenges of electronic payment-----43

Figure5.Opportunites in relation to electronic payment-----44

### **List of Acronym**

ICT -Information Communication Technology

SWIFT -Society for Worldwide Interbank Financial Telecommunication

ATM- Automatic Teller Machine

DB-Domestic Banking

DIB-Department and International Banking Department

# Chapter One

## 1.1 Background of the Study

E-payment are payments that are made directly to payee from your bank accounts using security features over the internet to process positive Transaction on internet.

E-payment is a subset of an e-commerce transaction to include electronic payment for buying and selling goods or service offered through the internet.

E-payment is a way of paying for goods or service electronically instead of using cash or a check, in person or by mail.

Information and communication have a vital role in a society's social, political and economic activities. In the modern economy, information is used as an input like natural resources, labour capital and entrepreneurship. However, it happens to be unique from other resources in the sense that it can be used, reused, processed, shared and exchanged without losing value. The incredible growth and sophistication of Information Communication Technology (ICT) is changing the society's way of life throughout the world.

The success and growth of e-commerce, which yielded from the development in ICT, depend on efficient e-payment system. The slogan- 'it is no e-commerce, if you cannot get paid' witnesses the importance of e-payment for e-commerce. E-payment, the electronic transfer of value, in turn depends on secure ICT infrastructure, efficient legal and regulatory administration and widespread awareness among the public and business. (Wondwossen et al., 2005)

This study was designed to assess the challenges and opportunities of e-payment in the case of Wegagen Bank S.C. Wegagen Bank is one of the private banks in the Ethiopia. Currently, the bank is playing a significant role in deposit taking, credit extension, E-payment such as, SWIFT (Society for

Worldwide Interbank Financial Telecommunication), various International Money Transfer Mechanisms, Card Based payments, Automatic Teller Machine (ATM) services. The bank is also working as an intermediary of Foreign Trade of the country.

Wegagen Bank is a privately owned share company which started operations on June 11, 1997 with a subscribed capital of Birr 60 million and a paid up - capital of Birr30 million. The number of shareholders reached 2,130 while the total capital (including paid-up capital, share premium and legal reserves) reached over Birr 1.5 Billion as at March 31, 2012

#### **1.1.5 Branch Network**

Wegagen Bank has a network of 63 branches of which 28 are in Addis Ababa and the remaining 35 are located in other cities and towns of the country. Expansion of the network of branches will be pursued appropriately.

#### **1.1.6 ICT (Information & Communication Technology)**

Wegagen Bank is a pioneer Bank to introduce a core banking system in July 2000, thereby managed to network the Head Office organs, City Branches and some of the Outlying Branches.

At present, migration of the existing Core Banking System into a more versatile and ISO-standard solution is completed.

The Bank has also implemented a full-fledged Card Payment System, enabling its customers to get 24/7 banking services, on its ATM network, and on POS Terminals, as well.

E-payment system was first introduced in Ethiopia by Dashen Bank in March 2005. Then the Commercial Bank of Ethiopia, in 2009, and Wegagen Bank Share Company (S.C.), in November 2010 have followed it. Currently almost all the banks provide their customers with the e-payment services. However this does not mean Ethiopia is enjoying the advanced e-payment system the way the rest of the world is doing([www.wegagenbanks.com](http://www.wegagenbanks.com)).

## **1.2 Statement of the Problem**

E-payment is the financial exchange that takes place between buyer and seller. Electronic payment brings difference among business enterprises. The growth of internet and World Wide Web made e-commerce possible; however, the success of e-commerce strongly depends on e-payment system. Besides, the increased uses of new communication mechanisms have led to development of e-payment. Whenever payments are transferred electronically, their efficiency gets increased, transaction costs become reduced, and the paying becomes convenient.

However many customers of several banks are seen complaining about the qualities and effectiveness of the e-payment services they are provided by their respective banks. The banks also give different reasons to their customers for the lower quality service and related problems in e-payment. Due to some reasons such as electric power interruption and the cost of ictequipments this research paper attempted to examine the challenges and the opportunities in the provision of e-payment service, particularly in Wegagen Bank S.C.

## **1.3 Research Question**

So as to meet its objectives, the study based itself on responding to the following basic research questions:

1. What are the major challenges of E-payment?
2. What are the benefits of E-payment?
3. How does e-payment affect the profitability of the Bank?

## **1.4 Objective of the Study**

### **1.4.1 General Objective**

The general objective of the study was to identify the challenge and opportunity of electronic payment system in Wegagen Bank S.C.

### **1.4.2 Specific Objective**

In order to achieve its general objective the study aimed:

- to identify the major challenges of electronic payment,
- to identify the benefits that the bank earned from electronic payment,
- to check whether e-payment affects the profitability of the bank
- to show how it contributes to foreign currency remittance, and

## **1.5 Significance of the Study**

This study remains to be very significant for some reasons. First and most, as it tries to identify the challenges and opportunities that the bank faces with regard to e-payment, the findings definitely help the bank's management to improve the possible pitfalls and increase the level to which it benefits from providing the service to its customers. By implementing the recommendations made for the shortcomings in the service, which this study came up with, the bank will also increase its customers' satisfaction. This, in turn, increases the bank's profitability. In addition to this, the study is significant in a way that it helps in increasing the employees' awareness on what is expected least, the study is significant as it can be a springboard for other researchers who might be interested in researching further on the topic.

## **1.6 Scope of the Study**

Basically, the study was concerned with challenges and opportunities of e-payment in Wegagen Bank S.C. This research would be more significant had it

been conducted widely by including other similar firms. However, due to scarce resources and different constraints, it was conducted only on the e-payment service of Wegagen Bank S. C. Moreover, it would be ideal if all the branches of the Bank for maximum precision. The researchers were delimited to branches only in Addis Ababa, specifically Gerji Branch, Bole branch and Head Office – Domestic Banking(DB) Department and International Banking Department(IBD) especially with employees who are working in e-payment system.

## **1.8 Research design and Methodology**

### **1.8.1 Research Design**

Both qualitative and quantitative research methods were used in the study through somewhat close ended questions and observation. In order to answer the above research question the researchers used descriptive type of research method. Descriptive research primarily aims at gathering knowledge about description and explanation of the objectives of the study. The target population of the study comprises employees (mangers and customer officers) of Wegagen Bank.

### **1.8.2 Population and Sampling Techniques**

Our population included both the Bank's employees and customers. Regarding sampling technique, we employed the non-probabilistic judgmental technique to pick our samples among the Bank's employees and stratified sampling technique was used to sort our sample among the Bank's customers. We preferred these techniques because we purposefully wanted to include those employees working in the area of e-payment in our sample. The technique we used for the customers is chosen because we wanted to get effective representation of the heterogeneous population. The sampling frame took into account, the employees within the Domestic Banking Department and IBD, who are working in e-payment activities from three branches. We took 20 employees as a sample From the total population of 50 employees: 5 employees from Gerji (2 from IBD and 3 from DB), 7 employees from Bole (4 from IBD and 3 from

DB), 8 employees from Head- office (4 from IBD and 4 from DB). Related to the bank's customers From the total population of 150 customers a sample of 30 customers will be taken.

### **1.8.3 Types of Data Collected**

The data was collected from both primary and secondary data sources. Primary data was collected through predesigned questionnaires and observation. Secondary data was also collected from books, internet, magazines, etc

### **1.8.4 Methods of Data Collection**

The study used both primary and secondary data as its source of information. Primary data was collected based on structured questionnaire and observation. The secondary data was collected by reviewing books, magazines and online information available. Based on the research objective, a questionnaire was prepared to elicit customersexperience and the observation helped to get information about challenges and opportunities of electronic payment system. The questionnaire consists of two parts. Part one was prepared to gather general information about the respondentsgender, age, education, occupation, monthly income and for how many time the customer using the bankservices. Part two was prepared to ask respondents to answer E-payment opportunity challenge questions. This part consists of 26 questions to customers and employees and measures the challenges and opportunities of electronic payment system.

#### **1.8.4 Method of Data Analysis**

The researchers analyzed the data gathered through somewhat close ended questionnaires and observation which consisted of descriptive statistics in terms of percentage, tables, figures, charts. In addition to this, the researchers were also concerned with the interpretation and the representation of justification.

#### **1.9 Limitation of the Study**

The major limitation that we faced was shortage of documented information about the E-payment service of the bank as the service is a recent one. Moreover, we lacked enough amounts of reference materials for little has been written and studied about the service in the case of Ethiopian commercial banks. As a solution we used to support our study with deep and exhaustive interviews with the Bank's officials.

#### **1.10 Organization of the Paper**

The study is consisted of four chapters. Chapter one included background of the study, statement of the problem, objective of the study (general and specific objectives), significance of the study, limitation of the study, research methodology and organization the paper. Chapter two presented the review of related literature. The third chapter contained presentation, analysis and interpretation of the primary and secondary data collected. The last chapter deals with the conclusions drawn and the recommendations that originated from the analysis. Finally, lists of bibliography and annex are included.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 An Overview of E-commerce**

##### **2.1.1 Definition of E-commerce**

The new economic policy introduced in November 1991 brought the command economy to its end, heralding the establishment of market oriented one. This created conducive environment for establishment of private financial institutions and helped to bring a meaningful economic rule in the development of the economy.

Wegagen Bank S.C. is one of the private banks in Ethiopia. It was established on April 30, 1997 with subscribed capital of 60 million Birr and License No. LBB/004/97 before it started operation on June 11, 1997. Wegagen Bank is governed by a Board of Directors, president and two vice presidents and other 12 department managers, namely: Domestic Banking, Information System (I.S.), Finance and Treasury, Corporate Planning, International Banking (I.B.), Marketing, Administration and Human Resource, Risk Management, Engineering, Control, Credit and Legal departments.

Wegagen Bank S.C. is playing significant role in deposit taking, credit extension, E-payment services (such as Visa, Dhabshil and Agar Card), SWIFT (Society for Worldwide Interbank Financial Telecommunication), various International Money Transfer Mechanisms, Card Based payments, and Automatic Teller Machine (ATM) services. The bank also works as an intermediary in Foreign Trade of the country.

Wegagen Bank S.C. has started its operation with only two branches, by now, it is providing its services with 63 branches, out of which 28 are located in Addis

Ababa and the remaining 35 in regional states of the country. The Bank's Paid Up Capital, Legal Reserve and total asset have reached Birr 779,316,000;290,136,763 and Birr 8,060,937,378, respectively. Out of \ stated total asset Birr 1,051,971,662 is deposit at foreign banks (which is closely related with E-payment). (Wegagen bank S.C 2012/13 annual report - Balance sheet).

E-payment system in Ethiopia was first introduced by CBE in March 2005, next by Commercial Bank of Ethiopia in 2009, and then Wegagen Bank Share Company started the task in November 2010.

The background of the organization showed that there is an implication of electronic payment system with its challenges and opportunities.

Welcome to the wired world of business, where technology, human talent, and a new way of doing business make up today's growing worldwide economy. The backbone of this electronic commerce is the internet. The wired world is not about the technology; it is about information, decision making, and communication. The wired world is changing life for everyone; from the single household to the largest corporation. No business can afford to ignore the potential of a connected economy.

E-commerce brings the universal access of the internet to the core business processes of buying and selling goods and services. It helps generate demand for products and services and improves order management, payment, and other support functions. The overall goal is to cut expenses by reducing transaction costs and streamlining all kinds of processes. The internet's worldwide reach helps businesses discover new markets while increasing the speed of access and the speed of transactions.

Most people e-commerce and e-business uses interchangeably, which is wrong. E-commerce is the marketing, buying and selling of products and services on the internet. **E-commerce (EC) can be defined in several ways**

- **From a communication perspective:** e-commerce is the ability to deliver product, service, information, or payment via network such as internet and World Wide Web.
- **From an interface perspective:** e-commerce involves various information and transaction exchange; business-to-business, business to consumer, consumer to consumer.
- **From a business process perspective:** e-commerce include activities that directly support commerce electronically by means of net worked connections within a business process (Manufacturing, inventorying& operation) and business to business process (supply chain management) are managed by the same networks as business to consumer process.
- **From online perspective:** e-commerce is electronic environments that make it possible to buy and sell products, services and information on internet.
- **From structural perspective:** e-commerce involves various media data; text, webpage, internet& telephone.
- **As a market:** e-commerce is worldwide network. A local store can open a web storefront and find the world at its door step-customer, suppliers, competitors and payment services.

E-business enabling organization to accomplish the following goals:

- ✓ Reach new market
- ✓ Create new product or service

- ✓ Building customer loyalty
- ✓ Enrich human capital
- ✓ Make the best use of existing and emerging technologies
- ✓ Achieve market leadership and competitive advantage.(Awad,2003: 3-5)

**E-Business** is connecting critical business systems and constituency directly via the internet extranet and intranet. It means using electronic information to boost performance and create value by forming new relation between and among business and customer. (Awad, 2003:2-4)

According to Elias Awad e-commerce means commerce with anyone anywhere, any time. It emphasis new business opportunity, that result in greater efficiency and more effective transaction.

The information and communication applications are paramount concern to the banks in today's business environment and Internet has become the major platform for all financial, banking and commercial transactions in the present scenario. (Gardachew w. 2010:2)

### **2.1.2 Advantages and Limitations of E-commerce**

Changes in telecommunication are affecting the way we receive and transmit information, product and announcement, purchase order, etc. Like the telephone, fax machine, pcs and printers have become ingredients in doing business.

#### **Advantages**

E-commerce has several advantages such us:

#### **24\*7Operations**

Round-the-clock operation is an expensive proposition in the 'brick-and-mortar' world, while it is natural in the 'click-and-conquer' world.

## **Global reach**

The net being inherently global, reaching global customer is relatively easy on the net compare to the world of bricks.

## **An Extended Enterprise is Easy to Build**

In today's world every enterprise is a part of the 'connected economy'; as such, you need to extend your enterprise all the way to your suppliers and business partners like distributors, retailers and ultimately your end customers. Internet provides an effective (often less expensive) way to extend your enterprise beyond the narrow confines of your own organization.

## **Cost of Acquiring, Serving and Retaining Customers**

It is relatively cheaper to acquire new customers over the net; thanks to 24x7 operations and its global reach. Through innovative tools of 'push' technology, it is also possible to retain customers' loyalty with minimal investments. (P.T.Joseph 2004:10)

## **Lower cost**

Doing e-business on internet is cost effective; it reduce logistical problem and put small business on part with giants. In a commercial bank for example, a basic over-the-counter transaction cost \$1.07 to process, over the internet, the same transaction cost about penny. Every financial transaction eventually turns into an electronic process. The sooner it makes the conversion, the more cost effective the transaction become.

## **Higher Margin**

E-commerce mean higher margin along with higher margin business can gain more control and flexibility and able to save time when manual transactions are done electronically.

## **Team work**

E-commerce helps people to work together; email is one example of how people collaborate to exchange information and work on solution. It has transformed the way organization interacts with suppliers, vendor, business partner and customer. More interaction means better overall result.

## **Knowledge market**

Electronic market places improve information sharing between merchant and customers and promote quick just on time delivery. Convenience for customer is a major driver for change in various industries; consumer and merchants save money.

## **Customization**

Digital products are highly customizable. They are easy to recognize, revise, or re-edit with information about customer test and preference, product can be differentiated (customized) and assisted to individual need. (Awad, 2003: 14-16)

## **Limitations**

Although, we can generate a long list of advantages and benefits, there are still problems and draw- backs to consider before plunging in to the Web business. Here has just a few of these problems.

## **Security and Privacy**

Security continues to be a problem for online business. The security of financial transactions and privacy of personal details are a concern to many users and potential users of e-commerce.

## **Inspecting goods**

The web can provide a good picture, an expressive descriptions and even customer review or virtual reality displays but you cannot actually see, feel or try on the goods you are buying.

### **Return of goods**

Having to return faulty goods takes time and is embarrassment. Returning goods to an online vendor can seem even more problematic. (Whitely: 2004:156)

### **System and data integrity**

Data protection and the integrity of the system that handles the data are serious concerns. Computer viruses are rampant, with new viruses discovered every day. Viruses cause unnecessary delays, file backups storage problems, and the like. The danger of hackers accessing files and corrupting accounts adds more stress to an already complex operation.

### **System Scalability**

A business develops an interactive interface with customers via a Web site. After a while, statistical analysis determines whether visitors to the site are one-time or recurring customers. If the company expected two million customers and six million shows up, Web site performance is bound to experience degradation, slowdown, and eventually loss of customers. To keep this problem from happening, a Web site must be **scalable**, or upgradable on a regular basis.

**Scalability:** - Ability of a computer system, database infrastructure, or network to be upgraded to new standards.

### **Fulfilments problems**

Shipping delays, merchandise mix-ups, and web sites crashing under pressure continue to be a problem in e-commerce. Customer confidence in e-commerce's ability to

deliver during heavy shopping seasons continues to be a headache. Even happy customers say the experience could be improved.

### **Corporate vulnerability**

The availability of product details, catalogues, and other information about a business through its web-sites makes it vulnerable to access by the competition. The idea of extracting business intelligence from the competition's web pages is called web framing.

### **Lack of Blueprint for Handling E-Commerce**

There is a continuing shortage of e-literate people in the workplace. In a survey published in computer world (Copeland: 54), nearly nine out of 10 respondents said only a few of their key managers have e-commerce skills, internet experience, and foresight. Sixty six percent also said they are having to a thought time attracting people wanting to take advantage of online opportunities. Finally, traditional organization structures and cultures were found to inhibit progress in e-commerce. (Awad, 2003:18-20)

#### **2.1.3. Value Chain in E-Commerce**

**Value chain** is a way of organizing the activities of a business, so that each activity adds value or productivity to the total operation of the business.

Within an online merchant's business, value-added activities work together to make the business-to-customer interface operational.

Competitive advantage is achieved when an organization links the activities in its value chain more cheaply and more effectively than its competitors. (Awad, 2003:21)

**Value Chain Model:** value chain moves businesses away from discrete streams of data about the product being made to one unified pool of information-one that extends outside the company to suppliers and customers. The goal is to

develop full and seamless interaction among all members of the chain, resulting in lower inventories, higher customer satisfaction and shorter time market. (P.T.Joseph, 2004: 63-64)

The value chain is a useful way of looking at a corporation's activities and how the various activities add value to other activities and to the company in general. E-commerce can play a key role in reducing costs, improving product quality and integrity, promoting a loyal customers base, and creating a quick and efficient way of selling products and services. By examining the elements of the value chain, corporate executives can look at ways of incorporating information technology and telecommunications to improve the overall productivity of the firm. Companies that do their homework early and well ensure themselves a competitive advantage in the marketplace. (Awad, 2003:23)

#### **2.1.4 Integrating E-commerce**

The trend in e-commerce is to integrate the entire transaction life cycle, from the time the consumer purchases the product on the Web site to the time the product is actually received. This life cycle centres around three major e-commerce applications:

- Business-to-consumer (**B2C**), done on the internet
- Business-to-business (**B2B**), done on the internet and extranets
- Business-within-business (**BwB**), done on the intranet.(Awad 2003:24)

#### **Business-to-Consumer (B2C)**

Consumers are increasingly going online to shop for and purchase products, arrange financing, arrange shipment or take delivery of digital products such as software, and get service after the sale. B2C e-business includes retail sales, often called e-retail (e-tail), and other online purchases such as airline tickets, entertainment venue tickets, hotel rooms, and shares of stock.(P.T.Joseph 2004: 30)

## **Business-to-Business (B2B)**

The real power of e-commerce lies not in the direct sale of products to consumers, but in the integration of relationship among merchant's and suppliers for prompt & quality customer service. (Awad, 2003: 25)

B2B is that model e-commerce whereby company conducts its trading and other commercial activity through the net and the customer is another business itself. This essentially means commercial activity between companies through the internet as the medium.

This is supposed to be a huge opportunity area in the web. Companies have by and large computerized all the operations worldwide and now they need to go into the next stage by linking their customers and vendors. This is done by supply chain software, which is an integral part of your Enterprise Resource Planning (ERP) application. (p.T.Joseph: 34)

## **Business-within-Business (Intranet)**

The intranet plays a role as a corporate and product information centre and is strictly a "within company" type of information exchange. This networked environment is restricted to internal employees and customers, with firewalls to keep out non-employees. E-mail replaces paper for the communication of messages, order acknowledgement and approvals and the other forms of correspondence within the firm. (Awad, 2003:28)

## **2.2 An Overview of Electronic Payment**

The growth of e-commerce is dependent, among other factors, on the existence of secure, user- friendly and cost-effective payment systems.

E-payment systems are becoming central to e-commerce as companies look for ways to serve customers faster and at low cost. Emerging innovations in the payment for goods and services in electronic commerce promise to offer a wide range of new business opportunities. Ancient traders faced a number of

obstacles such as conflicting local laws and customs regarding commercial practices and incompatible and nonconvertible currencies that restricted trade. To circumvent some of these problems, traders invented various forms of payment instruments such as promissory notes, bills of exchange, gold coins, and barter. The merchants also developed commercial law surrounding the use of these instruments that proved to be one of the turning points in the history of trade and commerce. We are on the verge of a similar short of development today with regard to e-payment systems.

Everyone agrees that the payment and settlement process is a potential bottleneck in the fast-moving electronic commerce environment, if we rely on conventional payment methods such as cash, cheques, bank drafts, or bills of exchange. Electronic replicas of these conventional instruments are not well suited for the speed required in e-commerce purchase processing. For instance, payments of small denominations (micropayments) for bits and pieces of information must be accepted by vendors in real time. Conventional instruments are too slow for micropayments and the high transaction costs involved in processing them, add greatly to the overhead. Therefore, new methods of payment are needed to meet the emerging demands of e-commerce. These new payment instruments must be secure, have a low processing cost, and be accepted widely as global currency tender. (P.T.Joseph:171-172)

## **From Barter to Money**

Money began with the concept barter or exchange. Farmers for example exchanged crops for clothes, cattle's for farm tools, etc.

Eventually, the economic system got complicated and a standard medium of exchange was born. The first medium involved tokens (items that carried intrinsic value). Precious stones and shells were early tokens. Later, coins were minted in precious metals, and were given specific values. For example, a silver dollar was

first minted in silver; it carried its weight (and its value) in silver. Later, the government minted the same dollar coin using copper and other metals. Paper notes are similar in that they carry value as a matter of consensus. The paper note has become a marker representing a certain value.

After tokens were detached from their inherent value, the next step was notational money in which value was stored and exchanged by formal authorization. An example is a check. As a document, the check is worthless. Its notation carries value; it is directly tied to value stored in a unique account at a bank. Even the back account does not contain real cash, but is a repository representing cash. Notational money is tied to actual value stored in a specific location. After notational money, the credit system developed, represented by the credit card. For the first time, a person could pay for goods and services not directly tied to value stored elsewhere. When you credit card, you simply become liable for the value of the merchandise. Most electronic payment systems use notational systems. They either transfer funds electronically or send credit card information over the internet.

### **Real-world Cash**

For centuries, we have known money as a medium of exchange to simplify transactions, a standard of value to make it easier to decide on the worth of goods, and a store of value to facilitate the concept of saving. For the purpose of e-commerce, electronic money must fulfil the first function. When you carry cash, you are making on-the-spot payments. Payment online (using credit cards and the like) is not very different from cash transactions in the real world, except for speed of transfer, ease of handling, and safety of not having to carry cash. (Awad, 2003:209-210)

### **Electronic Transaction System**

An electronic transaction system makes it possible to process transactions over the internet, whether the customer uses Visa, MasterCard, Discover, American

Express, or any other form of card. An electronic transaction processing system to pay the merchant against the customer's credit or debit card. (Awad, 2003:215)

## **2.3 Types of Electronic Payment Media**

There are dozens of electronic payment media already in use. Electronic payment media can be grouped into three types, depending on the information being transferred online. (Awad 2003:220)

### **2.3.1. Trusted Third Party Type (TTP)**

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. (Wendwosen&Tsegai 2005:10)

### **2.3.2 Notational Fund Transfer-related Type**

National fund transfer related type is the visa/MasterCard (Secured Electronic Transaction) SET-based transaction. A customer submits his or her credit a merchant for payment. The merchant transmit the credit card number via a phone line to the issuing bank for confirmation. The issuing bank, in turn, adjusts the customer's and the merchant's accounts accordingly. Because it is all online, the information transmitted is encrypted for security. This does not, however, prevent a hacker from tapping your account by intercepting your message or credit card number and running up charges before any electronic system detects it. Despite these issues, this medium has been the core of online

payment system for years and now is being extended to the internet. More sophisticated protocols are being tested to ensure transaction integrity. (Awad 2003:223)

### **2.3.3 Digital Cash or Electronic Money**

Digital cash or electronic money type of transaction allows the transfer of money itself, which carries value. In this case, serial numbers representing actual money are encrypted all the way to their destination and can then be converted into real money such as U.S. dollars.(Awad 2003:223)

One of the earliest efforts to electronic payment is the concept of digital money or digital cash. Electronic cash or digital cash is an equivalent form of physical cash backed by real money. It enables storage and exchange of values digitally. In digital cash, funds or value is stored in electronic device in a consumer possession [21]. Electronic cash has got some similarities with real money such as privacy, transferability and convenience. 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. Digital cash also differs from other e-payment systems in that what is transferred over the network in the case of digital cash is monetary value. In the other e-payment systems what is transmitted over the network is sensitive payment information such as credit card numbers, bank account information or payment authorization. Digital cash can be either online or offline. In the case of online there is a need to interact with the bank, whereas in the offline case transaction can be conducted without having to contact a bank directly. (Wondweson&Tsegai 2005:12)

### **Credit Card as E-Payment systems**

Credit card is a plastic card with prearranged spending limit based on the credit card holders credit rating, employment record etc. To sell things on the web you must accept credit cards. Credit cards have proved popular for a number of reasons as the following:

1. The system is familiar to users and was widely used before the advent of e-commerce, thus bolstering the users' confidence.
2. Transaction costs are hidden from users (i.e. basically met by sellers, and passed on to customers, not just credit card users).
3. Payment is simple anywhere and in any currency, thus matching the global reach of the Internet.
4. The credit issuing company shares the transaction risk; helping overcome customers' fear and reluctance to buy goods.

But it has its own limitations: the relatively high transaction cost makes them impractical for small-value payments; they cannot be used directly for individuals to make payments to other individuals (peer-to-peer transactions); protecting the security of transactions is vital, especially on the virtual world where there is no payment guarantee to the merchant by a bank. Users' fears about security issues seem to be a consequence of newness and relative unfamiliarity of the medium, rather than the real risks involved in the system. (P.T.Joseph:175)

### **Debit Card as E-payment systems**

Debit card is a kind of payment card that transfers funds directly from the consumer's bank account to the merchant's. It can be used with or without a personal identification number (PIN) almost everyone retail stores, gasoline stations, restaurants, pay phones.

There are two ways to make payments on a Web site; debit cards and credit cards pull out your ATM. Chances are it is a debit card with a Visa or MasterCard logo. Debit cards are upgraded ATM cards branded with the Visa,

MasterCard, or other familiar credit card company logo. They look exactly like credit cards, except they directly tap your checking account every time you make a purchase or withdrawal. They are easier, more convenient, less burdensome, and offer greater access to your money than do check, ATMs, or credit cards. They are descendants of the ATM cards that become popular in the early 1980s. Debit cards are different, however, because transactions are processed through the issuing bank's credit card network. When a debit card is used with a PIN, as in using an ATM machine, it is called an online transaction. You simply insert the card in the machine, enter the PIN number, and proceed as you do when using an ATM card.

All debit card purchases are reflected in the monthly hard copy statement the debit mails each customer for reconciliation.

Needs to know about debit card

1. Using a debit card frees you from having to carry cash or a check book. You don't have to carry traveller's checks, show identification, or give out personal information at the time of the transaction.
2. Debit cards are more readily accepted by merchants than are checks, especially in countries where check cashing and check processing are not widely used.
3. It is generally easier to get a debit card than a credit card. You can get a debit card the moment you have a checking or a saving account.
4. Returned debit card purchases are treated just like returns for items purchased by cash or check.
5. The debit card is a quick pay now process. There is no grace period as there is for credit card payments.
6. A major problem at this time is that using a debit card may mean less protection for items that are never delivered, for defective items, or for items that were misrepresented. With credit card purchases, you can contest the charge and put a hold on payment within 60 days.

7. A cardholder might overspend his or her limit before anyone finds out. Retailers do not have verification machines to see your bank account balance before the sale (Awad, 2003:227)

### **Electronic Funds-Transfer (EFT) and Automated Clearinghouse (ACH)**

**Electronic funds transfer (EFT)**; is a computer-based system that facilitates the transfer of money or the processing of financial transactions between two financial institutions the same day or overnight. Interbank transfer is one of the earliest forms of electronic payment systems on private networks.

An international electronic fund transfer is mainly carried out through SWIFT. SWIFT is acronym for the Society for Worldwide Interbank Financial Telecommunications. SWIFT provides around-the-clock international payments between banks-foreign exchange and trade transactions, and cash flows due to international securities transactions. By 1999 there were over 6500 financial institutions in 175 countries using SWIFT's secure messaging (electronic funds transfer system). It is estimated that the average daily value of payments messages on the SWIFT network is over \$2 trillion.

Rigid security standards are enforced, each message is encrypted (secretly coded), and every money transaction authenticated by another code. These security measures are important to the members as well as to SWIFT, which assumes the financial liability for the accuracy, completeness, and confidentiality of transaction instructions from and to the point of connection to member institution circuits. One area of increasing concern has been electronic fraud, and SWIFT is using advanced smart card technology to improve its security system. Additionally it will automate the process by which financial institutions exchange secret authentication keys with each other. (B.Block&A.Hirt 2002:181)

The **automated clearinghouse (ACH)**: routes bank transactions involving more than one financial institution so that the correct accounts held by the correct financial institutions can be debited and credited.

In purchasing goods on the internet, ACH credit takes place when a transfer of funds from customer to merchant bank account is initiated by the request of the customer. The procedure followed in authenticating and processing electronic payments over the internet. (Awad 2003:236)

## **2.4. Payment from Three Perspectives**

### **2.4.1 Merchant**

Merchants want to sell product and service. To that end, it is important that customer feel comfortable using payment methods the merchant accept, and it should be easy for potential customer to make impulse purchase. The potential customer base and is of particular importance to merchant and is limited in part by number of customers able to use particular payment method.

Merchant are also concerned with the transaction fee that are incurred to clear payment, the time required to complete a transaction, and exposure to risk from counterfeit or stolen payment instrument or customer with insufficient fund to complete payment. Some of these characteristic may be affected by the payment model and used or the payment method selected, while other characteristics are established in the contractual relationship between the merchant and financial service provider.

### **2.4.2 Customer**

Customers want to feel that the money is safe and want to use that money to make purchase with as many merchant as possible. Customer do not want to invest time learning how to use new payment system, and they usually don't want to maintain separate account for different merchants they don't like paying transaction fee, and they don't like waiting for their payment to be processed or for an account to be established, they want instant gratification.

As was the case with merchants, some of these desires are affected by technical choice of payment method, but many are established in the contractual relationship between the customer and the financial service provides.

### **2.4.3. Financial Service Provider**

Financial service provider wants to make a profit for the services they provide. One way to increase profit is to have more customers, and the ideal situation for a financial service provider is to be the only server in town, with all transactions processed by their server or servers. Customers and merchants, on the other hand, want a choice and are distrustful of payment mechanism that forces payment through a single financial service provider.

Competition between providers is encouraged by mechanism that supports multiple services and allows payment to clear between providers. Such system allow customer and merchants to independently select financial service provider and, financial provider are forced compete on basis of price, performance, reliability and value added services. In such system, financial services providers are compensated less for the processing function but more for their true contribution that of managing risk. (Whiston, 1997:230)

## **2.5. The Financial Service Provider as a Risk Manager**

Risk management is one of principal service provided by financial service providers. Merchants want to make sure they get paid for the services and product they provide to customer. Customer want to be sure that merchant provide the product and service for which they paid customers and merchants want to be sure their funds are safe when in the custody of the financial service provider, and the financial service provides want to be sure that it will be paid by customers for the charge it honours' from merchants, and that merchant will return the found collected disputed changes.

For financial service providers, risk management has two aspects; contractual and technical. Risk is allocated across parties through the contractual aspect for example; merchant may agree to accept the risk of purchases. Alternatively the risk may be borne by the financial services provider, who collects a great percentage of transaction for accepting the risk.

Financial service provider might require customer to place fund on deposit before changes are authorized, alternatively, financial service provider can extend credit to customer and assume the risk of non-payment. The customer who places fund on deposition in advance assumes risk from a failed service provider. If the providers extend credit, it assumed the risk of making payment on behalf of dishonest or insolvent (dead beat) customer credit checks and third party endorsement can reduce, but not eliminate, the risks and interest charge and other fee can compensate parties increasing this risk. (Whiston, 1997:231)

## **2.6. Characteristics of Payment System**

When comparing network payment system it is important to consider several characteristics, including security, reliability, scalability, anonymity, acceptability, customers' base, flexibility, convertibility, efficiency, and ease of use. Some characteristics will be more important than other at different time. A payment method should not be judged on an absolute basis but instead in terms of how well it meets the needs of the kind of transaction for which it is to be used.

### **Security**

One expects payment system to be the target criminal, since breaching an attacker. For this reason the payment system must be hardened against all forms of attacks, and vulnerability of the system to attacks through the internet should be considered. These attacks will take the form of passive eaves dropping, active modification of message, impersonation, and attacks against the computers involved in the transaction, including the customer's PC or work

station, the merchant's computer system, and the system of the financial service provider. (Whiston,1997:235)

Security should allow financial transactions over the open networks. (P.T.Joseph 2004:172)

### **Reliability**

If electronic commerce becomes widespread, business will come to depend on the proper functioning of net work payment infrastructure. For this reason the payment system must be prone to failure, whether the result of failed computers, software bugs, or intentional attack by vandals. The best way to improve the reliability of a system is through redundancy. A payment system should not present a single point of vulnerability those failures will bring down the entire system. (Whiston 1997:235)

Reliability should avoid single points of failure. (P.T.Joseph 2004:172)

### **Anonymity**

If appropriate for transaction, a payment system should prevent disclosure of the identity of the partners to the transaction, and it should not be possible to monitor an individual's spending patterns. The level of anonymity that is needed must be balanced with the cost in terms of other characteristics, and with the need for accountability. If anonymity is desired, the strength of anonymity guarantees should be sufficient so that the cost of tracking a transaction outweigh the value of information obtained by doing so. (Whiston 1997:235)

Through anonymity identity of the customer should be protected. (P.T.Joseph 2004:172)

### **Acceptability**

Payment infrastructure needs to be widely accepted. (P.T.Joseph 2004:172)

Customers don't want to keep track of more than couple of accounts for this reason they would like a payment method to accept widely. The more widely

accepted a payment method is, the more worthwhile it is for a customer to maintain account, and ultimately use the method one way to improve acceptability is to make it possible to clear payment through multiple financial service providers, allowing customers registered with one provider to make payment to merchants registered with different providers. (Whiston, 1997:236)

### **Customer Base**

From the merchants' perspective, customer base is the flip side to acceptability merchants want to sell product and without a large enough base of customer using a payment mechanism once critical mass for a payment method is reached, more customers will adopt the method, which will in turn encourage more merchants to accept it, bringing in even more customers. (Whiston, 1997:236)

### **Flexibility**

Different situation dictate different relationships with respect to the timing of payment and risk management. They also call for different characteristics in terms of anonymity, accountability and other characteristics described in this section with slight change come payment systems support arrange of characteristics. By using such an adaptable payment system, the infrastructure supporting the mechanism can be reused, saving the cost of rich lamenting sit for other payment mechanism. . (Whiston, 1997:236)

### **Convertibility**

Under convertibility money should be able to be converted to any type of fund. (P.T.Joseph 2004:172)

In some cases the difference in characteristics that are needed may be so great that different payment methods are required. In such case users of the internet will select financial instruments that best suit their needs for a given transaction. To be useful in combination with other payment method, funds

represented by one mechanism should be easily convertible into funds represented by others. (Whiston, 1997:237)

### **Performance efficiency**

Merchants want business, and customer don't like waiting in line. If a merchant has a popular product, the merchant will want to take orders as quickly as possible for a given number of computed accepting orders, the performance of the payment system will affect the rate at which orders can be accepted. Additionally some applications will make multiple purchases on behalf of a user, and the longer it takes for each purchase, the longer the user has to wait for this reason the performance of payment system is important. (Whiston, 1997:237)

### **Economic Efficiency**

Cost per transaction should be near zero to be payment efficient. (P.T.Joseph 2004:172)

Some payments will be a couple of pennies, for example, paying for the result of a data base query or similar operation for application that require such payment, the cost per transaction of using the infrastructure should be small enough that it is not noticeable.

### **Ease of use**

Merchants want customer to make impulse purchases, and many customers want instant gratification. For many situations, the ease of use of a payment method must be considered. Users do not want to be interrupted to provide payment information for each page they browse; so the integration of payment system should allow the specification of situation for which payment should be automatic. However, users still want to have some say in what is charged and will be concerned if an error in the rule set can cause them to spend more than

they intend for this reason payment beyond a threshold should require explicit approval user should be able to monitor their spending easily. (Whiston, 1997:238)

## **2.7. Challenges of E-payment**

### **2.7.1 Security**

Security – where disclosure of private information, counterfeiting and illegal alteration of payment data may be rampant. (Ibrahim H.2009:17)

Securing the payment process involves authenticating both the customer and the merchant and protecting the information to be transmitted from interception. In addition a means must be provided that prevent repudiation both by the merchant and customer once the payment process has taken place. E-payment system has 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 the major security challenges of e-payment system are; counterfeiting is the creation of new data or duplication of existing data, which are technically valid but not legally admissible. Cloning of e-money for double spending and creation of accounts are examples of counterfeiting. One popular form of counterfeiting attacks is duplication of electronic data from a payment cards (e.g. ATM card) which is used, create duplicate cards and withdraw money from the accounts; illegal alternation of payment data may result in loss money. This may again results in the loss of customer confidence. Alternation could be made to the transaction account numbers resulting in misdirected payments, to the payments amounts or to electronic balances on electronic and usage of a fraudulent websites by an attacker to collect credit card number and other personal and/or financial information; disclosure of private information, in e-payment there are many ways in which private information may be accessed by attackers. For insurance hackers may intercept network traffic to

get confidential data. It is also possible to access private data stored on a computer connected to the internet. This data could be used to make fraudulent transactions that could lead to a loss of money. The approaches for enhancing e-payment-related security includes, securing e-payment involves the use of technological mean such as information security functions (cryptographic-based technologies like encryption, digital signature, etc). Since securing the payment system will reduce its efficiency by making it slower compromise has to be made between security and efficiency. (HayalReta 2007:28-29)

### **2.7.2. Infrastructure**

Lack of Technological Infrastructure – the implementation of e-payment is been impeded by unavailability of ICT infrastructure. Most rural areas where majority of small and medium scale industries are concentrated haven no access to internet facilities. (Ibrahim H.2009:17)

For the effective deployment of e-payment, it is necessary to have a reliable and cost effective infrastructure that can be accessible to the majority of the population. The most common communication infrastructure for e-payment is computer network such as Internet. Most e-payment systems use Internet to communicate with their customers. The other communication infrastructure available for e-payment users is the mobile network used for mobile phone.

Automating the banking activities is another prerequisite for e-payment system. Closed financial network that links banks and other financial institutions is necessary .This network is usually used between banks or other financial institution for clearing and payment confirmation. Both the mobile network and Internet are readily available in developed countries. Users in these countries do not have problem associated with communication infrastructure. In Africa both mobile networks and Internet are not easily accessible. Poor communication infrastructure is one the reasons that hinder the e-payment system in Africa.

User access devices such as PC and mobile phone are not also readily available in Africa, another reason that hinders e-payment in Africa. (Wondweson&Tsegai 2005:25)

### **2.7.3. Regulatory and Legal Issues**

Inexistence of proper legal and regulatory framework is one challenge of legal issues. (Ibrahim H.2009:17)

National, regional or international set of laws, rules, and other regulations are important prerequisites for successful implementation of e-payment schemes. Some of the main elements include rules on money laundering, supervision of commercial banks and e-money institutions by supervisory authorities, payment system oversight by central banks, consumer and data protection, Cooperation and competition issues: 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 data, electronic contracts, and electronic signature. Moreover, a legal and regulatory framework that builds trust and confidence supporting technical efforts to meet the same is another important issue that needs to be addressed. National regulatory and legal framework that is in line with regional and international agreements is crucial in creating a certain and reliable environment. (Wondweson&Tsegai 2005:26)

### **2.7.4 Socio-Cultural Challenges**

Cultural and historical differences in attitudes and the use of different forms of money (e.g. use of credit card in North America and use of debit cards in Europe) complicate the task of developing an electronic payment system that is applicable at international level. Difference in the degree of the required security and efficiency among peoples of different cultures and level of development aggravates the problem.

Consumer's confidence and trust in the traditional payment 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. New technology also requires the test of time in order to earn the confidence of the people, even if it is easier to use and cheaper than older methods. (Wondwossen and Tsegai 2005:26)

#### **2.7.5 Resistance to changes in technology among customers and staff due to:**

- Lack of awareness on the benefits of new technologies,
- Fear of risk,
- Lack of trained personnel in key organisations,
- Tendency to be content with the existing structures, and
- People are resistant to new payment mechanisms;

#### **2.7.6 ICT Equipment Costs**

Where available, the cost of ICT is a critical factor relative to per capital income. This makes the cost of entry higher compared to developed countries.

#### **2.7.7 Non-readiness of banks and other stake holders (acceptability)**

Even though some have shown impressive willingness, some banks are still not fully ready to for this new payment regime. Especially the non-regular banks that do not enter clearing e.g. Microfinance banks, mortgage houses and Savings and Loans banks. This is a concern because many civil servants are indebted to these non-regular banks through mortgage loans. (Ibrahim H.2009:17)

#### **In case of Ethiopia:**

E-payment in Ethiopia is has some major challenges. Some of these challenges are the following.

- Poor telecommunication infrastructure
- Frequent power disruption
- People are resistant to new payment mechanism
- Lack of skilled manpower
- Unavailability of payment laws and regulations particularly for e-payment ([www.uneca.org/e.../e-Payment](http://www.uneca.org/e.../e-Payment))

## **2.8. Opportunities of E-payment**

E-payment offers substantial advantages to net-dwellers in the form of enhanced convenience, time saving and ability to buy and sell in many market places, and in the emergent market space. Electronic transactions between citizens and governments render the opportunity for latter to collect 'customer' information that can be used as an important input to operational and policy decision making. For private sector, that information is an increasingly significant source of business advantage. Online identification technologies have, thus been sophisticated allowing access to individuals personal details, purchasing history and commercial value. (HayalReta 2005:30)

[Electronic payments](#) can benefit your business by extending your customer base; boosting cash flow; reducing costs; enhancing customer service and improving your competitive advantage.

Five reasons why Electronic payments improve customer service – the five 'Cs'

**Choice** – like your competitors, you can offer a wide range of payment options

**Convenience** – they remove the need for invoices, cheques, cash and BACs

**Credit** – they may allow purchases that would otherwise be delayed

Concessions – small discounts to encourage online purchases improve the perception of value

Competitive Edge - if you don't offer the full range of payment options but your competitors do, what does this say about your business?

Five reasons why Electronic payments increase profitability

Convenience – removing administrative resources required by invoices, cheques and cash

Immediacy – credit cards enable instant purchasing (without delay)

Improved cash flow – payment at the time of purchase reduces the pressures caused by 30-day invoicing

Growth – open additional payment channels via the phone, mail order and Internet and increase your customer base. More customers mean more revenue.

Competitive advantages – match and beat the services of your competitors and gain the edge.

([http://www.electronicpayments.co.uk/docs/Electronic\\_Payments\\_Benefits](http://www.electronicpayments.co.uk/docs/Electronic_Payments_Benefits))

It has also other advantages

### **Speed and convenience**

The primary advantage for e-payment is the same advantage to applies to most e-commerce business in general. Consumers can find what they want to buy and purchase it quickly. These immediate transfers of funds benefit business in several ways. Buyers are generally more willing to make purchases if the purchasing process is easy and immediate. Convenient and well made e-payment systems also show consumers that the business cares about its customers and acts as a type of customer service.

## **Flexible payment arrangements**

E-payments are flexible. Many payment schedules allow for later billing or payment instalments using third party vendor. Business websites typically give several options for customers to buy using credit card, debit card or even direct transfer from a bank account. This also allows several types of transactions that are only available online, such as peer-to-peer electronic transfers. ([www.ehow.com/info](http://www.ehow.com/info))

## **CHAPTER THREE DATA ANALYSIS**

### **3.1 Introduction**

This chapter generally discusses about presentation ,Interpretation and data analysis. The first sub topic focuses on data collected from secondary sources; related to background information on Wegagen Bank Share Company. The second sub topic analyses data collected from primary sources; which includes analysis of the questionnaire which is presented in percentage & pie chart.

### **3.3 Data Collected From Primary sources**

A questionnaire was prepared on various aspects of Wegagen Bank Share Company electronic payment systems. This questionnaire was distributed to the employees of Wegagen Bank S.C. that were selected by non-probabilistic judgemental sampling technique. Besides, the customers of Wegagen Bank S.C, which were selected by Stratified and simple random sampling and by taking simple observation.

The questionnaire was distributed to 20 employees and 30 customers of the bank in Addis Ababa; specifically three branches: Head Office, Bole and Gerji. The whole questionnaires could able to be collected back filled out.

### 3.3.1. Analysis of Questions Related to Electronic Payment System

**Table 3.1 Written Electronic Payment Systems and Procedures, and efficiency in dealing with conventional (traditional) payment systems**

	Does the Bank has written Electronic payment Systems & procedures				Bank is efficient in dealing with Traditional Payment System			
	Yes	No	I don't know	Total	Yes	No	I don't know	Total
No.	6	14	0	20	6	12	2	20
%	30	70	0	100	30	60	10	100

Source: Employees Questionnaire

The rest 6 (30%) of the respondents said there is a written electronic payment systems and procedures. Beside this, 6 (30%) of the respondents said the Bank is efficient in dealing with traditional payment system, 12 (55%) of the respondents said the bank is not efficient in dealing with conventional (traditional) payment system and the rest 2 (10%) of employees said that they don't know. It can be taken from the above data that the Bank is not efficient in dealing with traditional payment systems in connection with the bank's productivity.

**Table 3.2 Drawbacks of traditional payment System**

Draw backs of Traditional Payment System	No	%
Time taking	6	30
Compel to carry cash	4	20
Fear of theft	5	25
Outdated system	5	25
Total	20	100

Source: Employees Questionnaire

The table above shows why the bank was inefficient in dealing with traditional payment system. All the respondents put different reasons; 6 (30%) of respondents said it is time taking, 4 (20%) said compel to carry cash, 5 (25%)

said fear of theft and 5 (25%) said it is out-dated. In relation to all the above reasons traditional payment system (cash, check, letter of credit...) were inefficient to the bank. As indicated earlier, the above responses witness that there are different drawbacks of traditional payment system; however, its 'time taking' nature is seen to be the popular drawback.

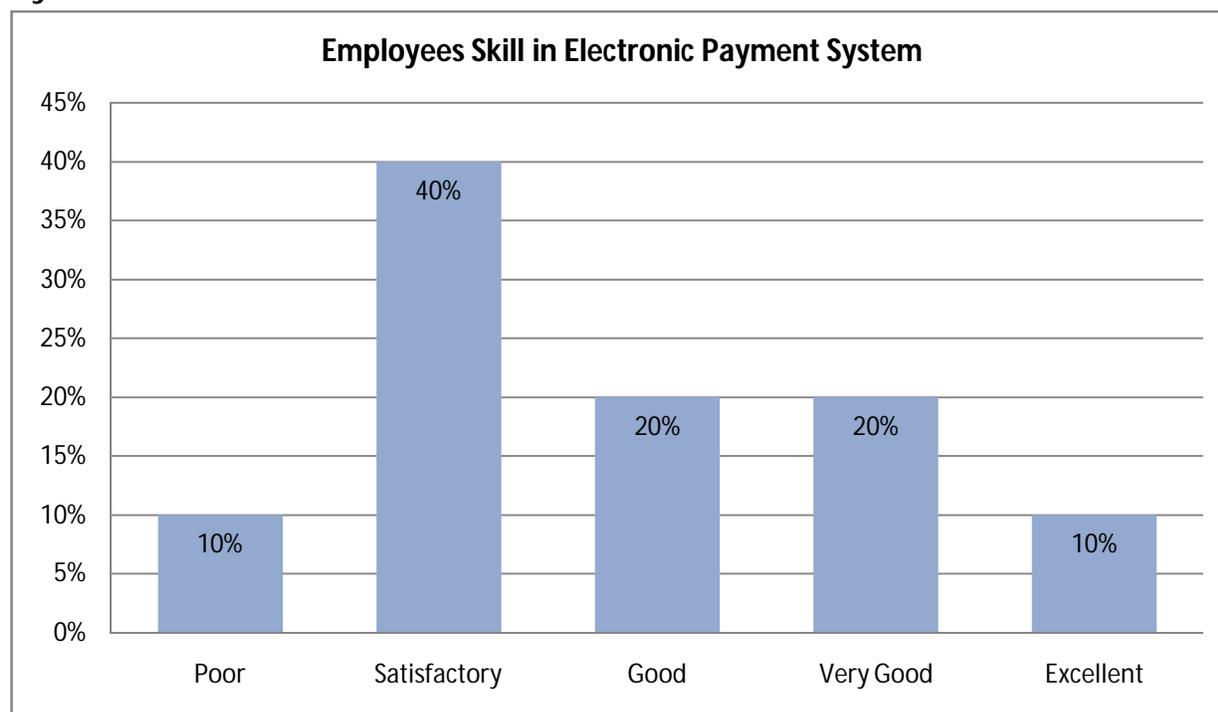
**Table 3.3 Employees Knowledge about Electronic Payment System and the Importance of Electronic Payment for the Bank**

	Do you have any knowledge about E-Payment System			E-Payment System is Important for the Bank & its Customers			
	Yes	No	Total	Strongly Agree	Agree	Dis-agree	Total
No.	7	13	20	15	5	0	20
%	45	55	100	75	25	0	100

Source: Employees Questionnaire

As described on the above table 11 (55%) of employees have not any knowledge about E-Payment system, which shows there is no any further training about the system they only worked with their prior knowledge of their profession. The other 9 (45%) of the employees have knowledge about E-Payment system. On the other part of the table also presents how employees rate the importance of e-payment for the Bank as well as for customers. 15 (75%) of respondents strongly agree with the importance of E-Payment System, 5 (25%) of respondents are agree with the system and no one was dis-agree with this system. So, it shows most of the employees accept the importance of the system, however, the employees' fear of losing their jobs remaining as their risk.

**Figure 3.1 Rate of Employees Skill in Electronic (Automated) Payment System**



Source: Employees Questionnaire

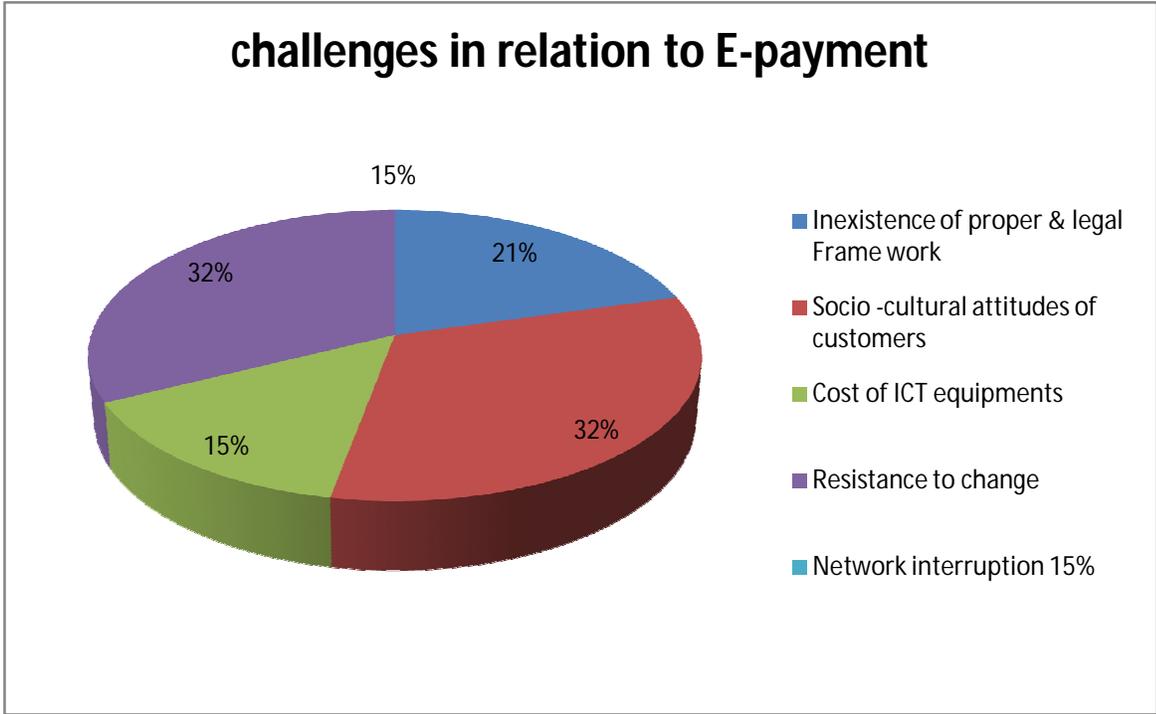
As the above graph indicates, 10% of respondents rated the employees' skills in electronic (automated) payment system to be excellent, 20% rated it very good, 20% said rated it good, 40% rated it satisfactory and the rest 10% rated it poor. From the above graph we can conclude that most of employees have a satisfactory skill in relation to electronic payment system. This shows most of them have low skill in the system.

**Table 3.4 The importance to make the Whole System Computerized**

Is it important to make the whole system computerized	Importance of to make the Whole System computerized		
	Yes	NO	Total
No.	17	3	20
%	85	15	100

Source: Employees Questionnaire

As indicated in the above table 17 (85%) of the respondents agreed with making the whole system computerized and the other 3 (15%) are not agreed with making the whole system computerized. As directs the above responses, most of the respondents agreed to make the system computerized.



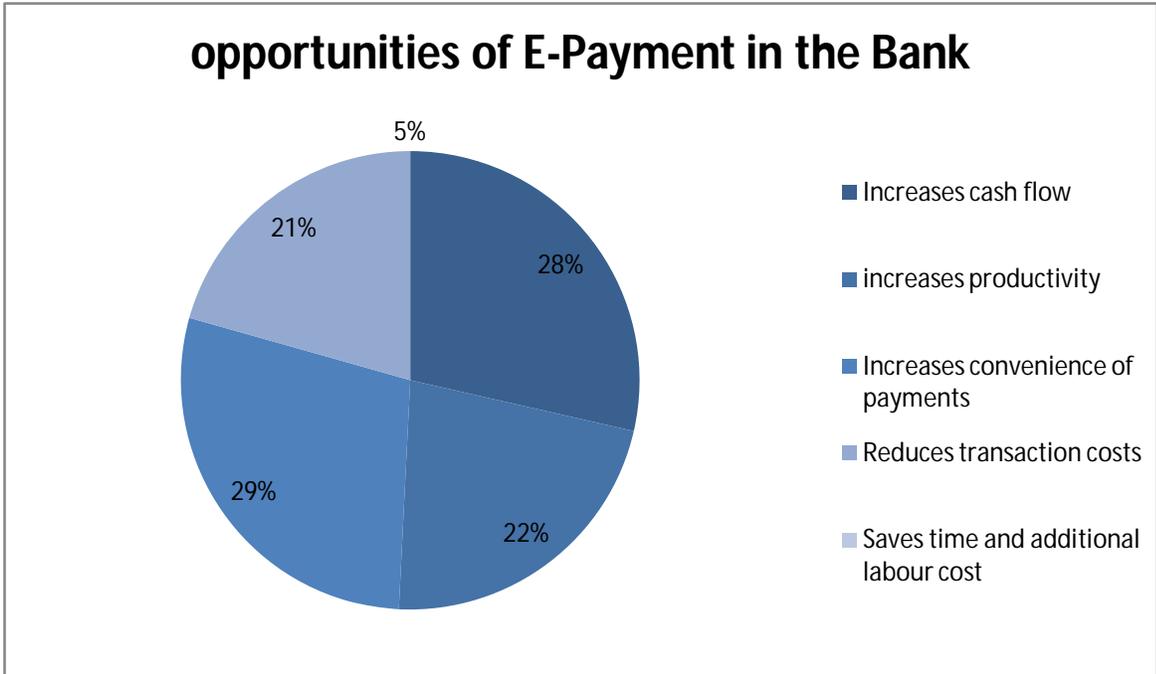
Source: employees Questionnaire

**Figure 3.2 Challenges in Relation to Electronic Payment in the Bank**

The above pie chart indicates the challenges in relation to electronic payment system of the Bank. 19% of the respondents stated that inexistence of proper regulatory and legal frame work faces the e-payment system as a challenge, 30% said socio-cultural attitudes of customers to, 13% blamed cost of ICT equipment, while 8% pointed at network interruption, and the remaining 30% said resistance to change in relation to new technology are the major challenges of the Bank. Socio cultural attitude of customers means, customers have low attitude about e-payment, they are not eager to know the system, the culture of the society has impact in what already exists like cheque, cash, letter of credit, etc. Regarding cost of ICT equipment, expensiveness of ICT like ATM, different

software, and recruiting of experts (mostly from abroad), and the resistance to change means, employees are resistant to change because the new technology might cause them to lose their jobs.

As the above responses indicated, there are different challenges of e- payment but socio-cultural attitudes and resistance to change are the most challenges of e-payment in the Bank.



Source: Employees Questionnaire

**Figure 3.3 Opportunities of E-Payment to the Bank**

The above pie chart shows opportunities of E-Payment to the Bank. 27%, 21% and 27% of respondents said it increases cash flow, increases productivity and increases convenience of payments and 20% of respondents said it reduces transaction costs, respectively. And other 5% responded by mentioning different advantages like it saves time and additional labour cost, uses to available cash at any time and it minimizes risk of theft.

Cash flow increment means that millions may be deposited and withdrawn in cash within a minute through electronic payment. Regarding to productivity the system by itself serves more customers than human beings. In connection to convenience of payments, machine is more effective in doing activities than man, without error. In relation to transaction costs, system reduces different costs like material cost, labour cost, etc.

Based on the respondents' answers, increasing cash flow and increasing convenience of payments are the best opportunities of e-payment. .

**Table 3.5 Easiness of ATM and Effect of language in the ATM**

	Do you think ATM is easy to use?			Does the two ATM's languages have effect on you		
	Yes	No	Total	Yes	No	Total
No.	27	3	30	10	20	30
%	90	10	100	33	77	100

Source: Customers Questionnaire

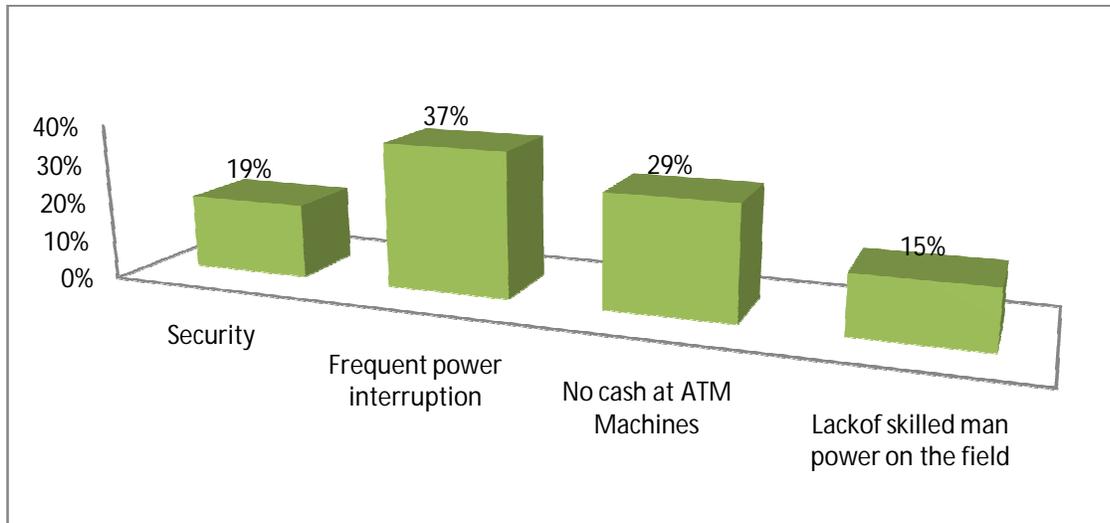
As presented in the above table 27 (90%) of the respondents said the ATM is easy to use, and 3 (10%) of them also said it is not easy to use. On the other hand, 10 (33%) of the respondents complained that the two languages of ATM machine are not enough for smooth use; while the remaining 20 (77%) supposed it does not have any effect. It can be learnt from the data presented above that an ATM machine is easy to use for our respondents and the two ATM machine languages (Amharic and English) have not any negative impact on them.

**Table 3.6 the requirement to be ATM card holder**

	Is the requirement to be cardholder fair?		
	Yes	No	Total
No.	25	5	30
%	83	17	100

Source: Customers Questionnaire

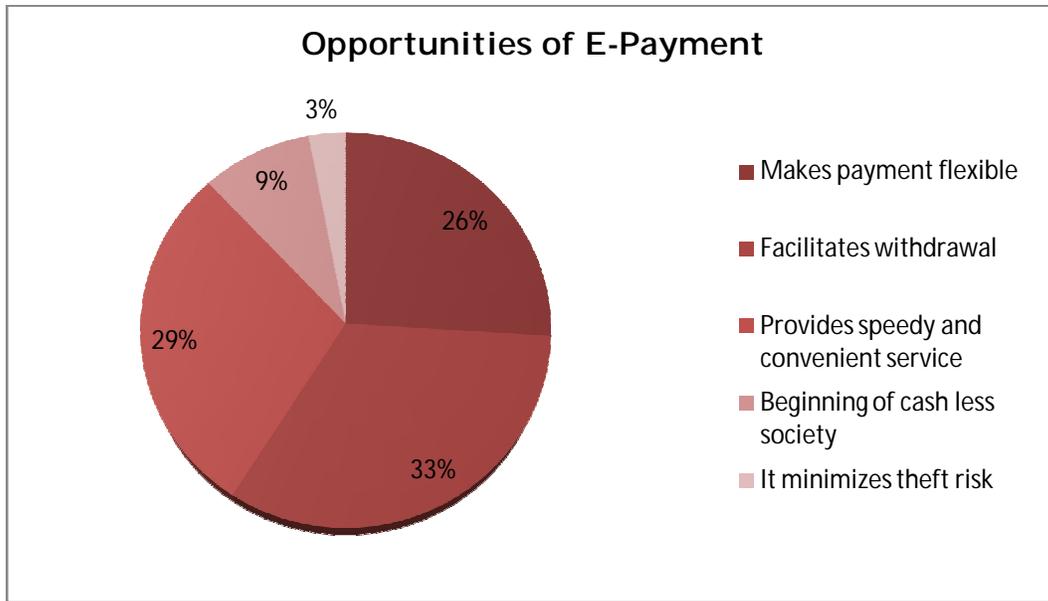
As above table shows 25 (83%) of the respondents said the requirement is fair and 5(17%) of them said it is not fair. The requirement means the joining fee of 25 Br., the charges of 0.25 Birr made for every withdrawal of 100 Br. and the maximum withdrawal of 5000 Br. Per day. Most of the respondents accepted the requirements to be fair and few of them said it is unfair.



Source: Customers Questionnaire

**Figure 3.5 challenges of Electronic payment**

As the above graph indicates, 37% of the respondents complained about frequent power interruption, while 29% said no cash at ATM machines and 19% said securities are electronic payment challenges of the bank. And the other 15% of the respondents mentioned different challenges such as; network failure, lack of skilled man power on the field, moreover the bank does not give enough orientation for the would be customer. Security means disclosure of private information, counterfeiting, and illegal alteration of payment data. As the above figure shows, frequent power interruption and no cash at ATM machines are the major challenges of customers of the Bank.



Source: Customers Questionnaire

**Figure 3.6 Opportunities in Relation to Electronic Payment**

As the above pie chart indicates 26% of the respondents believe electronic payment makes payment flexible, 33% think facilitates withdrawal, 29% say it provides speedy and convenient payment service, 9% also say it creates the beginning of cashless society and the rest 3% present different reasons, like: E-payment is available 24 hours without involvement of labour power, it minimizes theft risk and it saves time. As can be understood from the chart, respondents believe it facilitates withdrawal and provides speedy and convenient services are the best advantages of them.

As per the simple observation the researchers conducted, it could be observed by inserting our colleagues Visa Card of the Bank the minimum withdrawal of 10 birr and the maximum withdrawal of 5000 birr per day, the availability of two languages (Amharic and English). And also we have seen customers properly use ATM Machines by inserting their cards without assistance of employees.

## CHAPTER FOUR

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Every business has numerous processes, some has simple, others have complex and *cumbersome*. But as the business grows, acquires new customers, enters new markets, keeps the needs and wants of the customers and to be survive and competent in the market must develops it is service and follows the new technology. The company needs to maintain highly accurate and up-to-date payment system. Electronic payment system helps to simplify, integrate, and streamline all the business process, cost-effectively and easily.

The objective this study is to assess the challenges and opportunities of electronic payment system in the case of Wegagen Bank S.C and to recommend to avoid the challenges and to continue with the opportunities.

Data was collected from both primary and secondary sources to obtain the necessary information. The data was collected through questionnaires from employees and customers of the Bank. The collected data was presented and analysed by using different statistical tools like; percentage, table, graph and pie-chart.

## 4.1 SUMMARY

The objective of the study is to assess the challenges and opportunities of automatic teller machine(ATM) in the case of wegagen bank share company.

The main findings of the research can be summarized as follows.

- The bank is not efficient in dealing with traditional payment systems in connection with the bank's productivity.
- The employees accept the importance of the system, However the employees fear of losing their jobs remaining as their risk.
- Most of the employees have low skill in the system.
- Branch networking of the bank is somewhat good.
- Customers of the bank have low attitude about the system, they are not eager to know the system.
- The cost of ICT equipments are the challenges of the bank by affecting its profitability.
- The system also reduces the transaction cost of the bank.
- The company uses the automatic teller machine or(ATM) to increase the productivity of the bank.

## 4.2 Conclusions

As it has been discussed in literature part, the increase use of new communication technology and the need for specific payment mechanism for e-commerce have led to the development of e-payment, i.e. payment that are initiated and processed electronically. The convergence of money, commercial, and personal computer represents one of the great new markets of modern time and unforeseen opportunities can be expected to arise once a secure and cost effective mass-market, electronic system for making payment is successfully established.

Wegagen Bank Share Company has been working for the last **15** years, using traditional payment system. It is comfortable to use something that is known and understood. There is also fear involved to switching from known to unknown (new) one. Besides, there are many things needed to change from old to new system, like, time to learn the new system, training cost, resources cost, etc. However, the change is essential to be competent in the market and to satisfy customers.

Wegagen Bank Share Company is implemented the new system (electronic payment system) in the past two years. Electronic payment system means a process of transactions through internet whether the customer uses Visa, Master Card, Discover, Agar Card, American Express, and any other form of card. Electronic Payment System has several opportunities such as; increases cash flow, increases productivity, increases convenience of payments, reduce transaction costs, saves time, make cash available at any time and minimizes risk of theft.

However it has also its own challenges; the study identifies the following as challenges in adopting and using of e-payment system in the Bank. Socio-cultural challenge that is; lack of awareness on the benefit of new

technology and fear of risk. security challenges related to use of e-payment card , infrastructure problem such as; frequent connectivity failure in telephone lines ,low bandwidth for internet and frequent power interruption ;lack of skilled man power especially in e-payment system ;absence of legal framework and regulatory issue even if national bank of Ethiopia is on the way to introduce national electronic system.

From this study we find the bank has several challenges and opportunities of e-payment. The findings are to strengthen its opportunities; by sharing knowledge with various similar organizations, by giving further training for its employees and updating its technologies. In addition to this, it should try to weaken the challenges; by communicating with government agencies (such as Ethio-Tele com, EPECO, NBE, etc), creating awareness of its customers about E-payment.

### **4.3 Recommendations**

To mitigate the challenges and augment the opportunities of electronic payment system of Wegagen Bank Share Company, the following recommendations are provided by the researchers.

- ✓ The bank should have to raising awareness and offer training program about opportunities of e-payment that target the business community.
- ✓ Regulations – applicable regulations including those for electronic approval processes, consumer protection and e-transaction should be developed and standardized as needed.

- ✓ Public Education and Acceptability - e-payment is still new, series of sensitization meetings should be arranged at all levels. The banks and other stake holders must be educated and informed of the need to consolidate efforts to make e-payment successful.
- ✓ The cost of ICT equipment's is quite high, but the bank should have develop its capacity or negotiate with suppliers to decrease the cost or mode of payment.
- ✓ Security is one of the important factors for e-payment system and builds confidence of users. But proper security has to be applied in the system to gain users trust. If security of e-payment system is accessible by hackers, it is dangerous scenario to the users. So, system security that takes into account the technical and organizational IT infrastructure security must also be given the necessary attention.
- ✓ 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. Electric power providers are expected to deliver uninterrupted power. But the bank itself should have take alternatives action to reduce the power interruption by using diesel generators.
- ✓ 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 of information. An essential aspect of this task is to invest on efficient and secure e-payment and e-banking system

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## Questionnaire to be filled by employees of Wegagen Bank Share Company

This questionnaire is prepared by the student-researchers at Alpha University College in partial fulfilment of the requirements of a B.A Degree in Accounting and Finance. With this questionnaire the student-researchers intend to assess the Challenges and Opportunities of Electronic Payment in the Case of Wegagen Bank Share Company.

This questionnaire use only for academic purpose and we remain confidential.

Please answer the questions by putting a tick mark (✓) on the given box.

### Section A; Personal Information

1. In which department are you working?

Domestic Banking

International Banking Department

2. Level of education

Certificate

Diploma

B.A

M.A

Others specify \_\_\_\_\_

3. Do you think employees are assigned in Wegagen Bank S.C. according to their skills?

Yes

No

I do not know

4. How long have you been working for Wegagen Bank share company?

1-5

6-10

11-15

5. Do you think the company uses its resource effectively?

Yes

No

I do not know

6. Do you think managers get timely and accurate information to make decisions?

Yes

No

I do not know

7. Does the management have good communication with the employees?

Yes

No

8. Do you think the management gives favourable decisions on important issues?

Yes

No

I do not know

9. Do departments share issues that enhance the bank's productivity?

Yes  No  I do not know

10. How do you see the attitude of employees' for change?

Positive  Negative  Neutral  I do not know

### **Section B; Questions Related To Electronic Payment System**

1. Does the organization have written electronic payment systems and procedures?

Yes  No  I do not know

2. Do you think the bank is effective in dealing with the conventional (traditional) payment system?

Yes  No  I do not know

3. If your answer is "No", what do you think the reason is?

It is time taking  Compel to carry cash

Fear of theft  It is out-dated

Other specify \_\_\_\_\_

4. Do you have any knowledge about electronic payment system?

Yes  No

5. Electronic payment system is important for the bank's and customers.

Strongly agree  Agree  Disagree

6. How do you rate your skills on automated payment systems?

Excellent  Very Good  Good

Satisfactory  Not-Satisfactory

7. Do you think it is important to make the whole system computerized?

Yes, I do.  No, I don't.  I do not know

8. What are the challenges in relation to electronic payment in your Bank? You may provide more than an answer if necessary.

Inexistence of proper regulatory and legal frame work

Socio-cultural attitudes of customers

Cost of ICT equipment

Resistance to change in relation to new technology

Others, specify. \_\_\_\_\_

9. What are the opportunities in relation to electronic payment in your Bank?  
You may provide more than an answer if necessary.

It increases cash flow.

It increases productivity.

It increases convenience of payments.

It reduces writing of cheques.

It reduces transaction costs.

Others, specify. \_\_\_\_\_

### **Questionnaire to be filled by customers of Wegagen Bank Share Company**

**Dear respondent,**

This questionnaire is prepared by the student-researchers at St. Mary's University in partial fulfilment of the requirements of a B.A Degree in Accounting and Finance. With this questionnaire the student-researchers intend to assess the Challenges and Opportunities of Electronic Payment in the Case of Wegagen Bank Share Company.

This questionnaire is used only for academic purpose and the responses you provide will strictly remain confidential.

Please answer the questions by putting tick mark (✓) in the box given against each.

1. What is your occupation?

Employee  Merchant  Student

Others, specify. \_\_\_\_\_

2. How long have you been dealing with Wegagen Bank Share Company?

1-5  6-10  11-15

3. How do you rate branch networking of the bank?

Excellent  Very Good  Good   
Satisfactory  Not-Satisfactory

4. Is Wegagen Bank's ATM machine easy to use?

Yes  No

5. The ATM machine works in two languages. Does it have any effect on you?

Yes  No

6. Does the requirement to be a card holder is fair?

Yes  No

7. What are the challenges in relation to electronic payment in the Bank You may provide more than an answer if necessary.

Security

Frequent power interruption

No cash at ATM machines

Low internet connection

Other specify \_\_\_\_\_

8. What are the opportunities in relation to electronic payment in the Bank? You may provide more than an answer if necessary.

It makes payment flexible.

It facilitates withdrawals.

It provides speedy and convenient service.

It is the beginning of a cashless society.

Others specify \_\_\_\_\_