

# The Effects of Electronic Banking on Financial Services in Ghana

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## Abstract

Electronic banking has redefined the way banking is conducted across the globe and Ghana was not left out. Electronic banking has created a financial supermarket where many different financial services like insurance, investment, loans and current and savings accounts could be provided. Over the last three decades banks have designed and rolled out many different electronic banking products and services in Ghana. In this study an attempt is made to examine the effects of electronic banking products and services on financial services delivery in Ghana. The study was conducted using the case study approach. Data was collected from the administration of open ended questionnaires to customers and staff of banks in Ghana. Additional data was also collected through interviews conducted with customers and staff of case study institutions. A purposive and simple sampling technique was used to select the case study banks, customers and staff who participated in the study. Results of the study revealed that electronic banking has successfully transformed banking in Ghana. Banks now provide a one stop-shop for various financial services thereby creating what can be termed as financial shopping mall. Electronic banking has made banking easier and convenient. Customers can now transact banking business from the comfort of their homes and offices. Other benefits of electronic banking include; increased customer base, reduced cost in accessing and using the banking services, increased comfort and time saving-transactions can be made 24-hours a day, without requiring the physical interaction with the bank, quick and continuous access to information. Customers have easier access to information as they can check their accounts at the click of a button. Despite these benefits electronic banking also creates its own problems including; additional cost to acquire computer, internet connectivity and absence of human touch,

**Keywords:** Electronic-business, electronic commerce, electronic banking, and electronic banking products and services

## 1. Introduction

The advancement in technology and globalization has changed the way banking service is delivered across the world. Customers taste and preferences have also changed in response to new trends in technology. Banking customers especially have become more sophisticated and demand quality, speed and variety of services and products offered by banks. In order to meet the different tastes of customers and to achieve competitive advantage banks have over the years designed and offered different technology driven products and services for the market. These are mostly referred to as electronic banking products and services. They include Automated Teller Machines (ATMs), Telephone banking, Internet banking, Online Transfer of Funds, Electronic Bank Statement, Bill payment and Mobile banking. In most developed countries there have been many attempts to assess how these products and services have affected banking services in those countries. However in Ghana available literature to the reach of the researchers shows that there are few research particularly aimed at assessing the effects of electronic banking on financial services delivery in Ghana. This research therefore is undertaken to examine the electronic products and services offered in Ghana and assess their effects on financial services delivery in Ghana.

## 2. Statement of the Problem

Banking services in Ghana had always been offered through the traditional 'brick and mortar' branch system. Customers who required banking services have had to leave everything and travel to their branches to be able to transact banking business. This put banking services out of reach of many people across the country. The emergence of electronic banking has meant that many banking products and services can be accessed via the internet. Thus electronic banking has enabled many products and services to be offered to customers who do not have to travel to the branch before accessing banking service. Banking services can thus be accessed in the comfort of the customer's home or office at his or her convenience.

E-banking has made banking more competitive. Bank customers are more discerning, sophisticated and demanding. In order to meet customers' needs and expectations, banks have invested heavily in IT Infrastructure in order to offer a wide range of products and services including ATMs, Telephone banking, Internet banking, Mobile banking etc.

Banks have designed and rolled out many different electronic banking products in Ghana. Many view electronic banking as providing variety to customers. With the implementation of electronic banking in the country for over thirty years, the researchers believe it is time to assess how these products and services have affected banking service delivery in the country. This study is undertaken to examine the various electronic

banking products and services offered and assess their effects on banking operations in Ghana.

### 3. Objectives of the study

This study is intended to discuss and exchange ideas on the effects of electronic banking on banking services in Ghana. The study is designed to achieve the following objectives:

1. Identify the products and services that are delivered through electronic banking in Ghana
2. Assess the effects of electronic banking on banking services in Ghana
3. Evaluate the prospects of electronic banking in Ghana

### 4. Research questions

The study is conducted to provide answers to the following questions:

1. Which products and services are offered electronically in Ghana?
2. What has been the effect of electronic banking on banking service delivery in Ghana?
3. What are the prospects of electronic banking in Ghana?

### 5. Significance of the Study

It is expected that the results from the study will enable banks and policy makers to be aware of electronic banking products and services which are offered to customers. It will also enable the banks to be able to identify the factors that influence their decision making. The results from the study will help banks to determine how electronic banking has affected banking operations in Ghana. This will guide bankers in designing and implementing appropriate strategies which will enable them realize the full benefit of electronic banking in Ghana.

### 6. Scope and Limitation

The focus of this study is on electronic banking in Ghana. Due to lack of time this study was limited to Ecobank Ghana, Fidelity Bank, Access Bank, and Zenith bank. The branches of the case study banks in Tarkwa were used for the study. It will examine the nature of electronic banking at these banks and assess how it has affected service delivery and the performance of the bank.

### 7. Methodology

The study used both primary and secondary data for the study. Primary data was collected through interviews and questionnaires administered to customers and bank officials. Secondary data was collected from related literature, publications and reports from banks.

Customers were randomly selected from the case study banks. 205 customers and 45 staff of the banks provided responses to questionnaires and interviews administered by the researchers. Customers who had visited the banking halls and had electronic banking products were selected for the study. Structured questionnaires were administered on the spot at the banking hall over a period of four weeks. Descriptive analysis was used to analyse the responses received from respondents.

### 8. Literature Review

Electronic Business (E-Business) is the use of devices and platforms to conduct a company's business. According to Rana Tassabehji (2003), electronic business is the transformation of key business processes through the use of internet technologies. According to Windrum and Berranger (2002), E-Business is the integration of the internet and related ICTs into the business organization. Schneider (2001) also defines e-business as business activities conducted using electronic data transmission technologies such as those used in the internet and the World Wide Web.

Electronic commerce refers generally to all forms of transaction relating to commercial activities including both organizations and individuals that are based upon the processing and transmission of digitized data including text, sound and visual images. There is a thin line between electronic business and electronic commerce. Different terms are used to illustrate different perspectives and emphases of different people in different organizations and business sectors. According to Van Hoeck (2001), "E-Business is widely understood as business conducted through the internet, not only including buying and selling products, but further extended for also serving customers and collaboration with business partners".

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

It can also be said to be the automated delivery of new and traditional banking products and services directly to customers through electronic and interactive communication channels. The definition of electronic

banking varies amongst researchers partially because electronic banking refers to several types of services through which bank customers can request information and carry out most retail services using computer, television or mobile phone, Daniel, (1999); Sathye, (1999). Salehi and Zhila, (2008), describe electronic banking as an electronic connection between bank and customer in order to prepare, manage and control financial transactions.

Electronic banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network. While some literature restricts the use of the term to internet banking (Daniel, 1999), elsewhere the term is limited to retail banking (Aladwani, 2001) or both retail and corporate banking (Simpson, 2002). The most common definition for electronic banking, and the one used in this study is the one given by the Basel Committee Report on Banking Supervision (1998), " Electronic banking refers to the provision of retail and small value banking products and services through electronic channels. Such products and services can include deposit-taking, lending account, account management, the provision of financial advice, electronic bill payment, and the provision of other electronic payment products and services such as electronic money".

### **9. Electronic Banking Application in Different Economies**

Different countries offer different internet banking products. The choice of products and services depends to a very large extent on internet accessibility, penetration and the level of economic development; the level of responsiveness of the prevailing regulatory authority to the economic environment and finally the level of financial sophistication in the country.

Research relating to E-banking has been conducted in a multiplicity of contexts. Extensive research has been carried out in Europe (Daniel, 1999, Bradley and Stewart, 2003). Other research works have also been undertaken in Australia and Asia (Sathye, 1999; Shih and Fang, 2004; Gurau, 2002 etc.)

The picture of electronic banking in the USA is one of a wide variety of services used by a large number of consumers. It is reported that approximately 91 percent of US households have a bank accounts and, of these, 93 percent have one or more electronic bank account. A total of 32 million Americans view at least one bill each month over the internet, (EFT Data Book, 2003). Projections for the future of PC banking in the US vary considerably. Some E- Banking services are still in their infancy while others are more mature, and banks are making adjustments in service to meet customer needs. The American Banker (2000) reported that one third of customers who had signed up for e-banking had stopped using it due to unsatisfactory customer service or complexity of using the service.

Finland is a world leader in electronic banking, and over 39.8 percent of all retail banking transactions was made over the internet in August 2000, (Minna Mattila, Heikki Karjaluo and Tapio Pentto, 2003). Internet banking is the third popular mode of payment among mature customers in Finland. During the past years online banking has been rapidly accepted and currently stands at 55 percent of the private banking customers in Finland (The Finnish Bankers Association, 2003; cf. Nordea Oyi, 2003). Europe has been and still is the leader in online banking technology usage across the world (Schneider, 2001).

A study on internet users conducted by Internet and Mobile Association of India IAMAI, found that about 53% of online users prefer ATM while 23% selected Internet Banking as the preferred channel in India. Until the advent of ATMs people in India were not aware or affected by the technological revolutions happening in the banking sector. ATMs became a major revelation for customers since it offered customers the opportunity to avoid long queues in front of cashiers of their banks.

Since the mid -1990s there has been a fundamental shift in banking delivery channels towards using self-service channels such as online banking services.

Research relating to the adoption of the internet and other ICT platforms in banking has been discussed from theoretical (Rollason, 1989; Zekos, 1999) and empirical perspectives (Daniel, 1999; Gurau, 2002; Bradley and Stewart, 2003).

### **10. The case of Electronic banking in Ghana**

In recent times technology has become a critical factor in the development of Ghanaian banks. Banks have always sought the media through which they would serve their clients timely, more cost-effectively as well as increase the utility to their clientele. Their main concern has been to serve clients more conveniently, and in the process increase profits and competitiveness. Electronic and communications technologies have been used extensively in banking for many years to advance the agenda of banks.

The earliest forms of electronic and communications technologies used in Ghana were mainly office automation devices. Telephones, telex and facsimile were employed to speed up and make more efficient, the process of servicing clients. For decades, these remained the main information and communication technologies used for transacting banking business in Ghana.

The advent of Personal Computers (PCs) in the 1980s, intensified competition and Ghanaian banks begun to use them in back-office operations and later tellers used them to service clients. Advancements in computer technology saw the banks networking their branches and operations thereby making the one-branch philosophy a reality. Barclays Bank Ghana and Standard Chartered Bank Ghana pioneered this very important electronic novelty, which dramatically transformed the banking landscape in the country.

The most revolutionary electronic innovation in this country and the world over has been the ATM. In Ghana, banks with ATM offerings have them networked and this has increased their utility to customers. The then Trust Bank Ghana (now member of Ecobank Group), in 1995 installed the first ATM. Soon afterwards, most of the major banks began their ATM networks at competitive and strategic locations. Ghana Commercial Bank started its ATM offering in 2001 in collaboration with Agricultural Development Bank. Almost all major banks currently operate ATMs in Ghana. The ATM has been the most successful delivery medium for consumer banking in this country. Customers consider it as important in their choice of banks, and banks that delayed the implementation of their ATM systems, have suffered irreparably. ATMs have been able to entrench the one-branch philosophy in this country, by being networked, so people do not necessarily have to go to their branch to do some banking.

Another technological innovation in Ghanaian banking industry is the various electronic cards, which the banks have developed over the years. The first major cash card is a product of Social Security Bank, now Socete Generale, introduced in May 1997. Their card, 'Sika Card' is a value card, onto which a cash amount is electronically loaded. In the early part of the year 2001 Standard Chartered Bank launched the first ever debit card in this country. Its functions have recently been integrated with the customers' ATM cards, which have increased its availability to the public since a separate application process is not needed to access it. A consortium of three (3) banks (Ecobank, Cal Merchant Bank and The Trust Bank) introduced a further development in electronic cards in November 2001, called 'E-Card'. This card is online in real time, so anytime a client uses the card, or changes occur in their account balance, their card automatically reflects the change. Currently almost every bank issues a debit card on customers' accounts. The credit card system is gradually being introduced into the banking system in Ghana.

First Capital Plus has recently introduced what they call Speed Banking, a 24-hour cash deposit service. This comes with a scratch card (Credit Card) of different values where customers can purchase and text the serial number of the scratch card to the bank and the bank account of the customer is automatically credited with the amount on the scratch card. Speed banking allows customers to deposit cash directly into their bank accounts in real time through an SMS (text message), anywhere, anytime, any day, using their mobile phones and a scratch card called speed banking card (SBC).

Though ATMs have enjoyed great success because of their great utility, it has been recognized that it is possible for banks to improve their competitive stance and profitability by providing their clients with even more convenience. Once again ICT was what saved the day, making it possible for home and office banking services to become a reality. In Ghana, some banks started to offer PC banking services, mainly to corporate clients. The banks provide the customers with the proprietary software, which they use to access their bank accounts, sometimes via the World Wide Web (WWW). Banks have recognized the internet as representing an opportunity to increase profits and their competitiveness. Currently, all banks are offering internet banking (i-banking) in Ghana.

Telephone banking, has also taken a big leap with its convenience and time. Barclays Bank (Gh.) launched its telephone banking services in August 28, 2002. SSB Bank also launched its "Sikatel" or "SSB Call Centre" (telephone banking) in September 19, 2002. The services available with this system are ascertaining credible information about the bank's products, the customers' complaints, bank statements and cheque book request and any other complaints and inquiry.

In recent times mobile banking is gaining momentum in Ghana. The widespread use of mobile phones in Ghana is fast tracking mobile banking to become a more convenient and accessible way of transfer of money or making payments. Telecommunication networks in Ghana are collaborating with banks in bringing this new form of banking to the door step of customers. MTN Ghana, a leading Telecommunication giant in Ghana was the first to introduce MTN mobile money. With this facility customers could transfer money through their mobile phones to another person anywhere across the country. This was in collaboration with major banks like Ghana Commercial Bank, Universal Merchant Bank etc. Airtel Ghana was next to follow with the introduction of 'ZAP' which also enabled customers to send money and make payments via mobile phones. The ZAP was not particularly successful so airtel repackaged the service as Airtel money which is competing favourably with MTN Mobile money. Now, Tigo has also introduced 'Tigo Cash'. These are all means of transferring money via the mobile phone.

As part of measures to promote branchless banking and a broad based financial inclusion, the Bank of Ghana (BOG) designed and launched a National Switch and Smart Card payment system in 2008. E-zwich is the brand name for the biometric switch and smart card payment system under the auspices of Ghana Interbank

Payment and Settlement System (Ghipss), a subsidiary of the BOG. E-zwich creates accessibility to banking and retail services to Ghanaians across the country. E-zwich cardholders can perform banking and retail transactions at the outlets of other e-zwich financial institutions as well as e-zwich point of sales (POS) and E-zwich ATM terminals. E-zwich POS supports both online and offline transactions. This dual capability ensures that e-zwich services can be accessed in all parts of the country irrespective of the communication network of the area. According to Ghipss, e-zwich smart-card is currently the only card in Ghana that provides the convenience of nationwide access as well as greater control over transactions for cardholders, retail merchants and other corporate users.

E-zwich cardholders benefit from the highest security standards through the biometric (fingerprint) client authentication system.

## 11. Discussion of Findings

Data gathered from bank staff and customers showed that banks now provide a wide range of electronic banking products including ATMs, Telephone banking, Internet banking, SMS banking, local and international transfer, bill payments, balance enquiry and electronic bank statement. Other services offered by banks include current account, savings account, investments, loan facilities, insurance and mortgages services (a new phenomenon catching up in Ghana) under one roof. The study found that E-banking has transformed banking in Ghana from a financial intermediary to a service provider. Banks now provide a one stop-shop for various financial services thereby creating what can be termed as financial shopping mall. Electronic banking has broadened the product portfolio of banks in Ghana. However the study found that there are certain electronic banking products and services in developed economies which are not available in Ghana. These include digital wallet, electronic cash, virtual pin, cyber coin, Millicent digital to mention only a few.

On the effect of Electronic banking on financial services in Ghana, it was revealed that electronic banking has created variety in the number of products and services. E-banking has enabled customers to choose the products they want. Electronic banking has empowered banking customers to the extent that customers can choose the time, place and method they would like to use to access financial service in Ghana. The research found that long queues which were normal feature in most banks in Ghana appear to have dwindled and this can be attributed to electronic banking in Ghana. Our visits to the case study banks showed that there were few customers in queues waiting to be served.

Electronic banking has made banking easier and convenient. Customers can now transact banking business from the comfort of their homes and offices without travelling long hours in traffic. Moreover banking services have been made available to many customers across the country. In the yesteryears banking services were offered mostly in the cities and urban centres and people had to travel long distances to access banking services. Now with a click of a button customers can access banking services from many different locations across the country. Banking services have thus been made accessible to many citizens in Ghana.

The advent of mobile telephony in Ghana has enhanced accessibility of electronic banking. Unlike computers, the number of people who own a mobile phone has grown exponentially in the last few years hence a lot more people can now access electronic banking from their phone.

Delivery of banking services has been made increasingly faster to cover a wide range of customers at many different locations.

For any business, the key to success is repeat business from the same customers or people referred by an existing customer.

With electronic banking, Customers receive instant information as soon as a transaction takes place on their accounts. For example almost all banks offer SMS alert to account holders such that the accounts of customers are updated as soon as a transaction hits the account.

Electronic banking has had an appreciable positive effect on bank productivity, banking transactions, cashiers' output, bank patronage, bank services delivery, customers' services and bank services. The number of customers taking up electronic banking products has increased over the years. Electronic banking has therefore affected positively the number of people who have access to financial services in Ghana.

Electronic banking has enabled banks to reduce cost. Banking services can now be delivered faster and efficiently with less staff.

The study also found that customers enjoy the following benefits from e-banking:

- i. Reduced cost in accessing and using the banking services.
- ii. Increased comfort and time saving; transactions can be made 24-hours a day, without requiring the physical interaction with the bank
- iii. Quick and continuous access to information. Customers will have easier access to information as they can check their accounts at the click of a button.

Electronic banking has increased the expectation of customers in terms quality of services delivery. Customers have become more sophisticated in terms of the type of service required, time of the service delivered and the

quality of service delivered.

Electronic banking has played a significant role in improving the standard of service delivered to the customer. With just a click of a button, the customer can check the services or products on offer in different banks making it easy to compare and choose. Electronic banking has made banking more competitive and complex.

It has been identified that the volume of routine work at the branch, e.g. generating statements, balance enquiry, cheque book request etc increases in proportion with the number of customers. This poses a serious threat to the bank on ensuring quality and consistency of service at the branch. The use of internet therefore helps the bank reduce the load of routine banking transaction at the branch. This is very useful at branches which cater for a large number of customers.

It emerged from the study that electronic banking is gradually creating a paperless system of banking. The manual system of banking where bank staff had to go through huge pile of files and documents has given way to an electronic system of banking. For example now all banks supply customers with electronic bank statements. Manual or paper bank statements are now supplied only on request. A growing trend that is emerging in banks in Ghana is the establishment of call centres to handle customers' enquiries and problems. Electronic banking has created a healthy competition among banks in Ghana. Another effect of electronic banking is that transactions are completed in short period of time thereby reducing the waiting time at the banking hall.

Despite the positive effect, the research found that electronic banking has some negative effects. One negative effect identified is security of accounts. About 80% of customers expressed worry about hackers getting unauthorized access to their accounts and spending their money. The customers mentioned that even though the banks have valid security certification and customer authentication, any breach into the system arising from identity theft may create serious problem for the customer and the bank. It may take months or years to correct compromised customer information. Many customers cited growing number of fake emails from fraudsters as a serious challenge to electronic banking in Ghana. Only 20% of customers said security was not a concern for them.

Another problem with electronic banking is the loss of personal touch. Some customers still take delight in being able to talk to a human being face-to face if they encounter problems.

It emerged from the study that day to day access to the internet is becoming another challenge to customers in Ghana. With the current ongoing power rationing in Ghana access to the internet may not be possible due to power outages and therefore customer may not have access to their accounts to transact banking business.

The study found that electronic banking means additional cost to customers because customers will need to acquire personal computers, internet access at home and computer skills to be able to use electronic banking products and services.

Another major challenge of electronic banking is how to create the necessary level of regulatory and institutional framework for e-banking in Ghana

With the issue of the prospects of E-banking in Ghana, the study revealed that in the short term banks must evaluate their strategic position deciding which direction they want to proceed in and then evaluating the features contained in their competitors' web sites. The study also found that in the long term, competitive advantage will come from providing innovative technology oriented services, or services that are uniquely bundled, through the web site. In the future banks will need to focus their internet technology strategy to either maintain their positions or they will be forced through acquisitions or mergers. Also in the future banks will continue to innovate in bundling their services, finding new ways to offer those services, including the use of new technologies, wireless communication and mobile banking will continue to increase, making e-banking even more popular.

It must also be noted that, at least, in the foreseeable future there will continue to be brick and mortar banking facilities. The current generations of customers still require, in human terms, the personal contact provided by face to face contact so, while e-banking will continue to grow and mature, customers still need to know there is a human face behind the screen. The future of e-banking depends to a very large extent on the future development of technology. One thing which is mostly certain is that it will continue to offer new delivery methods for banking services.

Majority of banking transactions in Ghana are now carried out electronically. Transactions such as transfer payment instructions, financial instruments and even value itself are carried out in the form of digital cash thereby bringing huge benefits to the banking industry and the wider national economy.

The last few years have witnessed an intense legislative and regulatory activity in many countries to address the numerous complexities and novelties brought about through electronic banking. In 2008 Ghana passed laws in the realm of electronic transactions and communications.

## 12. Conclusion

Electronic banking has fundamentally changed the business of banking in Ghana from a financial intermediary to a financial shopping mall providing a one stop shop for various financial services.

Electronic banking has enabled customers to carry out a number of financial transactions from many different locations with just a few clicks.

E-banking helps in reducing costs by providing financial services cheaper and faster with less staff. Electronic banking has created variety for customers. Customers can choose the time, place, the products they want and the method by which they want to use to access the service or product.

Electronic banking has become significantly popular, employed by making financial institutions to reduce costs associated with having personnel to serve customers physically. Electronic banking can help banks achieve competitive advantage. The internet is therefore a critical medium which offers the bank competitive advantage in sustaining the future growth and profitability level of the bank.

The challenges include; how to adopt global technology to local requirements, , ability to strengthen public and government support for e-banking, how to create the necessary IT infrastructural base to propel e-banking delivery in Ghana, how to reduce the high illiteracy rate and above all how to deal with the security concerns of customers.

Electronic banking will undoubtedly continue to offer new delivery channels for banking services now and in the near future. .

E-banking services offered by banks should try to mobilize more deposit schemes through better marketing and incentive measures.

## 13. Recommendations

There are many other electronic banking products which are not available in Ghana. It is recommended that banks in Ghana must step up their efforts to introduce the full range of electronic banking products and services as exist in developed economies to enable customers in Ghana to compete in the global market. These include digital wallet, electronic cash, virtual pin, cyber coin and Millicent digital.

Banks should establish a customer service department specifically to attend to electronic banking customers who have issues. This will avoid the situation where online customers will still have to walk to the banking hall to get their issues resolved.

Banks must educate their customers not to disclose their customer identification numbers or passwords to anyone else. Customers can also be educated to change their passwords periodically.

Banks should collaborate with the government to solve the current power crisis in order to provide uninterrupted access to the internet for customers.

Government must step up its efforts on national fibre optic projects across the country to improve on internet connectivity in the country which will enhance accessibility.

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