Electronic Retail Payment Systems:
User Acceptability and Payment Problems in Ghana

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Executive Summary

Title: Electronic retail payment system: User acceptability and payment problems in Ghana.

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Introduction: The payment system in Ghana has undergone considerable change as electronic payment has gained increasingly popularity, especially in the cities. In Ghana, most bills are paid by walk-in customers. Because of limited transportation, many customers prefer paying by other means that may not include traveling. Customers are now looking for a way that they can easily make payments without going to each biller’s location, purchase money orders, and no loss of time. This thesis looks into issues in payment problems and user acceptance.

Problems: Payment for goods and services in Ghana is characterized by long queues, long distance traveling and time wasting that negatively affect business activities and ultimately economic development. Settling utility bills, payment for goods and services, and money transfers has been a major headache for individuals and firms in Ghana resulting in declined business activities and huge debt to most of the utility services providers. Indeed, most Ghanaians are yet to fully realize the benefits of the technological advances made in banking services like networking of business branches, electronic transfers and use of automated teller machines. The few payment mechanisms that are available are not being well patronized by bank’s customers.

Purpose: The purpose of the study is to assess the issue of user acceptance in the existing electronic retail payments and also to ascertain the impact in solving some of the problems in retail payment for goods and services in Ghana. The research also describes and briefly analyses
recent and potential future trends in electronic payments in Ghana, and the challenges faced by participants in this business. It is also in response to the growing need in Ghana to develop non-cash payment products and clearing systems in order to reduce the over-dependence on cash payments. In analyzing the electronic payments, we restricted ourselves to business to consumer (B2C) segment.

**Research Questions:** The research questions for our study are: Can electronic payment system replace existing payment systems and solve payment problems? How are customer attitudes about electronic payments changing? What are the impediments to market development and innovation in electronic payments?

**Method:** This study used primary sources in a form of “consumer survey” questionnaire in obtaining the perceptions of bank customers (mostly individual customers) and interviews of bank’s staffs. An extensive review of the available literature provided the foundations for the writing of the thesis. The study collected data from secondary sources such as the Internet, articles, databases, and books, and were analyzed and interpreted. In the rare situations when official statistics are available, the recentness of the data determined its usefulness.

**Conclusions:** It is universally agreed that a safe and efficient national payment system is essential for sound banking. The benefits derived from electronic payment cannot be over emphasized. Numerous studies have shown that electronic payment brings many benefits to users – convenience, security, record-keeping, low cost, and etc. Our study shows that electronic payment systems have the potential to eliminate if not reduce the problems consumer face in the payment and settlement system. The study also revealed that consumers are ready to embrace the new payment systems – electronic payment, provided other well anticipated side benefits are promoted to them.

**Keywords:** Electronic payment systems, payment mechanisms/instruments, retail payments, electronic retail payments, ATM, payment settlement problems
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1.0 Background Introduction

1.1 Introduction

The world has witnessed an upsurge of electronic payment instruments meant to facilitate trade and simplify payments. (Abor, 2004) Before the introduction of electronic payment into the Ghanaian banking system, all customers had to walk into the actual bank to do transaction of all kinds. Customers had to queue up and spend more hours to talk to a teller to make their transactions. (Abor, 2004) The inconveniences caused by these long queues can discourage someone to make payment.

For many years, bankers, technology specialists, entrepreneurs, and others have advocated for the replacement of physical cash and the introduction of more flexible, efficient and cost-effective retail payment solutions. Countless conferences and seminars have been held to discuss the concepts of cashless and “chequeless” society. (Bank for International Settlement, 1998)

Electronic retail payment has been designed to help individual customers and companies as well as the banks itself in eliminating or reducing some of the problems inherent in the settlement and payment process. (Federal Reserve Bank of New York, 1996) Customers can pay their bills without having to actually move to the bank’s premises. They may also have access to their account information and even transfer money to other accounts in the comfort of their homes.

Ghanaian banks are making huge investments in technology to upgrade their infrastructure, in order to provide new electronic information-based services. Electronic services such as online retail banking are making it possible for individuals and small institutions to take advantage of new technologies at quite reasonable costs. (Abor, 2004)

In Ghana, electronic retail payments are being continuously developed, to replace or reduce paper-based payments. Many new payment services have come into existence in recent years, most of which are based on technical innovations such as card, telephone and the Internet. (Abor, 2004)
1.2 Statement of the Problem

Payment for goods and services in Ghana is characterized by long queues; long distance traveling and time wasting that generally affect business activities and ultimately economic development. (Sarpong, 2003) Settling utility bills, payment for goods and services, and money transfers has been a major headache for individual and firms in Ghana resulting in declined business activities and huge debt to most of the utility providers. In fact, the country have not yet realize the full benefits of the technological advances in electronic payment such as the use of cards, automated teller machines (ATM), the Internet, mobile phones, and etc. (Sarpong, 2003)

The payments and clearing system in the country is under developed. For instance, cheques drawn in Accra against accounts held in banks in Accra taking could take three days whilst cheques drawn on different regions can take several weeks. There is no central clearing system to clear debit card transactions between banks. The banking halls continue to be immersed with the long queues as people come in to collect their monthly wages or salaries. Many people have been holding large sums of money outside the banking system as a result of the ordeal one has to go through before withdrawing money or making payment. (Sarpong, 2003)

However, faced with such problems in the payment process, only a few payment solutions have been introduced so far in Ghana to solve them. Cash still remains the most popular retail payment instrument, despite the increase in the introduction of electronic payment schemes in the country. (Sarpong, 2003) Whether consumers are adopting the current and emerging payments mechanisms is another issue confronting the banks.

1.3 Objective of the Study

The objectives and structure of this study attempts to tackle issues and it describes the different electronic payment schemes available in Ghana, discuss patronage and to ascertain its contribution to the elimination or reduction in problems inherent in the payment process in Ghana. The research describes and briefly analyses recent and potential future trends in electronic payments in Ghana. It will also assess and explore issues of user acceptability of the
current payments systems. Furthermore, the research will investigate attempts that have been made by some of the banks to introduce such a system, and the successes and failures.

It is also meant to assist consumers, businesses and service providers in Ghana to understanding the various electronic payment alternatives. It is also in response to the growing need in Ghana to develop non-cash payment products and clearing systems in order to reduce the over-dependence on cash payments.

We concentrate on those electronic payment systems that make use of the banking system since that is where these services are mostly being offered currently in Ghana. We will discuss some electronic payments products in Sweden and other countries for comparative analysis.

1.4 Research Questions

With any new payment product, it is important that the key features of the product are clearly explained to the consumers and ensuring that the product actually works as described. Customers who fail to fully understand how the system work and the benefits to be derived from its use may take inadequate precautions in using the product. For this study, the following are the major research questions:

- Can electronic payment system replace existing payment systems and solve payment problems?
- How are customer attitudes about electronic payments changing?
- What are the impediments to market development and innovation in electronic payments?

1.5 Scope of the Study

The discussion will concentrate on electronic retail payment systems – focusing particularly on the needs of consumers. While there are many emerging types of electronic retail payment schemes, special emphasis will be given to payment methods that utilize the services of banks. Such schemes include ATMs, the Internet, mobile phone, debit and debit cards, etc.
It is not possible to capture all the important details about an entire payment application; however, an insight into a selection of these payment systems can be valuable in helping people understand different payment systems in relation to ones that they may already be familiar with. Due to mass of different payment schemes, it is necessary to limit our scope of this thesis. This thesis also limits its focus to schemes available in Ghana and sometimes comparisons are made with schemes pertaining to other parts of the world. This thesis is not intended as an exhaustive survey of all developments in the field of electronic retail payments nor intended to cover all the issues relevant to these developments. Rather, the thesis aims to put the current developments into a broader context, to describe, classify and analyze a specified segment of initiatives.

1.6 Literature Review

New electronic payment systems are being introduced into Ghana at an increasing rate. Forecasts indicate that this trend will continue for foreseeable future. Early work by Abor (2004) was concerned with technological innovations and banking in Ghana. Additional work by Deutche Bank Research (2001), Vartanian (2000) and Birch (1998) looks at the future of electronic payments.

Several researchers have addressed the problem of retail payment, Ferguson (2000), Malek (2001), Bank for International Settlements (2000), Mester (2000) and OECD Information Technology Outlook (2000) studied various aspects of this subject.

The work carried out by Abor’s analyses the perception of bank customers pertaining to the effect of technological innovations on banking services in Ghana. A number of studies have also concluded that information technology has appreciable positive effects on bank productivity; cashiers’ work, banking transaction, bank patronage, bank services delivery, and customers’ services (Balachandher et al, 2001; Hunter, 1991; Yasuharu, 2003). In effect, it enhances savings mobilization and financial intermediation. Efficient payment systems rely on non-cash payments, and that an efficient and reliable payment system facilitates economic development. (Annon, 2003)
Carow and Staten (1999) used a logistic regression model to investigate preferences of consumers in using debit cards, credit cards, and cash for gasoline purchases. Humphrey and Hancock (1997) have provided an extensive survey of the payments literature. Using the Federal Reserve’s 1995 Survey of Consumer Finances (SCF), Kenickell and Kwast (1997) analyzed the influence of demographic characteristics on the likelihood of electronic payment instrument usage among households.

1.7 Justification for the Study

Since the late 90s, many African countries have started to implement policies that will enhance the electronic retail payment systems. Following advances in electronic payment, information technology have created both the opportunity to improve the effectiveness of existing payment transactions. Advances in networked information technology, more computing power and lower computing costs are driving more and more firms toward the paperless world of electronic commerce. In particular, the Internet’s potential for providing communications and payments more conveniently and less expensively is attracting corporations. (Financial Services Technology Consortium, undated)

Despite the recent remarkable successes in electronic payment in Ghana, there is more room for improvement to promote non-cash payment systems since a reliable and efficient payment system is crucial to the orderly operation of a nation’s banking and financial system, its real economy and to the reputation of the central bank. (Central Banking, 2004)

1.8 Delimitations

Because of resource constraints, we did not try to incorporate explicitly all electronic payment technologies and services. Unless otherwise noted, in this thesis the term electronic payment is used in its broadest sense and refers to payments that enable storage and spending of monetary value; are primarily intended for making payments for consumer goods and services; are based on electronic means of payment; offered directly to consumers; and not (traditional) bank deposit accounts.
Getting answers to our questions in Ghana did not proved to be easy. We found a number of challenges to gain the information and knowledge we sought. For instance, issues connected to policies and regulations in electronic payment use were not easy to obtain. Some government agencies proved reluctant to share the information they have. Most bank customers were not willing to reveal their wealth status to enable us make a thorough analysis.

1.9 Disposition of the study

Chapter 1 introduces the problem of the study and surveys the literature concerning the reports of several studies, and the limitations of the study. In chapter 2, we discussed the methods used in gathering data for our research – research strategy and quality of research design. Chapter 3, we propose theoretical frameworks necessary for the discussion in the subsequent chapters. We provide an overview of existing payment practices by looking at the range of payment products currently available in Ghana. In chapter 4, we made a detailed investigation into the electronic payment mechanisms available in Ghana. In chapter 5, we analyzed the data gathered from the consumer survey performed. In particular we discussed problems bank customers face in making payments. Chapter 6 discusses the development of electronic payments in some selected countries and its benefits to the consumers as well as the economy. In chapter 7, we presented information on the barriers which exist in preventing the country to achieve efficient electronic payments system. Areas where further research is needed are outlined in chapter 8, along with some conclusions and recommendations.
2. Research Methodology

In this section, we will concentrate on the method we adopted throughout this study. First the choice of method for the study will be accounted for. We will then discuss the research method, research strategy, research process and the quality of the research.

2.1 Choice of Research Method

Two different approaches can be used in writing a thesis of this nature – inductive or deductive. Deductive approach generates hypotheses from a particular theoretical framework and then tests these by observing reality. It is concerned with developing propositions from existing theory and making them testable in the real world. (Dubois & Gadde, 2002)

An inductive approach identifies a real phenomenon from which patterns are identified and described, and appropriate theories selected to explain and interpret the phenomenon. It starts with empirical observations, translated into generalizations that are in turn serving as a foundation for developing theories or models. (Carneiro & Merzoug, 2001)

An inductive approach is more appropriate when performing case studies of this nature. The inductive approach can be seen as a first step on the way of creating knowledge in a field where there is no prior theories. (Yin, 1994) We used inductive approach in the writing of this thesis. Two reasons inform our judgment in using the inductive approach: first there is lack of established theoretical frameworks that deal with electronic retail payment. Throughout our research, we have not come across landmark theories on electronic retail payment. Therefore, we started this study by exploring the topic in general, and considering issues that seems important to the study and subsequently identifying some relevant frameworks as the study progresses.

The other reason is that since there have been constant innovation in electronic payment mechanisms available today, with its multiplicity in different countries, little regarding a standardized electronic payment mechanism is known, which rules out a deductive approach which is based on testing an acceptable theory in a new situation.
First, we began this study by conducting research in electronic retail payment on the Internet in general as well as those pertaining in Ghana using written sources and telephone interviews as our information sources. We used the data gathered to develop theories based on the analysis of the data.

2.2 Research Strategy
The choice of a research strategy depends on a number of factors. Yin (1994) identifies five main research strategies within the social sciences – experiments, surveys, archival analysis, histories and case studies. The most appropriate strategy for a given situation depends on such factors as the type of research question, the control an investigator has over actual behavioural events, the focus on contemporary as opposed to historical phenomena. (Yin, 1994)

2.3 Case Study Design
Because the focus of this study is on contemporary phenomenon with some real-life context and which includes direct observation and systematic interviewing, the case study method is the preferred choice in this study.

Case study research design has multiple meanings in the study of social sciences. It can be used to describe a unit of analysis (a study of a particular organization) or to describe a research method. Yin (2002) defines case study as an empirical enquiry that looks into contemporary phenomenon within its real-life situation, more so when the boundaries between phenomenon and context are not clearly stated.

In this study it was necessary to first examine the area of electronic retail payment and its influence in retail payments. Through in-depth case study of Ghana, how electronic payment has influence the retail payment market in Ghana were investigated and analyzed. This study is based on both primary and secondary data and it provides a framework for considering how electronic payment can help solve retail payments problems.
This research work involves the use of survey interviews of some employees of the banks under study. Those involved include bank managers and staffs. On the other hand, questionnaires were sent to bank depositors or customers to ascertain how the various electronic payment products have proved to be a solution to their payment problems.

For the banks, we selected branch, sales/marketing, customer relations’ managers, IT executives and other middle-level employees to ascertain the various electronic payment mechanism in use at the banks, how customers have patronized their products and how it has helped to reduce retail payment problems faced by Ghanaians. The selection of the bank’s customers was based on a random selection of bank customers at the various banks premises during the normal banking hours and represented a wide diversity in terms of years of employment, educational background, and job positions. For corporate bodies, a few were selected based on the information obtained from some of the banks about their regular payment activities through the banks.

The survey questionnaires to the bank customers was focused on the different electronic retail payments methods available in Ghana, customers views about them, and customers experiences, elicited from their response to structured statements. The questionnaire covered factors influencing payment instrument choice pertaining to customers such items as educational level, wealth, personal, and employment; problems encountered in withdrawing money and paying bills. It also consisted of structured statements concerning customer’s preference for electronic payments products, and customer’s use and experience with e-payments.

Some of the unstructured interviews to consumers asked questions on their recent payment experiences, the options that were considered, what they did and why. This was done for various reasons; first, because of the personal nature of the subject matter, consumers tend to guard their experiences with money and payments.

Apart from the primary data, we also collected secondary data from individual banks, the Bank of Ghana (BOG), books, the Internet, magazines, trade journals, etc. The secondary data were
based on the various electronic retail payment instruments being made available by the banks, user acceptability and how these has helped to reduced the payment problems in the Ghanaian economy. The analysis of the impact of electronic payment on bank activities and problems in payment relied on secondary data supplemented by primary data from the survey questionnaires.

2.4 Quality of Research Design

Yin (1994) stated that in order to determine the quality of a research, there are four different tests that should be conducted on a case study. The four different tests are construct validity, internal validity, external validity and reliability.

2.4.1 Construct Validity

This refers to the extend to which the study actually measures what it is supposed to measure, as well as whether operational measures have been constructed to ensure that subjective judgments are avoided. It is mainly concerned with the relationship between the collected data and the conclusions drawn. According to Yin (1994), researchers should in this context try to avoid subjective judgment and aim at establishing correct operational measures for the concepts being studied.

There are three ways of improving construct validity of a study. The first is the use of multiple sources of evidence which is relevant during data collection, the second is the establishment of chain of evidence, and the third is having a key informant review a draft case study. (Yin, 1994)

We have tried to maximize construct validity and believe that we have succeeded to a reasonable degree. In searching for information on electronic retail payment in Ghana, multiple sources of information were used and were also cross-checked in order to remove any subjective judgments. We have used both primary and secondary sources consisting of websites, books, articles, journals and government departments. We also tried to get different views from individuals such as customers, bank staffs and the general public. The construct validity would have been even higher with access to more extensive secondary information but we believe that our method has
helped us to measure what we intended to do. Thus, the construct validity is medium strong according to our opinion.

2.4.2 Internal Validity
This is concerned with the accuracy to which the results and findings reflect reality. It is about establishing a correct casual relationship between the findings within the field being studied. (Yin, 1994)

To increase the internal validity of this study we tried to follow the causes and effects in the different parts of this thesis. We realized that we have missed several information about electric payment schemes available to the banks especially statistics on its used. Since most of the banks have no data covering the actual number of people who patronize their product, it became difficult for us in establishing such information. These facts may have prevented us from accurately judge the extents to which customers have patronized electronic payments products. So we relied mostly on information from interviews to ascertain the extent of customer’s patronage. But all the same, we believe the internal validity of this study is fairly high.

2.4.3 External Validity
External validity refers to the possibility of generalizing the results of a specific case study to other situation. (Herzog, 1996) In case of case studies, it deals with analytical generalizations, meaning some of the results are generalized to some broader theory. (Yin, 1994) Statistical generalization is the most common in survey studies and an integral feature of generalizing from experiments. (Yin, 1994)

The conclusions drawn in this case study of electronic retail payments in Ghana are of an overall in nature and hence are likely to be helpful in analyzing other countries in West Africa. Although, each country in West Africa has its own unique features, we think parallels can be drawn from the findings and relate it to other countries. On countries not found within West Africa, we believe that they may find the results useful to some extent.
2.4.4 Reliability

Reliability means that there should be no error or biases in the study. Reliability is the extent to which a test or procedure produces similar results under constant conditions on all occasions. Hence, if a study is repeated by a different researcher using the same method as the original researcher, the same results should be obtained. One way of securing the reliability of a study is that every step and procedure should be documented thoroughly. (Yin, 1994)

In order to increase the reliability of the case study, all the interviews have been documented. The interviews were conducted randomly without a specific group of customers in mind. Different customers from different locations were interviewed in order to ensure reliability of the study. It may be difficult to achieve the same or exact results by a different investigator since a greater part of our data collection consists of qualitative interviews. Another researcher may not get the same result since interactions between people can never be repeated in the same way. A different researcher may even interpret the information gathered differently and thus may not achieve the same results. But because we have documented our findings and procedures as thoroughly as possible, we think this may increase the probability of the study to be repeated and achieve similar results, if and only if nothing changes with regard to the content of this thesis. We therefore deemed the reliability of this thesis to be reasonably high.
3. Theoretical Framework

The theories explained in this chapter deals with the reasons why consumers adopt electronic payment and whether this can alleviate some of the problems inherent in the traditional payment schemes (i.e. cash payment). As explained earlier in chapter two, there are no single or widely accepted theories that explain the adoption of electronic payment instruments. We will develop our own theories which would be used to analyze whether electronic payment mechanisms have reduced or eliminate the problems associated with cash payments in Ghana.

Payment methods based on electronic instruments have undergone many changes recently. This chapter will also provide a brief overview of the recent trends and map the current situation.

3.1 Definitions of Electronic Payment Systems

Due to the nature of electronic payment systems, there have not been a widely or universal definition for it. But we have attempted to bring some few notable definitions given some writers. These range from now-familiar automated teller machines (ATM) to Internet bill payments.

According to Humphrey et al (2001), electronic payment refers to cash and associated transactions implemented using electronic means. Typically, this involves the use of computer networks such as the Internet and digital stored value systems. The system allows bills to be paid directly from bank accounts, without being present at the bank, and without the need of writing and mailing cheques.

E-payment can be defined as ‘payment by direct credit, electronic transfer of credit card details, or some other electronic means, as opposed to payment by cheque and cash’. (Agimo, 2004) It was also defined as “a payer‟s transfer of a monetary claim on a party acceptable to the beneficially.” (European Central Bank, 2003) According to Kalakota & Whinston (1997, p. 153), “electronic payment is a financial exchange that takes place online between the seller buyer and the seller. The content of this exchange is usually the form of digital financial instrument (such
as encrypted credit card numbers, electronic checks, or digital cash) that is backed by a bank or an intermediary, or by a legal tender.”

For the purpose of this thesis, the term “electronic payment” refers to as convenient, safe, and secure methods for payment of bills and other transactions by electronic means such as card, telephone, the Internet, EFT, and etc. Electronic payment gives consumers an alternative to paying bills and debts by cash, cheque, money order, etc. Its main purpose is to reduce cash and cheque transactions.

According to Pariwat & Hataiseere (2004), for the achievement of effective and efficient retail payment systems, the following considerations that shape the choice of payment method for consumers and businesses should be taken into account; the convenience, reliability and security of the payment method, the service quality, involving such features as the speed with which payment are processed; the level and structure of fees charged by financial institutions; taste and demographic; and technological advances which have improve the speed, convenience and flexibility of different payment systems.

### 3.2 Factors Affecting Payment Choice

#### 3.2.1 Customers’ Wealth/Levels of Income

Consistent with Kwast and Kennickell (1997) research, wealth has an important role to play in terms of consumer’s decisions on payment choice. Consumers’ wealth may influence payment choice and the availability of payment instruments that one can choose. For instance, while wealthy consumers may be able to fund their obligations generally, consumers that experience brief financial shortfalls may not find electronic bill payment desirable as a payment instrument. (Mantel, 2000) In such a situation, the consideration of the risk factor will let some consumers to avoid using pre-authorized electronic bill payment.
3.2.2 Educational Level

On the bank customers’ survey, we also focused on education, because this might affect the demand for electronic banking products. For example, Kwast and Kennickell (1997) have illustrated how education play important role in determining household use of e-money products. Kwast and Kennickell concluded that the US market for such products is still highly specialized, with the demand coming almost entirely from higher income, younger, and more educated households that have accumulated significant financial assets.

Educational levels of customers determine whether consumers will adopt electronic payment or not. Studies have shown that highly-educated people patronize electronic payment products than less-educated people. The technicalities involved in some electronic payment transactions discourage less educated customers to patronize its use. (Annon, 1999)

3.2.3 Employment Levels

Those employed who receive their pay through the banks are more likely to use electronic means of payment. Employees, through their constant contacts with banks are more exposed to payment products, and are therefore, likely to patronize the products. According to Ferguson (2000), more than half of the workers in the US, in 2000 receive a direct deposit of their pay through the Automated Clearing House (ACH).

3.2.4 Personal Preferences

Another factor influencing payment instrument choice pertains to customers’ personal preferences. The following six general consumer preferences were identified: (1) control and customer service; (2) budgeting and record keeping; (3) incentives and low cost; (4) convenience; (5) safe, easy and convenience; and (6) privacy and security. In our analysis of the empirical data, we may highlight these preferences but not in detailed.
3.2.5 Transaction-Specific Factors

Transaction-specific is another factor that influences consumer decision-making in payments. This relates to the specific nature of the payment being made, where it is being made, and how the consumer views their relationship with the merchant. (Mantel, 2000) The use of a particular payment instrument may depend on the value of the bill (whether it is large or small). Also the availability of payment infrastructure determines the choice of payment instrument. (Mantel, 2000)

3.2.6 Marketing Campaigns

Another factor that influence consumer decision-making relate to marketing campaigns. Increased use of electronic payment instruments are believed to have been achieved through large-scale consumer marketing campaigns funded by some financial institutions. The marketing activities employed by the financial institutions are expected to aid utilities by educating consumers as to the benefits, ease of use, convenience, and security of paying bills electronically. (Mantel, 2000)

3.3 Recent Trends in Electronic Payments

In this section, we will provide a brief background to some of the rapid emergence of methods which use electronic means to make payment. Some of the new techniques represent automation of existing methods of payment, whereas others are new or revolutionary.

3.3.1 Card Payments

**Automated Teller Machine (ATM)**

ATM is a combined computer terminal, with cash vault and record-keeping system in one unit, permitting customers to enter the bank’s book keeping system with a plastic card containing a Personal Identification Number (PIN). It can also be accessed by punching a special code number into the computer terminal linked to the bank’s computerized records. (Rose, 1999) Mostly located outside of banks, it can also be found at airports, shopping malls, and places far away from the home bank offices, and offering several retail banking services to customers.
First introduced as cash dispensing machines, it now provide a wide range of services, such as making deposits, funds transfer between two or more accounts and bill payments. (Abor, 2004)

**Electronic Purses/Wallets**

There are two categories of e/wallet, these are;

a) E-wallets that store card numbers. This is a virtual wallet that can store credit card and debit card information. Other information that can be stored on this card is passwords, membership cards, and health information. Some of the e-wallets make it easier for consumers to buy goods using the card. (Rudl, undated)

b) E-wallets that store card numbers and cash. The second category of a digital wallet is where consumers store digital cash, which has been transferred from a credit card, debit card or virtual cheque inside their e-wallets. It operates like having a virtual savings account where charges are made for ongoing purchases, particularly micro-payments. (Rudl, undated)

**Electronic Funds Transfer at Point of Sale (EFT/POS)**

EFT/POS is an online system that involves the use of plastic cards in terminal on merchants’ premises and enables customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases. It uses a debit card to activate an EFT process. (Chorafas, 1988) It actually comprises two distinct mechanisms: debit and credit cards.

**Credit Cards**

This is a plastic card that assures a seller that the person using it has a satisfactory credit rating and that the issuer will see to it that the seller receives payment for the goods or items delivered. This represents the automated capture of data about purchases against a revolving credit account. (Pierce, 2001)

**Debit Cards**

These were a new form of value-transfer, where the card holder after keying of a PIN, uses a terminal and network to authorize the transfer of value from their account to that of a merchant.
Introduced more recently, debit together with credit cards represent the most rapidly growing method of payments in several OECD countries. (Pierce, 2001)

When a payment is made through a debit card, the funds are immediately withdrawn from the purchaser's bank account. The advantage is that the buyer has the funds to make the purchase and paid for right away, so there's no credit card shock when the statement arrives in the mail. (Pierce, 2001)

**Smart Cards**

A smart card is a plastic card with a computer chip inserted into it and that store and transacts data between users. (Smart Card Basics, 2004) The data, in a form of value or information is stored in the card’s chip, either a memory or microprocessor. “Smart card-enhanced systems are in use today throughout several key applications, including healthcare, banking, entertainment and transportation.” (Smart Card Basics, 2004) One of the features of this card is that it improves the security and convenience of transactions. The system works in virtually any type of network and provides security for the exchange of data. (Smart Card Basics, 2004)

**3.3.2 Mobile**

According to Zika (2005), “a mobile payment is an electronic payment made through a mobile device (e.g., a cell phone or a PDA).” ¹ This uses a mobile device to initiate and confirm electronic payment. In the field of payments, mobile phones opportunity is seen in the embedded SIM (smart) card used to store information of users. The advantage of not needing to use other devices such as modems, point of sale terminals, and card readers for mobile payments is also quite clear. (Zika, 2005)

Costello (2003) envisaged that further developments in the mobile payments content were inevitable in the near future. Mobile devices might be used in micro-payments such as parking, tickets, and charging mobile phones.

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¹ A Personal Digital Assistant (PDA) is a small handheld computer.
3.3.3 Telephone Banking

Telephone banking or telebanking is a form of virtual banking that deliver financial services through telecommunication devices. Under this mechanism, the customer transacts business by dialing a touch-tone telephone connected to an automated system of the bank. This is normally done through Automated Voice Response (AVR) technology”. (Balachandher et al, 2001)

Telebanking has numerous benefits for end users. For the customers, it provides increased convenience, expanded access and significant time saving. Instead of going to the bank or visiting an ATM, retail banking serves the same purpose for customers to get the services at their offices or homes. This saves customers time and money, and gives more convenience for higher productivity. (Leow, 1999)

3.3.4 Personal Computer Banking (Home Banking)

This term is used for a variety of related methods whereby a payer uses an electronic device in the home or workplace to initiate payment to a payee. In addition to computer technology, it can be performed using the telephone and IVR². (Chorafas 1988)

“PC- Banking is a service which allows the bank’s customers to access information about their accounts via a proprietary network, usually with the help of proprietary software installed on their personal computer”. (Abor, 2004) It is used to perform a variety of retail banking tasks, and offers the customer 24-hours services. “PC-banking has the advantage of reducing cost, increasing speed and improved flexibility of business transactions.” (Balachandher et al, 2001)

3.3.5 Online/Internet Payments

This is the means by which customers transact business with a bank through the use of the Internet network. Customers can access their bank accounts and make transfers through a web site provided by the bank and complying with some rigorous security checks. The Federal Reserve Board of Chicago’s Office of the Comptroller of the Currency (OCC) Internet Banking

² Interactive Voice Response (IVR) is a software application that makes use of both touch-tone keypad and voice telephone input selection and ensures that response is received by way of fax, voice, email, callback or other media.
Handbook (2001), describes Internet Banking as “the provision of traditional (banking) services over the internet”.

The Internet is able to offers instantaneous settlement of transactions and the prospect of a highly cost effective payment system for low value transactions. The Internet has the potential to reach majority of customers since it can disseminate “advertising material” through World Wide Web home pages and product databases. (Neuman & Medvinsky, 1996)

3.3.6 Electronic Cheque

Electronic cheques are used in the same way as paper cheque – the clearing between payer and payee is based on existing and well known banking settlement system. The only difference between paper and electronic cheques are the dematerialization of the payment instrument which is passed on via computer networks like Internet in the later technology. ECheck proposed by Financial Services Technology Consortium (FSTC) is an example of the electronic cheque. (United States Department of the Treasury Conference, 1996)

Electronic cheques also known as e-cheques are virtual cheques that allow consumers to use Internet in making cheque payments. The buyer fills out a form (that looks like a cheque on the screen) with the necessary information, and then clicks the "send" button. The information then goes through a computer or a transaction service, depending on which way one chooses to accept check payments. (Rudl, undated)

3.3.7 Digitized 'E-Cash' Systems

E-cash payment system takes the form of encoded messages and representing the encrypted equivalent of digitized money. One key attraction is that it avoid the time and expense associated with becoming an approved credit card accepting merchant. It does not require the use of intermediary; therefore anyone can effect payment directly. (Crede, undated)

However, most present schemes require the direct involvement of a bank for its system of digital cash issuance. According to Crede (undated), “a bank is integral to the scheme, since it is
required to hold collateral and to provide ultimate settlement of e-cash to more directly convertible currencies.”

### 3.3.8 Digital P2P Payments

Bank-based P2P\(^3\) system allows users to send money from bank accounts and credit cards electronically. It employs e-mail services to notify recipients of an impending funds transfer. Most bank-based P2P requires the sender to register with the P2P site. Most of the providers allow users to move money a limited amount of money around the world. (Rudl, undated)

P2P e-mail payments are offered mainly through Yahoo!, the Postal Service, and some banks. Example of companies that offers P2P payment services is MasterCard which enable users to use digital wallet to make payments from a credit or debit account to any person in the world, in their local currency, directly into their bank account or as a check mailed to that person. (Rudl, undated)

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\(^3\) Person-to-Person (P2P) enables anyone with an email address or a mobile phone number to send and receive payments.
4. Empirical Data

This chapter provides an overview of existing payment practices by looking at the range of payment products provided by banks in Ghana. It describes the various forms of electronic payment mechanisms integrated into the banking system in Ghana. Each of these evolved in different ways, but in recent years different groups and industries have recognized the importance of working together.

As pertains in many other countries (both developed and developing), cash is by far the most widely means of payment in Ghana. (Acquah, 2001) Whereas cash is use for payment of low values in other developed countries, a significant portion of both medium and large-value transactions are made through cash in Ghana. This is particularly true in the capital, regional, district capitals. The intent of this section is to provide some key information necessary for a more detailed analysis in the next section. The various electronic delivery channels in Ghana are discussed below.

4.1 ATM Card

A major advance in the electronic aspect of the payment systems was the introduction of automatic teller machines (ATMs). The goal is to reduce over-the-counter workload of human tellers. Banks in Ghana, providing this service are currently engaged in finding ways whereby banks could have reciprocal use of each other’s ATMs. This would imply that customers would not be limited to the use of their bank’s ATM, thus providing greater convenience for their customers. (Abor, 2004)

The first bank to introduce this service in Ghana was The Trust Bank, which has installed ATMs since 1995 that allow customers 24-hour access to their funds. The Trust Bank has networked all its branches to an ACH\(^4\) so that customers can withdraw funds at any of their branches. Following closely are Standard Chartered Bank and Barclays Bank. The two banks have centralized operations at their respective head office, and have networked all their branches to

\(^4\) Automated Clearing House
enable customers to check their balances, make withdrawals, or deposit funds into their accounts. (Abor, 2004)

According to Abor (2004), Ghana Commercial Bank (GCB) in collaboration with Agricultural Development Bank started to offer ATM in 2001. Today, majority of the banks operates ATMs in Ghana and it has been the most successful in the county. ATMs have made it possible for people to transact business without having to visit their branch for the same services. GCB have is known as READYCASH where customers can access his/her current or savings account. Through any of their READYCASH dispensers networked, customers can do all sort of transactions throughout the day. These cash dispensers can be found in fifteen locations in the country.

4.2 Credit Card

Major international credit cards such as Visa, MasterCard, American Express and others such as Maestro are accepted as a medium of payment in major shops, hotels, restaurants, supermarkets and travel agencies in Ghana. Most of these cards may be also used at ATMs belonging to some of the banks to collect small amounts of local currency. (Ghanaweb, undated)

4.3 Debit Card

Standard Chartered Bank was the first bank to lunch debit card in Ghana in 2001. This has been incorporated with the ATM cards, which have increased its availability to the public. The card gives customers access to their funds through SCB ATMs or any VISA branded ATM throughout the world. In 2004, the First Atlantic Merchant Bank (FAMB) introduced the widely regarded American Express into the Ghanaian market. Most of the categories of the Express card – the Basic Green Card, the Golden Card, and the Platinum Card, are on offer to its customers with appropriate credit rating.
SG-SSB\(^5\) Limited in collaboration with the Visa International has launched four Visa Debit Card Products for its domestic and international customers. The Visa Trump Card has a PIN protection unique to each customer and can be used in various points of sale terminals and ATMs both in Ghana and in 150 countries across the world. (Bank of Ghana, 1999)

### 4.4 Electronic Cards

SG-SSB introduced the first major cash card in May 1997. This card is known as ‘Sika Card’, onto which a cash amount is electronically loaded. (Abor, 2004) Transaction Management Services (TMS) based in Ghana introduced a domestic online debit card POS (point of sale) services in June 2002 that allows consumers to effect immediate payment for goods and services from their accounts through the online electronic transfer of funds with banks connected to TMS inter-bank switch. Three banks – Ecobank, Cal Merchant Bank and The Trust Bank with their domestic debit card “E-Card” was the first to utilize the system in 2002. The card is online in real time, and permits holders to instantly purchase goods and services without paying cash but simultaneously debiting the cardholder’s account and crediting the merchant’s bank account.

Barclays Bank Ghana has launched another unique product called Travelex Cash Passport. It is a card that enables customers to carry funds easily and access the Visa ATM machine with a PIN. The cash is loaded with US dollars but can be withdrawn in local currency from any of Visa ATM machines worldwide. The bank has also partnered with VISA and Trevelex World Wide Money (Wildcard) to make the product accessible in all countries. (Accra Daily Mail, 2004)

### 4.5 PC Services

Some banks have started to offer PC banking services, mainly to corporate clients, to initiate a range of automated transactions from their own offices or homes. “The banks provide the customers with the proprietary software, which they use to access their bank accounts, sometimes via the World Wide Web (WWW). This is on a more limited scale though, as it has been targeted largely at corporate clients.” (Abor, 2004) Four banks currently offer PC banking

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\(^5\) Société Générale – Social Security Bank
services in Ghana – GCB, Ecobank, SCB, and Barclays. Stanchart with their Domestic Payment Service (DPS), allows subscribers to transfer payment and direct debit information in an electronic format from their computers to the bank.

4.6 Mobile

Currently, only Standard Chartered Bank provides active mobile banking services known as SMS Banking. This allows customers to do some banking enquires on their mobile phones. Customers do not need to go to their branch to do the following transactions: balance enquiry, transaction enquiry, cheque book request, statement request, and payment of utility bills.

SG-SSB Bank also launched a product called Sikatext. This is a smart banking service that enables customers’ access to their financial information by a text message via their Spacefon mobile phone any time in the day. With this product, customers can easily check their account balance. Although, the services this offered do not include payment services, the bank has indicated to include such service in future. (SG-SBB, undated)

4.7 Internet

Stanchart has started the first Internet Based On-line Banking Service in Ghana. SSB Bank Ghana is one of the three banks in Ghana to offer Internet banking services via the installation of the state-of-the-art software called Flexcube. Twelve (12) branches of the bank have already gone live on Flexcube. (Mishra, 2002) Currently, Internet payment is not well-developed in Ghana.

4.8 Telephone

Telephone banking is on the ascendancy in Ghana. “Barclays Bank (Gh.) launched its telephone banking services in August, 2002. SSB Bank also launched its “Sikatel” or SSB Call Centre telephone banking in 2002. The services available with this system are; to ascertaining credible information about the bank’s products, the customers’ complaints, bank statements and cheque book request and any other complaints and inquiry.” (Abor, 2004)
4.9 Electronic Purse

Standard Chartered Bank Ghana and Visa International lunched the first domestic Visa Horizon – a chip-based, pre-authorized card, offline payment card (COPAC). The chip is an electronic purse that enables funds to be loaded from their account and has offline capabilities. The card can be used to make purchases or withdraw cash.

GCB and ADB in collaboration with Mondex introduced the Mondex system into Ghana in 2003. The system is based on a smart card that can be “charged” with money from a bank account, effectively turning the card into an electronic purse. Other cards that can be regarded as e-purse are SSB’s “Sika Card”, Trust Bank’s “Auto Cash Card”, SCB’s “Money Link Card”, and Barclays Bank’s “Barclay Cash Card”.
5.0 Qualitative Analysis of Users Experiences with EPayment

To analyze the survey data obtained from the survey questionnaire, we employed descriptive statistics to ascertain the level of customer’s reaction to e-payment products. We analyzed the results of the survey questionnaire administered.

5.1 Survey Participants

Data were gathered from the questionnaire sent to customers, bank staffs, and corporate bodies. A total of 685 questionnaires were sent to bank employees, customers and corporate bodies. 5 questionnaires were sent to each of the 17 banks studied, while 500 and 100 questionnaires were also given to customers and corporate bodies respectively to solicit for their view. Of the 85 questionnaires sent to the banks, 54 responded representing approximately 63.5% response rate. Out of the 500 questionnaires given to bank customers to answer, 484 responded given a response rate 96.8%, and this was due to the presence of those who administered the questionnaires – making sure that customers have actually responded. All those who agreed to respond to the questionnaires were made to provide instant answers, and those questions that they found it difficult to understand were explained to them.

5.2 Customers’ Educational Level

**Table 1: Educational Level of Respondents**

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Below Middle/JSS</th>
<th>Middle or JSS</th>
<th>O/L, A/L or SSS</th>
<th>Under-Graduate</th>
<th>Post-Graduate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Respondent</td>
<td>16</td>
<td>83</td>
<td>321</td>
<td>56</td>
<td>8</td>
<td>484</td>
</tr>
<tr>
<td>Percentage</td>
<td>3.3</td>
<td>17.1</td>
<td>66.3</td>
<td>11.6</td>
<td>1.7</td>
<td>100</td>
</tr>
</tbody>
</table>

Most of the respondents were not willing to reveal their educational background, but after a thoughtful explanation to them about the importance of this to the survey, all of them agreed to provide this information. The analysis of educational level of those who responded to the questionnaire revealed the following trend: majority of those who answered the questionnaire...
falls within the O/L or A/L or SSS\textsuperscript{6}. Those with this level of education are 321 representing 66.3\% of the respondents. Those with postgraduate degrees constitute the least customers that answered the questionnaire (i.e., 1.7\%). A greater percentage of Ghanaians have a low level of education (i.e., SSS and below), but constitute a greater proportion of those that patronize banking services (86.7\%). Most of these are school dropouts and are engaged in trading activities.

5.3 Employment Levels of Customers

Table 2: Respondents Employed

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Below JSS</th>
<th>JSS</th>
<th>O/L, A/L or SSS</th>
<th>Under-Graduate</th>
<th>Post-Graduate</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>9</td>
<td>68</td>
<td>272</td>
<td>42</td>
<td>9</td>
<td>400</td>
<td>82.6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>7</td>
<td>15</td>
<td>55</td>
<td>7</td>
<td>0</td>
<td>84</td>
<td>17.4</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>83</td>
<td>327</td>
<td>49</td>
<td>9</td>
<td>484</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: Employed, include part-time and self-employed

For the respondent to the survey, 82.6\% (400) of the customers are employed, meaning that a high proportion of bank customers are employed as compared to those unemployed. Out of this figure, 272 fall within the SSS level. Customers with postgraduate certificates/degrees that answered the questionnaire were all employed. The study shows that most of bank customers have SSS certificates and form the largest bank customers in Ghana. Those employed as shown on the table include self-employed and those engaged in part-time employment.

The education levels appear to correlate with employment as shown above. Those with a higher education are more likely to be employed and as such patronize electronic payment mechanisms.

\textsuperscript{6} Junior Secondary School (JSS), Senior Secondary School (SSS), Ordinary Level (O/L), Advanced Level (A/L)
5.4 Personal Preferences

Table 3: Customers Personal Preference for E-Payment

<table>
<thead>
<tr>
<th>Reasons</th>
<th>No. of Customers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control and customer service</td>
<td>132</td>
<td>27.3</td>
</tr>
<tr>
<td>Budgeting and record-keeping</td>
<td>97</td>
<td>20.0</td>
</tr>
<tr>
<td>Incentives and low cost</td>
<td>124</td>
<td>25.6</td>
</tr>
<tr>
<td>Convenience</td>
<td>78</td>
<td>16.1</td>
</tr>
<tr>
<td>Privacy and security</td>
<td>53</td>
<td>11.0</td>
</tr>
</tbody>
</table>

Another factor influencing payment instrument choice pertains to customers’ personal preferences. Based on the survey questionnaires, five general consumer preferences were identified: (1) control and customer service; (2) budgeting and record keeping; (3) incentives and low cost; (4) convenience; and (5) privacy and security.

Most of the respondents to the questionnaire who have initiated payment using electronic means valued more than one preference, but it appeared that most were primarily driven by just one or two preferences across different payments they were making. For instance, 27.3% confirmed that their desire for e-payment includes the ability to review, initiate, stop, and record payments as well as customer service if problems arise. 25.6% indicated that using e-payment will minimize cost, while 16.1% felt that error resolution are convenient and are tailored to meet their needs. For privacy/security, 11.0% indicated that for e-payments’ ability to withhold information that may be detrimental if disclosed, they prefer making payments by electronic means.

5.5 Transaction-Specific Factors

Table 4: Amounts Transferred

<table>
<thead>
<tr>
<th>Amounts</th>
<th>€1-€100,000</th>
<th>€100,001-€500,000</th>
<th>€500,001-€1,000,000</th>
<th>&lt;€1,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Response</td>
<td>94</td>
<td>58</td>
<td>24</td>
<td>15</td>
</tr>
</tbody>
</table>

Transaction-specific is other factor that influences consumer decision-making. This relates to the specific nature of the payment being made, where it is being made, and how the how the consumer views their relationship with the merchant. Many customers indicated that since they
can sit in the comfort of their homes to effect payment, they prefer e-payment to the traditional payment methods. Since most of the amounts indicated to have been transferred by the respondents are of smaller values, there is the likelihood that they will use electronic means.

5.6 Ranking of Payment Methods by Customers

A series of questions were designed to examine the perception of bank customers about the different payment services. Customers were asked to rank the various means of payment available to them, and as expected, cash was overwhelming favourite. Maybe this was due to maturity of cash usage and the fact that other payment products are not well-developed in Ghana. The reasons given were that it is easy, carries no interest and payment are resolve immediately. Over 40.9% of the respondents ranked cash as their most preferred method of payment. Debit card was the next preferred method of payment (18.0%), followed by EFTPOS (13.8%) and credit cards (8.5%).

Most respondents were of the view that they are not used to the electronic payment methods, but majority indicated that they would like to shift into e-payment if the banks will introduce more of them with enough education. 18.0% indicated they prefer to use debit cards since it can be used to make purchases, at the same time to pay bills. 41 respondents indicated that they prefer credit cards, because that would allow them to make purchases even if they are not present at the point of sale.
5.7 Customers in Favour of Electronic Payment Products

Table 6: Customers in Favour of Electronic Payment Products

<table>
<thead>
<tr>
<th>Customer Type</th>
<th>SSS Education &amp; Above</th>
<th>Below SSS Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Customers</td>
<td>326</td>
<td>7</td>
</tr>
<tr>
<td>Percentage</td>
<td>69.7%</td>
<td>43.8%</td>
</tr>
</tbody>
</table>

Customers were asked to indicate whether they are in favour of a nation-wide introduction of e-payment products in the country. In all, 333 respondents answered in the affirmative, with the rest indicating that they disfavour its introduction. Specifically, 326 out of 468 (representing 69.7%) with senior secondary school certificates and above were more in favour of e-payment instruments while these with education below SSS were less in favour of e-payments (i.e., 7 out of 16 representing 43.8%).

5.8 Actual Usage of Electronic Payment Methods by Customers

Table 7: Use of Electronic Payments by Customers

<table>
<thead>
<tr>
<th>Customers Response</th>
<th>Once</th>
<th>Twice</th>
<th>Many Times</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Customers</td>
<td>61</td>
<td>78</td>
<td>52</td>
<td>191</td>
</tr>
<tr>
<td>Percentage</td>
<td>12.6</td>
<td>16.1</td>
<td>10.7</td>
<td>39.4</td>
</tr>
</tbody>
</table>

It was surprising to find out that over 60.6% responded indicated that they have not used any of the electronic payment mechanisms to make payment. Only 39.4% confirmed that they have actually used one or more of the electronic channels for payment. This shows that the number of customers who have embraced the use of electronic payment is low in Ghana.

5.9 Problems Encountered in making payment

Table 8: Payment and Settlement Problems

<table>
<thead>
<tr>
<th>TYPE OF PROBLEM</th>
<th>NO. OF RESPONDENTS</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Queues</td>
<td>79</td>
<td>16.3</td>
</tr>
<tr>
<td>Bad Attitude of Tellers</td>
<td>42</td>
<td>8.7</td>
</tr>
<tr>
<td>Time Wasting</td>
<td>68</td>
<td>14.1</td>
</tr>
<tr>
<td>Long Distance</td>
<td>63</td>
<td>13.0</td>
</tr>
<tr>
<td>Few Bank Branches</td>
<td>38</td>
<td>7.9</td>
</tr>
</tbody>
</table>
Customers were asked to enumerate some of the problems confronting them in bills payment, payment for goods and services, and settlement of debt. Customers’ response to this part of the survey was very revealing. Problems range from bad nature of bank notes to long queues at bank and utility payment premises.

Of the 484 response received from bank customers, majority cited long queues and time wasting at bank premises and at utility collection point as a major problem that needs a critically look. The most common problems that the respondents cited are long queues and time wasting at bank premises and utility collection points. Out of the 484 customers surveyed, 79 (16.3%) and 68 (14.1%) cited long queues and time wasting at bank premises respectively as the major problems confronting them.

5.9.1 Long Queues and Time waiting

Even though the introduction of computers and ATMs has improved waiting time at the banks, many customers still complained about the long waiting time. 68 of the respondents indicated that they had to wait about 30 minutes to 2 hours to get served at the banks. Most of the respondents indicated that there were no proper queuing systems at many of the banks. The majority of the respondents indicated that the absence of queuing system has at times led to confusion about the order of customers to serve. Some customers also bypass the queue and receive services from the tellers.

5.9.2 Bad Attitudes of Bank Tellers

Some of the respondents felt that the behaviours of some bank tellers leave much to be desire. 42 of the respondents representing 8.7% indicated that some of the bank tellers’ behaviour does not
much with the overall goals of the banks, and that this needs to be checked. They cited this as the main reason why they prefer other mode of payment such as e-payments to avoid encounters with bank tellers. Some of the reasons they gave are that some of the bank tellers are slow, unduly delay customers, always attend to other social or private matters, and sometimes allows other customers to bypass the queue to be served.

5.9.3 Few Bank Branches

Others were of the view that since the banks in Ghana are not connected together and with fewer branches, it makes cash withdrawals cumbersome since customers have to travel long distance to the branch where they have their accounts. 38 (7.9%) of the respondents shared this sentiment and most of them agreed to the assertion that this situation sometimes discourage them from visiting the banks to withdraw money for onward payment for goods and services.

5.9.4 Armed Robbery Attacks

6.8% of the respondents cited armed robbery attacks as the main reason why they prefer e-payment to cash or cheque. Recent incidents of armed robbery attacks on customers who withdraw huge sums of money from the banks have heightened customers’ fears about withdrawing large sums of money from the banks. It is uncommon in Ghana to find a whole business organization withdrawing physical cash to pay workers wage manually. Some of them end up being attacked on their way from the banks resulting in huge losses to those organizations.

5.9.5 Use of Counterfeit Bank Notes

The use of banks notes for most business transactions has brought about the notorious activities of people who circulate counterfeit money. 4.3% of the respondents were of the view that, with a good business strategies, if more e-payment products are introduce into the payment system, it will help put a check to the activities of these people. In Ghana, counterfeit bank notes make up only a tiny percentage of the total number of genuine notes in circulation. Nevertheless, every effort should be made to combat counterfeiting to limit its impact on Ghanaian businesses and its potential to diminish public confidence in Ghana's money.
5.9.6 Bulky Nature of Bank Notes

The persistent inflation in Ghana has resulted in items being prized in higher value terms. In Ghana, it is uncommon to find someone with about two hundred million cedis in a sack meant to pay for, example, a motor vehicle. Such situation normally exposes carriers to armed robbers. The country currently uses twenty thousand (¢20,000) notes denomination. 8.7% of the respondent indicated that due to the bulky nature of bank notes, they would prefer using a card or any other e-payment mode.

5.9.7 Cheques Dishonoured

Most respondent (5.2%) were of the view that they will not like to issue or accept cheques. This group indicated that the bank charges for cheques issued are prohibitive while they cited dishonoured or bounced cheques as the other reason why they prefer cash or e-payment. The increasing incidence of dishonoured cheques due to insufficient funds has resulted in many customers refusing them.

5.9.8 Banking Hours

In terms of banking hours, 37 (7.6%) indicated that they found the banking hours very inconvenient. Of those who expressed dissatisfaction with the banking hours, over 68% indicated their preferences for longer hours from 8:30 a.m. - 4:00 p.m. Furthermore, 32% indicated their preference for bank opening hours on Saturdays, as in other developed countries.

5.9.9 Few Payment Methods

One other problem identify is the narrow scope of banking services provided. 36 of the respondent indicated that the major constraint in payment for goods and services, and the settlement of bills is the availability of just a few payment mechanisms. This group cited this reason as the major factor discouraging them from making payments.
5.10 Bank employees and officials

The interviews with bank employees and officials revealed that majority of the banks faces problems ranging from technical to infrastructure. Some of the constraints are: lack of technical expertise, lack of capital, lack of cooperation by different banks, lack of uniform accounting systems in the banks examined, and lack of communication with the headquarters in Accra due to telephone problems.

Some of the bank employees were of the view that electronic payment instruments when made available, promoted and accepted by consumers will go a long way if not to eliminate the payment problems, will reduce it to the minimum. Some cited the heavily use of electronic payment instruments in the Scandinavian countries and how this has helped to enhance efficient retail payment systems. Others also felt that the, for example, the use of EFTPOS terminals are suitable for low value payments and will bring about efficiency in the numerous consumer daily payments.

Almost all the respondents were reluctant to provide any information about the status of their wealth or income levels. We wanted to use this information to ascertain how wealth influence or affect payment choice of respondents. The number of responses for income is insignificant for our analysis, so we did not include this in the analysis but it is worth mentioning.
6.0 DEVELOPMENT OF ELECTRONIC PAYMENTS IN SOME SELECTED COUNTRIES

In this section, we discuss how some countries are bracing themselves for the emerging electronic payments and make some international comparisons of its use. The chapter describes some market trends in electronic payments in some few selected countries and it discusses some of their implications on the payment for utilities, goods and services. The main current areas of innovation (described in chapter 2) involve both existing and new delivery channels for payment services. Automated teller machines (ATMs), for example, are extending their scope to provide a wider range of services.

6.1 Trend in Sweden and other selected countries

We were unable to obtain pertinent statistics concerning the actual number and value of electronic payments usage in Ghana. Cash transactions account for a greater portion of all transactions in developing countries since the non-cash side of their payment systems is considerably smaller. (Humphrey et al, 1996) In Ghana, the limited data that exist indicate that cash transactions represent by far the largest volume of daily payment transactions. (Acquah, 2001) The use of electronic payment is at a low level in Ghana as the majority still prefers cash payments, and habits seem to change very slowly.

A study in ten European countries shows that cash transactions are declining steadily. (Böhle et al, 1999) Recently, there has been an increasing use of debit and credit cards in the countries covered in the study. There have been enormous increases in the number of ATMs and other electronic devices enabling direct funds transfers at point of sale. A greater number of retail payments are done on the Internet using credit cards. The study showed that there is lack of a uniform standard mechanism for micro payment (small payment) among these countries.

In Sweden, the same study shows that the payment culture reflects closely to that of the average of the first 15 EU countries. 75% of non-cash payments are made through electronic means. Although online and EFTPOS payments are increasing, but cash still plays an important role in
the Swedish micro payment system. The study shows that about 80% of retail payments are made use of cash. ATMs and cash dispensers are generally low in comparison with the average of the other European countries. EFTPOS terminals are widely deployed in the country and most retail payments are routed through it, although the value is small.

The number of direct credit transaction is increasing slowly but account for a greater amount of money in terms of value transferred. The number of direct debit transaction is increasing at a fast rate but its total value is decreasing. Three banks backed a single smart card (electronic purse) called “Cash” in combination with other cards such as Visa, Maestro, etc. (Humphrey et al, 1996)

Currently, in Sweden, payment through the Internet is possible once one have an account with a bank. At first, this was restricted to the domestic market, but recent changes have made it possible to make international payment. The use of paper-based payments such as giro forms and cheques payments has been giving way to electronic payments of various types. The Swedish ATM network is highly developed, with more than 2,800 ATMs nation-wide, from which more than 300 million withdrawals are made each year. The system is designed in that the customers of any other bank can use any bank’s ATMs. (Swedish Bankers´ Association, 2005)

6.2 Historical changes in Payment use in other Countries

Japan has been known to have a high cash holding, low non-cash use, and a high percent of electronic payments. High cash use for point-of-sale transactions while non-cash payments are largely electronic and almost entirely for bill payment and employee payroll disbursements. (Humphrey et al, 1997)

Norway, in 1996 has about 60% of non-cash payments in an electronic form compared to 1987 figure of 90% non-cash payments. Robinson and Flatraaker (1995) study of Norwegian postal and commercial banks found out that the total of payor bank and payee bank costs of an electronic bill payment through a giro was $0.49 while its paper-based substitute averaged $1.34. (Humphrey et al, 1997)
Finland use of electronic payment services has been increasing during the past few years. It has been suggested that the effect of price on banking services have obviously had an important influence on the developments in bill payments. In Finland, the value of electronic payments has been increasing very rapidly surpassing that of cash. Most card payments combine many features in the same card such that some cards can function as debit card, credit card and ATM card. (Humphrey et al, 1997)

Credit cards can be used in many retail chains, regardless of issuer. Debit cards can be used for cash withdrawals and credit transfers at ATMs, as well as for payments at EFTPOS terminals throughout Finland, Sweden, Norway, Denmark, and other European countries. In Ghana, it can be used in few places such as hotel, supermarkets, airports, etc. (Humphrey et al, 1997)

Finally, the US has low cash holdings per person, high non-cash use, and a low percent of electronic payments. But this has changed recently. Studies in 2004 by the Federal Reserve confirm that electronic payment transactions in the United States have surpassed cheque payments for the first time. Australia seems to have a relatively high take-up rate of new technologies – viz. smart cards experiments, ATM and EFTPOS history, etc. (Humphrey et al, 1997)

In Finland, Sweden and Denmark, customers can use several different payment methods for transacting business. The mobile phone sector in Finland is developing rapidly. Some purchases can be paid for via a mobile phone with such costs included in the customer’s monthly mobile phone bill. Also tickets for tram, underground Finland line ferry traveling in Helsinki can be paid for by sending a text message to a service number. The customer gets his ticket as a reply text message after ca 30 seconds and can show it to a controller if necessary. These purchases are later included on the mobile phone bill. (The Banker, 2004)

### 6.3 How E-Payment has helped to solve Retail Payment Problems

The introduction and use of electronic payment instruments holds the promise of broad benefit to both business and consumers in the form of reduced costs, greater convenience and more secure,
reliable means of payment and settlement for a potentially vast range of goods and services offered worldwide over the internet or other electronic networks. (Humphrey et al, 2001)

One such benefit is that electronic payments enable bank customers to handle their daily financial transactions without having to visit their local bank branch. E-payment products could save merchants time and expense in handling cash.

The resource cost of a nation’s payment system can account for 3 percent of its GDP (Humphrey, Pulley, and Vesala 2000). Since most electronic payments cost only around one-third to one-half as much as paper-based non-cash payment, it is clear that the social cost of a payment system could be considerably reduced if it is shifted to electronics. Automating could increase operational efficiency. Automating and streamlining electronic payments made from self-serve channels such as ATMs, branch office terminals, and point-of-sale (POS) systems and also can reduce paper-based errors and costs.

New payment mechanisms have enhanced consumer convenience. Bill-payment over the Internet is growing in popularity among people who have adopted other new technologies, such as computer and ACH credit (debit deposit). New payment arrangements, such as the government’s Electronic Benefit Transfer system (EBT) or payroll cards, enable people without bank accounts to use ATM services or POS debit services. For consumer-to-business point-of-sale and bill payments, electronic payments will reduce the need for business working capital associated with the delay in processing paper-based non-cash payments.

6.4 Positive Benefits for using E-Payment

The use of e-payments has had some benefits for consumers in a form of choice, convenience, cost reduction, control, and trust, some of these cannot be provided by the conventional payment methods. For the economy, it promotes economic growth through fundamental benefits such as: increasing levels of security and consumer empowerment; greater economic transparency; increasing economic stimulation; widened participation in the banking system; enhancing transactional efficiency; and expanding payment channels.
An empirical evidence to buttress the above points was provided by Visa Canada Association. A leading economic and financial consulting firm, Global Insight, was contracted by this association to measure the impact of electronic payments on the Canadian economy. The result of this research revealed that electronic payments provide transactional efficiency to consumers, merchants, banks, and the economy. Electronic payments have contributed $C 107 billion to the Canadian economy since 1983 and represents nearly 25% of the $C 437 billion cumulative growth in the Canadian economy over the same period. Over the same two decades, $C 60 billion of the increase in Personal Consumption Expenditures (PCE) was directly attributable to electronic payments, with credit cards holding a commanding share of this growth ($C 49.4 billion) over debit cards ($C 10.4 billion). (Visa Canada, 2004)

The benefits derived from using e-payment cannot be over-emphasized. Its ability to control payment for goods and services over time allows buyers to pay now, pay later, or prepay. For consumers, it saves their time and brings convenience; easier than cash because no change or exact amount of cash is required; schedule payments give more control and flexibility over payment activities and improve efficiency; the integrated system supports easy overview of payment activities over time, among other benefits.
7.0 BARRIERS TO RETAIL PAYMENT SYSTEMS IN GHANA

It has long been clear that electronic payment products offer a series of benefits to all parties—Governments, consumers, merchants, and financial institutions. For about two decades now, business journalists and economists have heralded the coming of a paperless society in which electronic payments will replace the use of cash and paper cheques in retail transactions. (Experts on Electronic Commerce, undated)

Although tremendous improvements in telecommunications and computing have facilitated the development of safe, electronic retail payments, neither the number nor volume of paper-based transactions has dropped appreciably in most economies worldwide. Ghana is of no exception. While prospects for electronic payments in Africa and in particular Ghana continue to improve, problems persist.

There are a number of impediments of different dignity for the use of electronic payment products. This chapter seeks to highlight on the various barriers to the efficient and effective use of the electronic payment products in Ghana.

7.1 High Cost of Access

Before users can engage in electronic retail payments they must invest in devices that give access, and then purchase that access to the networks that constitute the Internet. In an attempt to connect to the Internet and other networks, users in Ghana need to overcome potential barriers such as high cost of Internet access, lack of local loop infrastructure and high cost of international interconnection.

Cost of research and development is militating against electronic retail payments in Ghana. It has therefore been identified that merchants are not willing to invest in terminals, thereby denying potential customers access to the use of electronic retail payment systems. The central problem confronting the developers of this electronic payment system according to consumers and retailers is whether, given the small size of the market, the investment will be recoup within the
foreseeable time span. This problem looks more pressing because the market is characterized by a great diversity of players.

Unlike in most part of the developed countries, it is only the customers of The Trust Bank Ghana Ltd, Cal Merchant Bank Ltd, and Ecobank Ghana Ltd banks who have access to these terminals. Besides, it has also been discovered that most of the customers of the three banks are interested in shopping at other shops which do not have the terminals and that comparatively offer better prices.

7.2 Confidence and Security

There is lack of adequate security with the use certain electronic payment devices like card payments. The lack of security when processing transactions over the Internet is posing a great threat to its adoption.

Internet fraud is on ascendancy in Accra, the national capital. The youth through dubious means lay hands on credit card numbers of other people and ultimately using them to make bulk purchases from online marketing sites like e-bay and others. With credit and debit cards, consumers cannot detect fraud until their statement of accounts arrives but credit card companies and banks do not insure against fraudulent use of their cards. Hence consumers bear the full responsibility of any debts fraudulently accrued. (Ghanaweb, 2004)

Security, confidence, reliability and efficiency are fundamental features of any electronic payment solution. Security makes consumers more inclined to trust and to use a newly developed electronic payment solution. The OECD (1997) stated that in developed countries, “it was only after the credit card industry assured users that their exposure to criminal misuse of cards was limited that confidence in that form of payment developed.” Since electronic retail payments relies heavily on credit cards for identification and payment, the credit card companies refusal to insure its customers against fraud will inhibit its adoption.
More so, the lack of rapid development of the payment solutions is the security measures surrounding deposit transfer systems. There is lack of adequate implementation and monitoring of payment systems security. From the consumers’ and retailers’ perspective, the crucial criterion for the success or failure of a payment product is confidence. However, doubts as to the applicability of existing laws and regulations increase the perceived risk of using electronic retail payment products.

**7.3 Telecommunication Infrastructure**

The telecommunication infrastructure in Ghana is underdeveloped. But for electronic retail payments to thrive, this infrastructure is a primary requirement. The telecommunication services are generally of poor quality, which impedes against the development of retail payment technologies. The speed and quality of line is unsatisfactory, especially outside metropolitan areas.

**7.4 Lack of Knowledge and Skill**

Both consumers and business enterprises have limited knowledge of what services exist, how they operate and what benefits to be derived. Due to high level of illiteracy, most of the people do not recognize the economic importance of electronic retail payments. Most Ghanaians especially the aged, lack the skills and knowledge required to ensure efficient and effective use of the system.

Our investigation showed that only a few number of the adult population have computer knowledge and skills. The low level of knowledge in the payment devices and how each of them works has led to low patronage of the existing retail payment products. Information on practical issues with regard to handling, confidence-related issues on security, integrity and consumer law issues concerning internal and external trade are necessary to increase patronage.
7.5 Acceptance and Network Externalities

For electronic payments to be a success there should be user acceptance. Any medium of exchange should be generally accepted. It is identified that, consumers seem to have strong preferences for paper payment vehicles, partly because of the high degree of familiarity. Even the few electronic stores prefer to a large extent payments with cash on delivery. More restricted is the possibility of payment with modern payment means, such as prepaid cards. This fact demonstrates the general mistrust and lack of faith that characterizes the Ghanaian consumer public with regard to electronic retail payments. Furthermore, this work reveals the hesitation of the financial intermediaries and other companies in Ghana to invest in the creation of innovative products that will be based on modern payment means. This is motivated by the fact that their acceptance is expected to be low and will not justify the increased required investment.

Besides, consumers are reluctant in replacing cash and cheques with electronic innovations like the stored value cards because of low network externalities. Network externalities occur when the benefits a consumer expects to receive from a good or service depends on the number of consumers already using the commodity. This implies that, a consumer’s benefits from having a card depend on how many businesses will accept it in payment for goods and services. However merchants will refuse to invest in the systems needed to accept the cards until they are assured of enough customer demand to justify the expense.

This work reveals that this interdependency of demand will remain an obstacle until the innovation achieves the critical mass, either in its own time or with the help of policy makers. The interdependency of demand means that the market for the network good must attain a minimum size in order to achieve a sustainable equilibrium. Economides & Himmelberg (1995) refer to this minimum size as the network’s “Critical Mass”.

7.6 The Special Challenge of the Unbanked

One of the greatest challenges to electronic retail payments in Ghana is the ability to encourage the millions of currently unbanked persons to be part of the mainstream financial system.
According to the Ghanaian Chronicle (2004), only 5% of Ghana’s 20 million populations had bank accounts. However, his troubling paradox was the low interest payments on customers’ savings vis-à-vis their increased lending rates.

This work reveals that the predominant reason for low patronage of banking products is due to lack of sufficient income to be able to afford the costs of conventional accounts. More so, most of the unbanked in Ghana are not payment recipients like their counterparts in the developed countries, hence their marginal benefit for holding the account is lower than the marginal cost. Besides, most of the banks have an interest penalty for their customers who withdraw below the banks minimum deposit requirements. All the above problems have led to the underdevelopment of the banking industry in Ghana.

### 7.7 Uncoordinated Banking System

The current banking system in Ghana where each and every bank is doing its own thing is not the best for the country. With an uncoordinated and unconcentrated banking system, it has been more difficult for Ghanaian banks to cooperate and switch to electronic than in other developed countries such as Canada, Finland, France, and Australia. The provision of banking infrastructure for electronic payment system cannot be left to only one or two banks. The cost involved is high, but with a consented effort from all the major banks, it will be within their reach.

### 7.8 Operational Disruptions

There are risks such as operational disruption that affect the stability of electronic payment system. Numerous examples exists that is caused by failure of operations – for instance, the computer problem that caused the Bank of New York a whooping $22 billion overdraft in 1985; a roof collapse after a heavy snow, resulting in a shutdown of an Electronic Data System facility for processing ATM transactions, affecting more than 5000 ATMs in the US in 1993; the disruption of the operations of the Internet as a result of the “worm” virus in 1987; and a host of other disruptions. (McAndrews, 1996) Due to the network nature of electronic payment
instruments, the disruption or interruption of a facility supporting the system can caused a breakdown of the whole payment system. Such incidents may serve to discourage consumers.

It could therefore not be overemphasized that, the challenge of the unbanked is a daunting one, to which the banking sector has not devoted much attention and resources.

### 7.9 Attitude to New Products

The problem of reaching a critical mass is explained by the reluctance of people to use new schemes until a sufficient relative number of their associates use them. It is difficult to convince customers to switch providers especially if they are not particularly dissatisfied with the systems they have been using.
8.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

8.1 Conclusions and areas for further research

This study has covered some issues associated with payment transactions, instruments, and systems prevailing in Ghana. It contains a description and analysis of various electronic payment instruments from the viewpoint of end-users. Furthermore, it looked into the trend and the use of electronic payment in some selected countries. Finally, it included a description of innovations in electronic retail payments in Ghana.

As elaborated earlier in this study, the retail payment systems in Ghana during the past few years have undergone progressive technological developments, but have also remained highly paper-based and inefficient. The outcome of the study shows that cash transactions continue to play a significant role in almost all countries and in particular Ghana. Even the developed countries are making every effort to ensure a cashless society and Ghana cannot wait to embrace this concept.

As consumers seek out new ways to do business, the market must provide innovative electronic payment solutions that can eliminate or reduce some of the problems they faced. Banks will have to determine what kind of electronic payments services best fit their customers’ needs, and which could lead to smooth operating payment systems. There are also numerous problems in processing cash and cheques that electronic payments can eliminate. Both cash and cheques are labor-intensive – must be physically transported and counted, and risk loss or theft throughout their processing.

We can conclude that consumers have a propensity to show rational payment preferences and behaviours based on the analysis of the consumers’ survey. It was observed that consumers’ behaviours are consistent with their preferences, which vary but may include convenience, incentives, control, privacy, security, and personal involvement. The study showed that, one of the significant impacts pertaining to payment instrument choice on consumer decision-making is consumers’ financial positions and the nature of specific transactions.
We see improve adoption of electronic payment products. Its adoption is growing steadily over the past few years. We are convinced that many people are going to flock to electronic payments as it becomes easier to use. Because of its ease of use and familiarity, it has made it easy for consumers to focus on electronic bill payment in developed countries. If electronic payments can carry the broader features similar to those of cheques and cash, and that could solve their problems, consumers will migrate towards electronic payments at an increasing rate.

The banks are doing well in promoting electronic payments products but majority of Ghanaians still pay their bills by paper cheques and cash. Therefore, there is the need to create more awareness to entice the unbanked people into the banking system. The result demonstrate low user acceptance of existing payment products – a pivotal factor in determining the success or failure of any payment system.

An area that is worth for further research is, giving the current low level of savings and account holders, how can the banks be motivated to introduce more electronic payment mechanisms as well as motivating the people to patronizing the products? Another area that needs to be look into is how the new electronic payment system can reach the under-served populations, like low income or ethnic communities as many of them may not afford several thousand of money to buy computers to link the new systems?

### 8.2 Recommendation

The use of cash for frequent transactions apart from the problems enumerated in this study, it is risky, costly and inefficient for consumers. The need therefore to migrate from the use of paper to electronic payment instruments cannot be overemphasized.

At the moment, most payment cards in Ghana utilize a magnetic stripe and need an on-line connection to the issuing bank for the approval of transactions. This means that if the bank is off-line, the transaction will be denied. But in emerging markets such as Ghana, the majority of merchants are off-line, which makes magnetic stripe cards almost useless. Considering the low level of technological infrastructure in Ghana, chip cards are best for the country because it has
been successful in environments where the communication infrastructure is lacking. Chip-based payment products can bring payment to people who lack the infrastructure required for conventional magnetic stripe payments. Off-line technology is likely to succeed for some time in Ghana, because it is cheaper in an environment where there is without any form of telecommunications.

Government needs to ensure that the cost of telecommunications, hardware and software are made cheap, which will involve examining existing taxes and import duties. New technology and changes in the banking laws can produce change. Therefore, there is the need for the government to remove barriers to innovation, including regulatory barriers to pave way for rapid development of the electronic payment systems in Ghana.

The emergence of electronic payment systems raises a whole range of both legal and regulatory issues that needs to be taking a look at. An effective national low value electronic payment system will certainly remove what is currently a major obstacle to the expansion of general business activities. The emergence of an electronic payment system which is easy to use, cheap to process, and boost trade, is likely to have a range of only partly anticipated side effects. For example, it could result in the creation one currency for the Economic community of West African States (ECOWAS) which the countries are yearning for.

There is the need for banks to educate consumers about all of their payment system options and the pro and cons of each. Consumers will need to be informed about the potential liability for the use of new types of electronic payment, so they can understand how it differs from cash. Although, Ghana can learn valuable lessons from the experiences of other countries, the country must develop its own payment system. Simply importing another country’s electronic payment system without adjusting for geography, infrastructure, banking and legal structures, business practices, culture, and needs could lead to a suboptimal system.
## Appendix

### Commercial Banks in Ghana

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<th>NAME OF BANK</th>
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<td>Agricultural Development Bank</td>
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<td>Amalgamated Bank Ltd</td>
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<td>Barclays Bank of Ghana Ltd</td>
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<td>Cal Merchant Bank Ltd</td>
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<td>Ecobank Ghana Ltd</td>
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<td>First Atlantic Merchant Bank Ltd</td>
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<td>Ghana Commercial Bank</td>
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<td>Home Finance Company Bank</td>
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<td>Merchant Bank Ltd</td>
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<td>Metropolitan &amp; Allied Bank (Gh)</td>
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<td>National Investment Bank Ltd</td>
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<td>Prudential Bank Ltd</td>
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<td>Society General SSB Bank Ltd</td>
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<tr>
<td>Stanbic Bank Ghana Ltd</td>
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<td>Standard Chartered Bank Gh. Ltd</td>
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<td>The Trust Bank Ltd</td>
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<td>Unibank (Gh) Ltd</td>
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</table>
| Others

7 There are some new banks established in Ghana recently but we were unable to get further information on their operations, so we excluded those banks from our study.
References


24. Lafferty, M (undated) "Innovative Success in the Retail Financial Market", Lafferty Publications Ltd/PA Consulting Group, Sydney, Australia, pp.136-137. This publication outlines the Nottingham Building Society's "Homelink" home banking system.


61


**Internet Sources**


http://www.findarticles.com/p/articles/mi_m0EIN/is_2000_July_14/ai_63414827 (2005-01-30)


25. Acquah, P. A. (2001). The payments system and monetary policy (online), available: 

26. Rudl, C (undated). Payment Options for Online Shoppers: Other Online Payment Options (online), available: http://www.entrepreneur.com/article/0,4621,305676-2,00.html (04-12-14)

27. Sarpong, S. (2003). Banking system fails the test. (online), available:
   http://africa.peacelink.org/newsfromafrica/articles/art_781.html (04-12-15)

28. SG-SSB (undated). Sikitext (online), available:

29. Smart Card Basics (2004). Smart card overview (online), available:
   http://www.smartcardbasics.com/overview.html (2005-02-02)


31. The Banker (2004). Will mobile get moving? (online), available:


33. Visa Canada (2004). Electronic Payments Drive One-Quarter of Canada's Economic Growth, Visa Sponsored Study Shows (online), available: