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# Effect of Information and Communication Technology (ICT) on the Delivery of Banking Services in Ghana: A Case Study of Zenith Bank Ghana Limited

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ABSTRACT

The study seek to examine the awareness of Information and Communication Technology banking among customers; to analyze the usage of Information and Communication Technology in banking and to identify the benefits of Information and Communication Technology in banking. Convenience sampling technique was employed by the study. Questionnaire was used to collect the data. Statistical package for social sciences (SPSS) was used to analyze the data collected. Descriptive statistics (percentages and frequencies) was used to make inferences from the data analyzed. The findings regarding the study revealed that majority of the respondents (90%) have heard of Information and Communication Technology (ICT) whiles 10% said they were not aware of any banking services called Information and Communication Technology (ICT). The result also reveals that 41.1% use only ATM cards, the most widely used ICT products within the banks for transactions, however, significant proportion of respondents (22.2%) also uses combinations of ICT products. Results again show that ninety (90%) of respondents believed that ICT products and services have a positive effect, the most prominent effect was customers having more time for other businesses and administrative works get reduced drastically. Base on this, the researchers however, believed that considerable education and marketing of Information and Communication Technology (ICT) products and services of the banks will attract more customers and provide customer satisfaction.

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## INTRODUCTION

One main advantage advancement in technology has brought to us is the introduction of Information and Communication Technology (ICT) platforms in the banking industry. Traditional banking is characterized by physical decentralization, with branches scattered around populated areas to give customers easy geographical access (Ainin et al., 2005). Information and Communication Technology (ICT) does away with the need for most visits to the bank. However, according to Locket & Littler (1997), physical banks assure customers that their banks has substantial resource and guarantee the security of their savings. A study indicated that although electronic banking has been available in the UK since the early 1980s, it is still at an embryonic stage. It is not clear whether all customers want or are comfortable with Information and Communication Technology (ICT) (Daniel & Storey, 1997). Technology is changing at a rapid pace making it difficult for both the customer and the bank to determine the best approach. Particular problems arise with trying to integrate new channels with legacy channels. It is for these reasons that academic research is needed in this newly emerging delivery channel (Daniel & Storey, 1997). Similarly, in Ghana, most banks practicing Information and Communication Technology (ICT) are also facing challenges such as customer preference of the Information and Communication Technology (ICT) facility, convenience of clients to utilize and adopt ICT Products. While numerous studies have been undertaken to examine issues in the wider context of

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Information and Communication Technology (ICT) and customer loyalty, comprehensive research in the area of Information and Communication Technology (ICT) issues and customer preferences in the specific context of Ghana has been rather limited. The main objective of this research work is to assess the impact of Information and Communication Technology (ICT) on the delivery of banking services in Ghana with Zenith Bank Ghana Limited as case study. This is as a result of the highly inclined ICT products of Zenith Bank Limited as compared to other banks in the country.

Specifically the study objectives are:

1. To examine the awareness of Information and Communication Technology (ICT) banking among customers.
2. To analyse the usage of Information and Communication Technology (ICT) in banking.
3. To identify the benefits of Information and Communication Technology (ICT) in banking.
4. To suggest measures for effective utilization of Information and Communication Technology (ICT) banking.

## RESEARCH QUESTIONS

Based on the above stated objectives, the following research questions were answered:

1. Are customers aware of Information and Communication Technology (ICT) banking?
2. What Information and Communication Technology (ICT) platforms are available in the banking industry?
3. What are the effects of Information and Communication Technology (ICT) on banking Services?
4. What recommendations on the impact of Information and Communication Technology (ICT) on banking Services?

## LITERATURE REVIEW
## HISTORY OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

The history of Information and Communication Technology (ICT) originates from humble beginnings, which include the abacus. The abacus is thought to have been originally invented 3000 years before the birth of Christ. Revisions to its use/design continued for many years e.g. 500 BC a bead and wire version is developed in Egypt. Early versions of the calculator were gradually replacing this primitive method of mathematics. In 1624 Wilhelm Schickard built the first four-function calculator-clock at the University of Heidelberg, thus heralding a new era. Mechanical versions of the calculator followed in the years to come. Calculators as we know them couldn't have existed until 1780, when Benjamin Franklin discovered (through experimentation) electricity. The 1st general purpose computer was designed by Charles Babbage around the year of 1833. In 1855 George and Edvard Scheutz built a practical model based on Babbage's original designs. The 1st electronic calculator (named the Z1) is built by Konrad Zuse in 1931. In the year of 1940 at Bell Labs, the Complex Number Calculator is tested and then demonstrated. This is thought to have been the first digital (pulse wave rather than analogue wave run) computer.

Quickly approaching the computers that we use today, 1971 was the year that the Intel Corporation released the 1st microprocessor (the Intel 4004). Macian E. Hoff was thought to have been the leader of the project. The PC as we know it today was created by IBM and released during 1981. Apple introduces its PC alternative, the Macintosh, during 1984. It features a GUI (Graphical User Interface) which gave the IBM PC's DOS (text-based) run system stiff competition due to its usability and professional software. The World Wide Web is developed by Tim Lee in 1991, and CERN also creates the 1st Web Server. The Pentium chip is included in PCs for the first time in 1993 signaling the end for the 486. There is officially World Internet Connectivity as of 6/15/95.

### Supercomputers

A supercomputer is the most advanced type of computer (or collection of computers in one large tower) available. They are used for calculations that are too complex for the average computer i.e. for processing and predicting weather from thousands of individual ever changing files of information. An example of a modern supercomputer is IBM's ASCI Purple. It cost 250 million dollars and was built for the Department of Energy (USA.) This computer harnesses a peak speed of 467 teraflops and could be used for purposes such as to simulate aging or the operation of nuclear weapons. Supercomputers were first introduced in the early seventies when Seymour Cray unveiled the Cray 1.

### How ICT has been embedded into today's industry and commerce

Once a difficult problem, now an integral part of all industries, ICT has become accepted due to huge benefits for businesses that if were ignored would become massive disadvantages in the competitive marketplace. E-mail with its time saving cost effective nature was unused ten years ago, but now most businesses panic if their Internet connection stops working. Computers have replaced the traditional system of typewriters which were unforgiving if you made a mistake. Now backup copies and spell checkers make that process easier (as I've found out typing this.) Filing space has been reduced with computerised records taking up the space of a PC instead of several cabinets. These benefits and others have helped ICT become embedded in today's industries.

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The development of the World Wide Web has given commercial enterprises a new business avenue to go down. The whole area of commerce involving the Internet is termed E-commerce and has been used (not always successfully) since the arrival of the Internet during the mid-nineties. Early e-companies suffered from offering the same product (as actual physical stores) with no Internet specific benefits to attract new or existing customers. A large percentage of early companies boomed and then went bust, due to heavy investment followed by heavy withdrawal of funds. Huge amounts of funds were invested in companies who had no product to sell and no experience of how to sell it. The value of shares and the combined PLC (Public Limited Company) value of some of these companies were higher than the value of established profit making businesses. Once shareholders cleared the mud from their eyes and paid attention it was too late to turn these situations around. Thus the method of selling and running made allegedly unstoppable companies go bust over night. A domino effect filled the air and soon people were wondering just what had happened to their dream investments.

Fortunately the market for e-commerce is stabilizing as companies learn from their mistakes and offer products/services, which can only be accessed through the Internet e.g. E-bay. The interactivity and relative speed of computers/the Internet are being used in ways, which could not be achieved using regular business practices. The Internet is a development in the history of ICT which is now (in 2005) greatly affecting the development of industry and commerce. The idea of e-commerce didn't exist until the invention of the Internet and how the development of e-commerce has pushed forward industry and commerce into new lines of business. E-mail is another specific example, which has speeded up industries and given commerce a boost (Schwartz, 2012).

## DEFINING INFORMATION AND COMMUNICATIONS TECHNOLOGY

Information Technology (I.T.) has been defined as the usage of computers, digital technology to create, store, exchange and manipulate data in various fields of production and services (www.searchdatacenter.techtarget.com). In the banking sector it is used in concepts like Internet Banking, Automated Teller Machine (ATM) and Debit & Credit card, and so on. It is a general term used for utilizing of electronic technology for business information processes at all levels (www.elearningnc.gov/about_elearning).

The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness.

Information and Communication Technology (ICT) directly affects how managers decide, how they plan and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery (Garau, 2002).

### Reasons Underlying Information and Communication Technology (ICT) Banking

There are two fundamental reasons underlying Information and Communication Technology (ICT) banking development and diffusion which are that banks get notable cost savings by offering electronic banking services which are the cheapest delivery channel once established, (Sathye, 1999, Robinson, 2000). The second reason is that banks branch networks have been reduced as well as downsize the number of service staff leading to self-service channels which customers believe is time consuming, (Mattilia et al, 2003). But Nyangosi (2006) asserts that time, cost savings and freedom found the main reasons underlying electronic banking acceptance as indicated by several studies that online bankers are the most profitable and wealthiest segment of banks.

### Challenges of Regulatory On Electronic Banking

The challenges of regulatory on electronic banking in the country are that automation of banking operations is really posing challenges to the regulatory Supervisory Authorities in that country which are the major issues concerned are the money laundering, fraud, electrically generated evidence, consumer protection, job cut, possibility of core business being swallowed and systems operational risks.

### Benefits of Regulatory On Electronic Banking

There are lots of benefits for the banks, economy and the customers to derive from. In a nutshell, Information and Communication Technology (ICT) banking serves so many benefit not to the banks itself but also to the society at large. However, the essential ingredients in delivering quality electronic banking services as assert by (Williams, 1992, Tarvar, 1987, Walter, 1974) are in the following which are that an organization should bid to deliver exceptional new products such as strategy, leadership, personnel, design, infrastructure and measurement.

Information and Communication Technology (ICT) being a worldwide acclaimed means of operating process offering an enormous range of benefits to the business as this embraces huge capital. The applications allow for speedy communication inside the organization which will lead to the management to function more efficiently. Information

and Communication Technology (ICT) is a great source of competitive opportunities for an organization as it acts a vital importance in electronic banking because it minimizes cost through internal process and product, and it create a swifter communication with the customers that tends towards a wonderful way of displaying their products through online availability.

## BANKING SERVICES REVOLUTIONIZED BY INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

List of some of the processes of banking revolutionized by Information Technology (I.T) and Telecommunication technology are account opening, customer account mandate, clearing, withdrawals, Account Balance & Transaction Inquiry, transfer of funds, statement requests, cheque book requisition, transaction processing and recording, and so on (Zenithbank, 2014). Information and Communication Technology has provided self-service facilities (automated customer service machines) from where prospective customers can complete their account opening documents direct online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards. Communication Technology deals with the Physical devices and software that link various computer hardware components and transfer data from one physical location to another (Zenithbank, 2014).

## INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PRODUCTS AND SERVICES AVAILABLE IN THE BANKING SECTOR

Banks have made extensive use of Information and Communication Technology (ICT) for many years in operations. The following Information and Communication Technology (ICT) Systems have made great impact on the banking activities.

### Bankers Automated Clearing Services (BACS)

Banker's Automated Clearing Services (BACS) use computers to carry out most financial transactions between banks. These consist of, clearing cheques, paying salaries, payment of standing orders or direct debits (http:/www.bacs.co.uk/bacs/corporate.aspx, (2015). The BACS does its processing by batch processing in which all transactions from the previous day are processed at one time. The processed data is passed between banks on magnetic tapes. Logs are kept of all the transaction. This involves the use of Magnetic Ink Character Reader (MICR) for cheque processing. It is capable of encoding, reading and sorting cheques (http:/www.businesspundit.com/investing/banks-automated).

### Automated Teller Machines (ATM)

ATM is also called 24-hour tellers are electronic terminals which give consumers the opportunity to bank at almost any time (FTC, 2006). ATM banking is one of the earliest and widely adopted retail ICT services in Kenya (Nyangosi et al, 2009). It is described as a combination of a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records 24 hours a day (Rose, 1999). To withdraw cash, make deposits or transfer funds between accounts, a consumer needs an ATM card and a personal identification number. Once the customer login, access to transactions are displayed on the screen. It offers several retail banking services to customers. They are mostly located outside of banks, and are also found at airports, malls, and places far away from the home bank of customers. They were introduced first to function as cash dispensing machines (Abor, 2004). Some ATMs charge a usage fee for this service, with a higher fee for consumers who do not have an account at their institution. If a fee is charged, it must be revealed on the terminal screen or on a sign next to the screen (Rose, 1999). ATM services have a lot of advantages. They include increase in productivity during banking hours if the service is available in addition to the human tellers. They are cost-effective way of achieving higher productivity per period of time. According to Rose (1999), an ATM transaction is an average of about 6,400 per month compared to 4,300 for human tellers. Furthermore, it saves customers time in service delivery as alternative to queuing in bank halls, customers can invest such time saved into other productive activities (Abor, 2004). In addition, ATMs continue to serve customers whiles human tellers in the banking hall have stopped work, thereby increasing productivity for the banks (Abor, 2004).

### Telephone Banking

Telephone Banking "Tele-banking" can be considered as a form of remote or virtual banking, which is essentially the delivery of branch financial services via telecommunication devices where the bank customers can perform retail banking transactions by dialing a touch-tone telephone or mobile communication unit, which is connected to an automated system of the bank by utilizing Automated Voice Response (AVR) technology" (Balachandher el al, 2001).

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**Personal Computer Banking**

Personal Computer Banking (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". Once access is gained, the customer can perform a lot of retail banking functions. The increasing awareness of the importance of computer literacy has resulted in increasing the use of personal computers.

This certainly supports the growth of Personal Computer (PC) banking which virtually establishes a branch in the customer's home or office, and offers 24-hour service, seven days a week. It also has the benefits of Telephone Banking and ATMs (Abor, 2004). It offers consumers the convenience of conducting many banking transactions electronically using a personal computer. Consumers can view their account balances, request transfers between accounts and pay bills electronically from home (Abor, 2004).

**Electronic Funds Transfer at Point Of Sale (EFTPoS)**

An Electronic Funds Transfer at the Point of Sale is an on-line system that allows customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases (at purchase points). A Point of Sale (POS) uses a debit card to activate an Electronic Fund Transfer Process (Chorafas, 1988). Point-of-Sale Transfer Terminals allow consumers to pay for retail purchase with a check card, a new name for debit card. This card looks like a credit card but with a significant difference, the money for the purchase is transferred immediately from your account to the store's account (Abor, 2004). Increased banking productivity results from the use of Electronic Funds Transfer at Point of Sale (EFTPoS) to service customers shopping payment requirements instead of clerical duties in handling cheques and cash withdrawals for shopping. Furthermore, the system continues after banking hours, hence continual productivity for the bank even after banking hours. It also saves customers time and energy in getting to bank branches or ATMs for cash withdrawals which can be harnessed into other productive activities (Abor, 2004). Some banks issued international cards (such as Visa, MasterCard etc.) to their customers. Such cards can be used wherever accepted, and payment on the cards can only be done through an ordinary domiciliary account of the cardholder, or any other account that may be permitted. Some of these cards are credit or debit cards (Abor, 2004).

**Internet Banking**

Internet banking is a new age banking concept. It uses technology and brings the bank closer to the customer. Internet banking refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank's website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations (Thulani et al, 2009). For those that have access to the internet and a computer all you need to do is proceed to your banks website and login. From there you have access to all of your accounts that you have at that bank. Transfer funds between your accounts with ease. You can also use online banking to see how much money you have in your accounts and where the money you have spent has gone (Abor, 2004).

Broadly, the levels of banking services offered through internet can be categorized into three types:

i. The Basic Level Service is the bank's websites which disseminate information on different products and services offered to customers and members of public in general. It may receive and reply to customer's queries through e-mail (Adriana, 2006).
ii. In the next level are Simple Transactional Websites which allows customers to submit their instructions, applications for different services, queries on their account balances, etc, but do not permit any fund-based transactions on their accounts (Adriana, 2006).
iii. The third level of Internet banking services are offered by Fully Transactional Websites which allows the customers to operate on their accounts for transfer of funds, payment of different bills, subscribing to other products of the bank and to transact purchase and sale of securities (Adriana, 2006).

The above forms of Internet banking services are offered by traditional banks as an additional method of serving the customer. There are also banks that deliver banking services primarily through Internet or other electronic delivery channels. Some of these banks are known as 'virtual' banks or 'Internet-only' banks and may not have any physical presence in a country despite offering different banking services (Adriana, 2006).

**Credit Cards**

A credit card is a small plastic card issued to users as a system of payment (Mavri & Ioannou, 2006). It allows its holder to buy goods and services based on the holder's promise to pay for these goods and services. The issuer of the card creates a revolving account and grants a line of credit to the consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user (Mavri & Ioannou, 2006).

A credit card is different from a debit card in that it does not withdraw money from the users account after every transaction. The issuer lends money to the consumer to be paid to the merchant. Holders of a valid credit card have the authorization to purchase goods and services up to a predetermined amount, called a credit limit. The vendor receives essential credit card information from the cardholder, the bank issuing the card actually reimburses the vendor, and eventually the cardholder repays the bank through regular monthly payments. If the entire balance is not paid in full, the credit card issuer can legally charge interest fees on the unpaid portion (Mavri & Ioannou, 2006).

**Debit Cards**

A debit card (also known as a bank card or cheque card) is a plastic card that provides an alternative payment method to cash when making purchases. Functionally, it can be called an electronic cheque, as the funds are withdrawn directly from either the bank account or from the remaining balance on the card. In some cases, the cards are designed exclusively for use on the internet, and so there is no physical card (Mavri & Ioannou, 2006). In many countries the use of debit cards has become so widespread that their volume of use has overtaken or entirely replaced the cheque and, in some instances, cash transactions. Like credit cards, debit cards are used widely for telephone and Internet purchases and, unlike credit cards, the funds are transferred immediately from the bearer's bank account instead of having the bearer pay back the money at a later date. Debit cards may also allow for instant withdrawal of cash, acting as the ATM card for withdrawing cash and as a check guarantee card (Mavri & Ioannou, 2006).

## EFFECTS OF ICT SYSTEMS ON THE BANKING SERVICES

The developments in information collection, storage, processing and transmission and distribution technology have influenced all aspects of banking activities and are regarded as the main driving forces for the changes in banking industry. The technology influences the banking industry, mainly in the following aspects:

**Technology Is Influencing Competition and the Degree of Contestability in Banking**

Due to the development of technology, bank's superiority in information is declining. Entry barrier have been declining, new competitors have emerged. Some financial products and services have become more transparent and, customers show willingness to unbundle the demand for financial products and services, all these lead to a more competitive environment. Due to lowered entry and exist and deconstruction, for some sub-financial markets, contestability in banking is also raised (Lucas, 2003).

**Technology is Safe and Accessible for Users**

Internet banking gives you access to banking 24 hours a day, seven days a week. Online Banking also eliminates time and distance as barriers to banking. The use of internet banking helps to keep operating costs down for banks, resulting in cheaper transaction costs for customers. Bill payment is a service that allows you pay your hills online whenever you want to and whatever account you have. You can pay almost anyone from friends to businesses and creditors. Through this feature you can schedule your payments in advance, set up recurring payments on regular bills and even view your payment history. There is no need to waste any 1im or money waiting in line at the post office to get stamps, making extra trips to the mailbox and ordering cheque (Araya et al, 2007).

**Technology Influences Economy of Scale**

Competitive pressure forces banks to lower their cost. Bank seeks to get economy of scale in bank progression instead of being a big bank. Bank seeks to secure the optimal business structure, and secure the competitive imperative of economy of scale.
There are other options to get economy of scale, including joint venture and confederation of financial firms. Small firms also can get economy of scale by outsource (Lucas, 2003).

**Technology Has Improved Delivery of Service**

Technology has a major impact on the way banking and financial services are delivered. A wide range of alternative delivery mechanism becomes available, internet, ATM and so on, these reduces the dependence on the branch network as a core delivery mechanism. With the development of technology, the financial systems are substantially over-supplied with delivery system through a duplication of network; bank has to change their delivery strategy, restructured their branch network strategy, and rationalized their strategy or the whole course of action (Caruso, 2003).

**Technology is Convenient and Easy**

We all have needed this service at one time or another. Online banking has made this feature convenient and easy. With this feature you can transfer money between your accounts. This is not just limited to your accounts within one particular banking institution but almost any banking institution that you have an account with. Information and

Communication Technology (ICT) allows you to obtain real-time information about your bank accounts. This allows you to verify whether a transaction or a cheque has cleared or whether there are any unauthorized transactions on your account (Cord is, 2007).

## INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN GHANAIAN BANKS

The banking industry in Ghana is undergoing rapid growth with the liberalization of the financial sector by the Bank of Ghana and positive economic environment (Adams & Lamptey, 2009). And because of this, most banks are catching up with increasingly technologies by bringing more innovative concepts into the banking sector.

One of key concept is the introduction of Information and Communication Technology (ICT), which involves 24-hour service provision to their clients. In Ghana, the earliest forms of electronic and communications technologies used 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, they remained the main information and communication technologies used for transacting bank business (Abor, 2004). Technological innovation coupled with availability of internet services in Ghana results in banks in Ghana networking their branches and provision of service products. Because of competition almost all banks in Ghana are now providing various forms of ICT platforms. For instance, a report by Abor (2010) showed that Barclays Bank (Ghana) Limited and Standard Chartered Bank (Ghana) Limited pioneered this very important electronic novelty, which changed the banking landscape in the country. Banks in Ghana have lunched many commercials and a range of products and services. The Trust Bank Ghana, now Ecobank Ghana, in 1995 installed the first ATM. After that, the other major banks began their ATM networks at competitive positions. Ghana Commercial Bank started its ATM offering in 2001 in collaboration with Agricultural Development Bank (Abor, 2004). In Ghana, ATM is the extensive and most widely utilized ICT services. 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; people do not necessarily have to go to their branch to do some banking (Abor, 2004). Various Electronic cards have been introduced by Ghanaian Banks. For instance, the first major cash card is a product of Social Security Bank, now Soceite Generale, introduced in May 1997 in this country. Furthermore, in the earlier part of year 2001 Standard Chartered Bank launched the first ever debit card in this country. A consortium of three (3) banks at the time, namely (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 (Boateng, 2006)

## THE EMPIRICAL REVIEW

Banking business is getting tougher by day to operate as it grows in spite of the increasing competition worldwide. It is obvious that proffering solutions to how best outreach of customers, improve customers' loyalty, gain competitive advantage and give great services thereby minimizing administrative costs and maximizing profits are vital to banking operations. Karjaluoto et al. (2002) opine that Information and Communication Technology (ICT) is the major electronic source in this sector, meaning that electronic banking as an online banking involves the provision of banking services in the case of accessing accounts, transferring funds between accounts and offering online financial services. Wang et al. (2003) assert that Information and Communication Technology (ICT) banking was under utilized as business organizations used it only to market their products and services in the 1990s. Customer orientations and usage of financial distribution channels in Australian financial sector was that, recently, most financial institutions are confronted with competitive pressure after the introduction of deregulation in 1983 but after thought, their strategies took full advantage of Information and Communication Technology (ICT), (Thornton and White, 2001). The difficulty to increase and preserve banking market share affected so many banks to commit more capital for better use of internet, again the uprising of electronic banking informed many other banks to rethink their Information and Communication Technology (ICT) techniques in competitive markets. They also suggested that any bank that neglect to respond to the urgent of electronic banking is or may probably lose customers since the cost of offering Information and Communication Technology (ICT) banking services is far cheaper to operate compared to retaining branch banking, (Tan and Teo, 2002). Jasimuddin (2004) agreed with Tan and Teo as he confirmed that the role of electronic banking in Saudi Arabia have impinged on the advantage of Information and Communication Technology (ICT) to establish Websites but few offered electronic banking service and he suggested that Saudi Arabia banking sector can only succeed in the global economy only if they integrate Information and Communication Technology (ICT) into their banking strategies. An empirical investigation conducted by Chiemeke et al, 2006, indicated that electronic banking have been adopted in Nigeria but the major inhibiting factors to internet banking as adopted in Nigeria are security, inadequate operational facilities including telecommunications facilities and electricity supply and he made recommendations on how banks can narrow the digital divide. Also Agboola (2006) inquired or scrutinized electronic payment system and tele-banking services and found that there has been a very modest move away from cash payments as payments are automated while there is declination of absolute volumes of cash transactions. It then means that tele-banking can broaden the customer relationship, retain customers' loyalty and allow banks to have large market share even in the face of epileptic supply of power, fear of fraudulent practices and lack of facilities necessary for their operation were taken care of.

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A research concluded on Turkish banks regarding Information and Communication Technology (ICT) banking had a profitable impact. Internet changed the dimensions of competition in the retail banking sector and it also provide opportunities for the emerging countries to build up financial intermediation infrastructures but noted that investment on electronic banking is a gradual process, (Onay et al, 2008, Sumra et al, 2011). Jordanian banks are not left out as majority of the banks provide services on internet through their websites and finding reveal that attention is giving more to achieve electronic banking as satisfying and fulfilling customers' needs but there should be a well-articulated strategy to achieve successes and profits in the long-run, Chi-square was used to determine the impact of Information and Communication Technology (ICT) banking in Iran which revealed the view points of customers i.e. electronic banking cause higher advantages to Iranians. This means that Iran banks provide services the customers are deriving satisfaction with particular reference to the use of electronic banking, (Siam, 2006, Mahdi and Mehrdad, 2010).
The banking sector is now in the era of menu-driven ultra-robust specialized software programmes called banking applications which can perform virtually all banking functions deducing from information collection, storage and transfer and processing (Ovia, 2006). Daniel (1999) opine that Information and Communication Technology (ICT) banking is the provision of electronic banking services to customers through internet technology while Karjaluoto et al. (2002) found that internet technology is the main electronic distribution channel in the banking sector. However, it is obvious that Information and Communication Technology (ICT) banking gained special attention in academic studies in the past 5 years as portrayed by banking journals, (Karjaluoto et al, 2002). Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and the decades that follow. They claim that the most significant shortcoming in the banking industry today is a wide spread failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly. Woherem (2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply Information and Communication Technology (ICT) to their operations are likely to survive and prosper in the new millennium. He advises banks to re-examine their service and delivery systems in order to properly position them within the framework of the dictates of the dynamism of information and communication technology.

## ICT PLATFORM AT ZENITH BANK GHANA LIMITED

Zenith Bank offers a wide range of electronic banking products/services differentiated for specific needs and developed with the goal to provide superior ease and convenience for customer transactions. For the bank, also, the wide range of ICT products are proportionate to the bank's branchless banking retail strategy, which does not limit banking services to normal banking hours or the bank's branches only.

With Zenith Bank's electronic offering, customers are equipped to carry out several transactions on their mobile phones, manage accounts on the internet, or use any of the Automated Teller Machines (ATM) on the bank's branch or offsite network across the country (Zenithbank, 2014).

### Internet Banking

Zenith Bank's Internet banking service is an online and real-time banking service, offering both individuals and businesses a range of banking services and account management tools that are timely, accurate, reliable and flexible. Zenith Bank provides you with Internet Banking Services known as "i-banking". This flexible service allows you to access your balances and carry out account transactions on a real-time basis anywhere in the world via the Internet. Ease and convenience of a 24 hour efficient and secure mobile banking experience. There is no charge for this service (Zenithbank, 2014).
Currently the Internet Banking enables one to:

- view your real-time account balances
- view real-time transactions on your account
- view transaction history on your account
- view uncollected funds on your account
- download and print your account activity report in Hyper Text Markup Language (Html), Comma Separated Value (CSV) and Excel formats
- Intra and Inter accounts transfers
- Pay bills e.g. DStv subscription.

The facility has also been developed with superior features of Transaction Inquiry, Own and Third Party Transfers Cheque confirmation, Cash-in-transit, Bank Drafts request, Cheque Book request, and so on. The facility enables clients to access their account from anywhere in the world to Check their balances and account activity, Transfer funds between their own and another Zenith Bank customer account, Confirm their cheques and request cheque books, Make standing orders, Request for Draft/Cash in Transit. To subscribe, clients only need an account with Zenith Bank, a reliable email address and internet access and telephone line. With these they can begin to gain operational and financial control over their personal or business accounts-either from the comfort of their offices, homes, or anywhere else in the world (Zenithbank, 2014).

**Platinum Banking**

The Zenith Bank Platinum Banking service is a one-stop shop with a personalized financial solution to the complex banking demands of high net-worth individuals. We offer a complete suite of personal banking services, complimented by e-business products, with a view to providing a first class and efficient private banking service. Platinum Banking is guided by our service promise to deliver excellent banking services using the best global practices, not only meet your requirements, but also exceed your expectations. This system offers you the services of:

- Portfolio management and investment advisory services.
- Platinum Retirement services.
- Lifestyle services.
- Flexible banking hours.
- Bill settlement services.
- Trustee services.

**Short Message Service (SMS) Banking**

A cell phone is not just a cell phone any more. At Zenith Bank you can monitor your account with your Global System for Mobile (GSM) phone anytime, anywhere. With the Short Message Service (SMS) Banking products clients will be able to view your account balance(s), track transactions on your account(s), transfer funds between your accounts, transfer funds to another person's account. The Z-Prompt is also a Short Message Service (SMS) notification system which informs customers about transactions on their accounts. Prompts are sent to a customer's Global System for Mobile (GSM) handset immediately a transaction is processed on the account. The notifications are delivered via email or mobile Short Message Service (SMS) technologies.

It comes with enormous banking benefits including safe and convenient, it saves customer time and effort of going to our branches, and it is as well cost effective. This service is available 24 hours a day (Zenithbank, 2014).

**Zenith Payment Service (ZPS)**

West Africa Just Got Smaller – Transfer money with ease and speed. As part of Zenith Bank (Ghana) Payment Services with Convenience, Anywhere, Anytime, the bank has the pleasure of introducing the Zenith Bank Payment Services (ZPS) (Zenithbank, 2014).

The ZPS is a web based platform on which customers and non - customers can receive or send money from Zenith Bank subsidiaries in Ghana and all over the world.

With the launch of this new solution, the public can transfer money conveniently at trusted locations with superior service levels to all Zenith Bank locations in the West African Sub-region.

This will increase mobility for trade, leisure, education and personal purposes within the various countries in West Africa. Clients and the general public can now conveniently transfer money from about 144 locations with ease and speed (Zenithbank, 2014).

**E-Zwich**

Zenith Bank (Ghana) can presently boast of e-zwich smart card which is a secure way of paying for goods. As soon as payment is done at the retail location, money is transferred from the buyer's account into the retailer's account and a receipt is immediately issued to confirm the transaction (Zenithbank, 2014). Zenith Hybrid Point of Sale (POS) is also another product which allows merchants to process card transactions from e-zwich and gh-link electronically on their premises. This process helps eliminate cash handling and associated errors, reduce fraud and related costs, lower processing cost as compared to cash or cheques, easy transaction reconciliation, prompt payment and global reach (Zenithbank, 2014).

**Zenith Visa Classic Cards**

Zenith Bank now offers exclusively for its account holders an electronic visa classic card. This card is accepted worldwide and offers customers true financial freedom, security, flexibility and convenience. It allows cardholders to withdraw cash or pay for goods and services worldwide, with funds from their accounts (Zenithbank, 2014).

**Zenith Visa Classic Debit Card**

The Zenith Visa Classic Debit card unlike Easy Pay ATM card can be used to make withdrawals on all Visa branded ATMs. It can be used to make purchases locally and internationally on points of sale at retail outlets that accept Visa

cards such as grocery stores, petrol stations, retail stores and restaurants. It can also be used on the internet for online purchases and payments (Zenithbank, 2014).

**Zenith Visa Classic Credit Card**

A credit card is a payment card with access to a monthly revolving line of credit. The amount of credit available to an individual cardholder is based on a credit score, derived from an individual's financial and demographic history. With the Zenith Visa Classic Credit Card, you can spend any amount within your credit limit wherever Visa Cards are accepted (Zenithbank, 2014).

**Zenith Visa Classic Prepaid Card**

Zenith Bank now offers a Visa Classic Prepaid card to account and non-account holders. The Zenith Visa Classic Prepaid Card provides convenience, access and security. The card is a reloadable card you load with your own funds for purchases or withdrawals. It is a smart and cost-effective alternative to carrying cash. You can load money on your card at any Zenith Bank branch near you (Zenithbank, 2014).

**Zenith Bank (Verified By Visa)**

As part of Zenith Bank's quest to protect it valued customers against online fraud, a new addition to the visa family has been employed.

Verified by Visa (VbyV) is an online program designed to make Internet purchase transactions safer by authenticating a cardholder's identity at the time of purchase. This is to create a level of consumer trust and confidence in online shopping similar to that in the physical shopping environment, as the card cannot be used without the PIN. This means that misplaced, stolen or cloned Zenith Bank VISA Cards with VbyV cannot be used to make online purchases by anyone who does not know a cardholder's secret VbyV PIN.

Effectively improves the security of online transactions, increases consumer confidence in online purchase, and reduces number of disputes and card fraud activity, protect the customer and the bank from cost of fraudulent transactions (Zenithbank, 2014).

**Mastercard**

The Zenith Bank Debit MasterCard is an international payments card, issued in partnership with MasterCard Worldwide to enable our customers withdraw cash from over 1.5 Million Automated Teller Machines (ATMs), pay for goods and services at MasterCard labeled Point of Sale (POS) Terminals worldwide as well as make payments on the Internet (Zenithbank, 2014).

The Card is directly linked to your Current or Savings account thus all transactions done using this card are reflected on the account instantly in real time.
Zenith Bank, with its strategic alliance with the world's leader in payment brands is able to also accept other MasterCard brands including Maestro and Cirrus Cards on all its ATMs and Point of Sale (POS) Terminals across the country (Zenithbank, 2014).

**Zenith Mobile Banking Products**

The Zenith Bank Mobile banking service allows customers to access their accounts and conveniently carry out banking transactions from anywhere in Ghana using a menu driven phone. The product features includes Balance enquiry, account-to-card transfers, Card-to-card transfers, view transaction history (last 5 transactions), Airtime purchases, Bill payment e.g. DSTV, MTN post-paid, Transfer funds between user's account and third party accounts, PIN change and password change (Zenithbank, 2014).

**Zenith Automated Teller Machine**

Wide Acceptance: Cards are accepted on over 44 Zenith Bank ATM locations and 144 Point of Sale Terminals nationwide for payment of goods and services.
Greater Security: Cards are chip based with all cardholder information encrypted. A transaction can only be authorized with the correct PIN. This restricts unauthorized use of your ATM card.
Cash withdrawal and other ATM transactions can be made at any time of the day offering you 24hr access to your money. It is simpler than writing a cheque or a withdrawal slip. Transfer of money can be made from one Zenith Bank account to another or in between accounts if the card is linked to two or more accounts.

Each withdrawal is recorded automatically on your monthly bank statement, helping cardholders track and manage their expenses. The card can be funded repeatedly during its validity period of two years but subjected to yearly renewal (Zenithbank, 2014).

## METHODOLOG

### Study Area

Zenith Bank (Ghana) Limited, Bank of the Year in 2008 and 2014, is a privately owned African bank incorporated in April 2004 under the Ghana Banking ACT 2004 (ACT 673) and a subsidiary of Zenith Bank PLC, thereby paving the way for the commencement of operations (Zenithbank, 2014).

Zenith Bank seeks to become a leading, technology-driven, global financial institution, providing distinctively unique range of financial services. Zenith Bank also seeks to make the Zenith brand a reputable international financial services network recognized for innovation, superior customer service and performance while creating premium value for all stakeholders (Zenithbank, 2014).

Presently, in Ghana, the vision of the bank is "to be a reference point in the provision of prompt, flawless and innovative banking services in the Ghanaian Banking industry". Zenith Bank set out to differentiate itself in the banking industry through its service quality, drive for a unique customer experience and the diverse caliber of its client base. Zenith Bank Ghana Limited as a one-stop financial institution is set "to continue to invest in the best people, technology and environment to underscore our commitment to achieving customer enthusiasm" (Zenithbank, 2014).

The Bank is built on the strengths of its staff, its structures, policies and procedures. As a principle and due to its preparedness to invest and develop the country's human capital.
The Bank also has an open door policy, thus reinforcing an informal atmosphere that breeds a feeling of equality. Everyone is accessible and approachable, working in open offices alongside their colleagues. In addition, it has a flat organizational structure that engenders effective communication and prompt decision-making (Zenithbank, 2014).

As recognition of Zenith Bank's leverage on its robust IT infrastructure to roll out customized electronic banking products and services, it has been awarded as the Best Bank of the year in 2008 (Zenithbank, 2014).

Zenith Bank offers a wide range of electronic banking products/services differentiated for specific needs and developed with the goal to provide superior ease and convenience for customer transactions. For the bank, also, the wide range of ICT products are proportionate to the bank's branchless banking retail strategy, which does not limit banking services to normal banking hours or the bank's branches only (Zenithbank, 2014).

With Zenith Bank's electronic offering, customers are equipped to carry out several transactions on their mobile phones, manage accounts on the internet, or use any of the Automated Teller Machines (ATM) on the bank's branch or offsite network across the country (Zenithbank, 2014).

### Study Design

Research design is usually a plan or blue print which specifies how data relating to a given problem should be collected and analyzed. It provides the procedural outlines for the conduct of any investigation (Bernard, 2007). In this study, the researcher adopted a case study approach because it provided in-depth information to address the objectives. In all, 90 questionnaires were administered to the interviewees from the selected branches of the bank and customers to solicit information concerning Information and Communication Technology (ICT). Part of the information was also gathered from the reports from the bank concerning ICT platform services.

### Population

In research methods, population is the entire aggregation of items from which samples can be drawn. The population of the present study consists of selected customers and branch staff from the Spintex Road and Graphic road branches of Zenith Bank Ghana Limited respectively.

### Sample Size

120 questionnaires were administered and 90 samples are chosen from the sample frame of the Zenith Bank Spintex and Graphic Road branch, for the study and the data is collected through the Structured Questionnaire administered. Convenient sample was adopted to obtain the 90 respondents: twelve (12) respondents from IT staff, eighteen (18) from other banking staff and sixty (60) from customers of the bank using the ICT platform.

**Sources of Data**

The study used data from both primary and secondary sources. Primary sources of data included questionnaire administered to selected customers and staff of the Spintex and Graphic Road branch. A copy of the questionnaire is attached as Appendix 1. The secondary sources of data constituted data gathered from Zenith Bank Ghana website, Zenith Bank Ghana Limited Profile, literature on banking technology, bulletins, in-house newsletters, books and journals, and unpublished theses.

**Data Collection Instruments**

The data collection instrument used was self-administered questionnaires. The questionnaire was used because the researcher considered it to be more convenient as respondents could answer at their convenience (See Appendix 1). The questionnaire was developed by the researcher based on the research questions and the literature. Open-ended and closed–ended questions were used. The questionnaire began with an introductory statement, which specified the purpose of the research as purely academic. Respondents were encouraged to be objective in their responses since they were assured of confidentiality.

**Data Collection Procedure**

A formal letter was written to the Banking Operation Department of Zenith Bank Ghana Limited before granted the permission to administer questionnaires. The researcher was assigned to a supervisor at the Head Office and Graphic Road branch. After a period of two weeks, the researcher went for the responses of the questionnaires.

**Data Analysis**

Data from the structured self administered questionnaire was properly organized through data coding, cleaning and entering. Data processing was by statistical package for social sciences (SPSS). Descriptive statistics by percentages, figures and tables were generated from the software to establish relationship among variables. The relevant information was obtained in a standard form using tables, frequencies and percentages to analyze and interpret the information. The results were finally presented in charts and tables. These were used to ensure easy understanding of the analysis.

## RESULTS AND DISCUSSIONS

### TYPES OF CUSTOMERS AT ZENITH BANK GHANA LIMITED

Figure 1 shows that all respondents (100%) were banking with Zenith Bank Ghana Limited with different customer types. The results show that (58%) of the respondents were individual customers and corporate customers representing 42%. Individual customers have different ICT products that they were willing to share any information with the researcher.

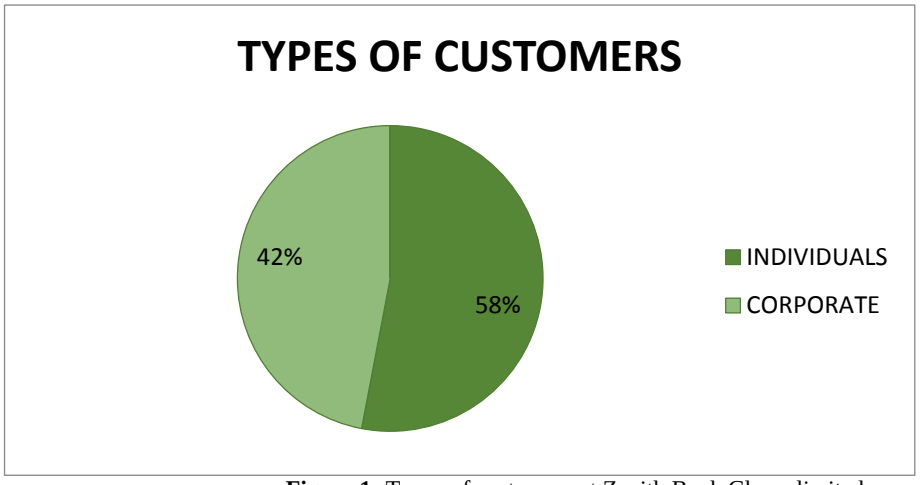



**Figure 1:** Types of customers at Zenith Bank Ghana limited
Source: Field Survey, 2015
Individual Customers represent 58%  Corporate Customers represent 42%

**FORMS OF BANKING SERVICES IN GHANA**

Generally, there are two main forms of banking services in Ghana namely, traditional and Electronic banking services. The results of the study in Figure 2 indicated that majority of the respondents (68%) knew both form of banking

services in Ghana. The results further indicated that 11% of the respondents are aware of only the traditional banking services, while 21% also revealed that they are aware of only the ICT services.
A study by Abor (2004) indicated that introduction of Information and Communication Technology (ICT) services in Ghana begun in the 1980s with proliferation of personal computers. Barclays Bank (Ghana) Limited and Standard Chartered Bank (Ghana) Limited pioneered this very important electronic novelty, which changed the banking landscape in the country.

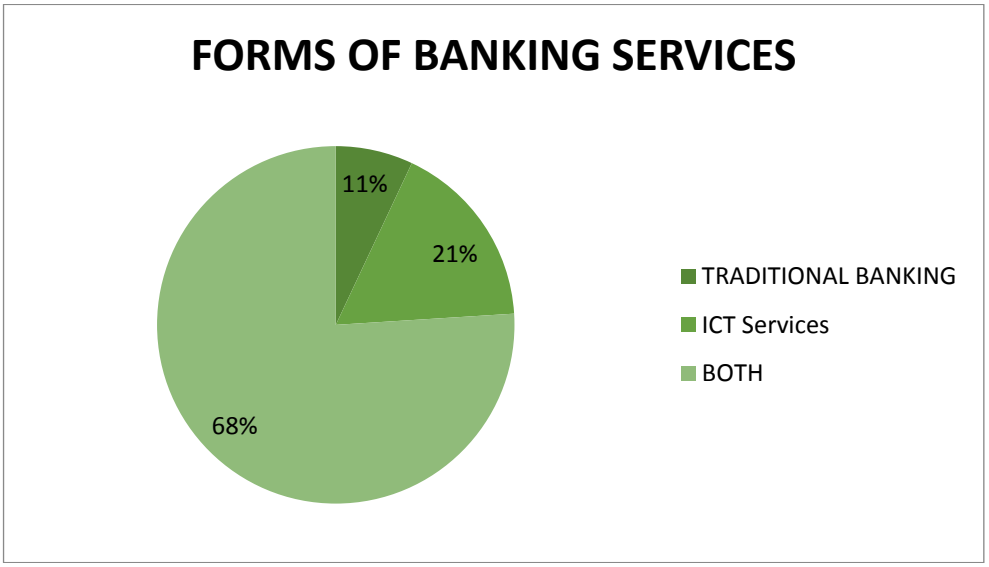



**Figure 2:** Distribution of respondents concerning forms of banking services in Ghana
Source: Field Survey, 2015

**RESPONDENTS' VIEWS ON INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PLATFORM IN BANKING**

The study sought to find out how respondents perceived Information and Communication Technology (ICT). The results presented in table 3 revealed that majority of the respondents (90%) have heard of Information and Communication Technology (ICT) whiles 10% said they were not aware of any banking services called Information and Communication Technology (ICT). Those who had heard of Information and Communication Technology (ICT) understood it in different ways. According to most respondents (53.3%), they explained Information and Communication Technology (ICT) as the use of internet and electronic media to bank (See Table 3).

Information and Communication Technology (ICT) is explained as conducting financial transactions on a secure website operated by a retail or virtual bank, credit union or building society (en.wikipedia.org/wiki/Electronic banking accessed on 30/3/2011). Explanation by respondents conforms to the general web definition.

The term electronic banking means different things to different people. Different authors have defined it in different ways based on their understanding of the application of electronic banking. Also, 29.8% of the respondents understood "ICT" to mean electronic banking, while 16.9% of respondents understood it to mean virtual banking service provision system.

**TABLE 3:** RESPONDENTS' VIEW OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PLATFORM IN BANKING

| RESPONSE | FREQUENCY | PERCENT |
|---|---|---|
| Use internet and electronic media to bank | 48 | 53.30% |
| Virtual banking service provision system | 17 | 16.90% |
| Electronic banking | 25 | 29.80% |

| | | |
|---|---|---|
| **TOTAL** | **90** | **100%** |

Source: Field Survey, 2015

**RESPONDENTS HAVING ACCESS TO INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PLATFORM IN BANKING**

Results indicate that 90% of respondents have access to ICT platform in banking, while 10% indicated that they did not have access to ICT technologies (See Figure 4).

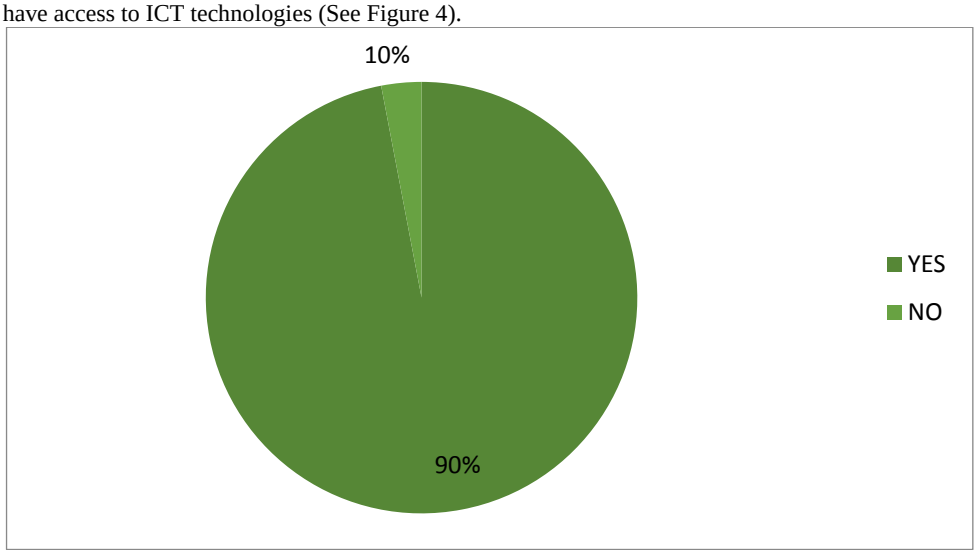



**Figure 4:** Respondents having access to ICT platform in banking
Source: Field Survey, 2015

**TYPES OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PLATFORM IN BANKING USED BY RESPONDENTS**

Table 5 indicates that respondents who use Information and Communication Technology (ICT) facilities have different types of ICT products from Zenith Bank Ghana Limited. The data reveals that 41.1% use only ATM cards. ATM is the most widely used ICT products within Zenith Bank Ghana Limited. ATMs are able to provide a wide range of services, such as making deposits, funds transfer between two or more accounts and bill payments (Abor, 2004). However, significant proportion of respondents (22.2%) also uses combinations of ICT products from Zenith Bank Ghana Limited. They included ATM, Internet Banking, SMS Banking, Slip Free Banking, Zenith Visa Cards, MasterCard, Zenith Money Transfer, and Z-cash.

**TABLE 5** TYPES OF ICT PLATFORM IN BANKING USED BY RESPONDENTS

| ICT PRODUCTS OR SERVICES | FREQUENCY | PERCENT |
|---|---|---|
| ATM | 37 | 41.10% |
| ATM + SMS Banking + Internet Banking + Zenith Visa Cards + MasterCard + Slip Free Banking | 20 | 22.20% |
| ATM + SMS Banking | 8 | 8.90% |
| Internet Banking | 7 | 7.80% |
| Slip Free Banking | 6 | 6.70% |
| ATM + Slip free banking | 5 | 5.60% |
| SMS banking | 4 | 4.40% |
| Slip Free + SMS banking | 3 | 3.30% |
| **TOTAL** | **90** | **100%** |

Source: Field Survey, 2015

**REASONS FOR USING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PLATFORMS IN BANKING**

Respondents of this study indicated their reasons for using Information and Communication Technology (ICT) products in Table 6. The dominant reason was easy access to money and account information (30%). Avoidance of long queues which are associated with traditional banking.

Customers indicated that using ICT products is very convenient and fast; it makes them save a lot of time for other businesses (See Table 6).

This result compares favorably by Liaoa and Cheung (2002) in Singapore, who also pointed out that individuals can E-bank over the internet at any time in any properly equipped location, the quality attribute of time and location convenience is likely to be significant in differentiating it from traditional retail banking.

**TABLE 6:** REASONS FOR USING ICT PRODUCTS OF ZENITH BANK

| ICT Products and services | **FREQUENCY** | **PERCENT** |
|---|---|---|
| Easy access to funds 24 hrs | 13 | 14.40% |
| Easy access to account information | 17 | 18.90% |
| Easy access to funds and account information | 27 | 30% |
| Makes transactions very fast | 14 | 15.60% |
| Convenient and saves time | 19 | 21.10% |
| **TOTAL** | **90** | **100%** |

Source: Field Survey, 2015

**INTRODUCTION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PRODUCTS AND SERVICES IN GHANA BANKING SECTOR**

Introduction of ICT in Ghana begun over twenty (20) years ago with the first major cash card being a product of Social Security Bank, now Soceite Generale, introduced in May 1997. This card, 'Sika Card' is a value card, onto which a cash amount is electronically loaded (Abor, 2004). During the early part of the introduction, it was offered to corporate clients only. For instance, the Trust Bank Ghana Ltd in 1995 installed the first ATM. However, after customer education was done, more customers opted for these ICT products.

The study shows that majority of respondents (41%) started using ICT products between the year 2010 to 2014 (See Figure 7). This may be due to the fact that, it was within this years that awareness of ICT technologies have gone done well with most of the respondents.

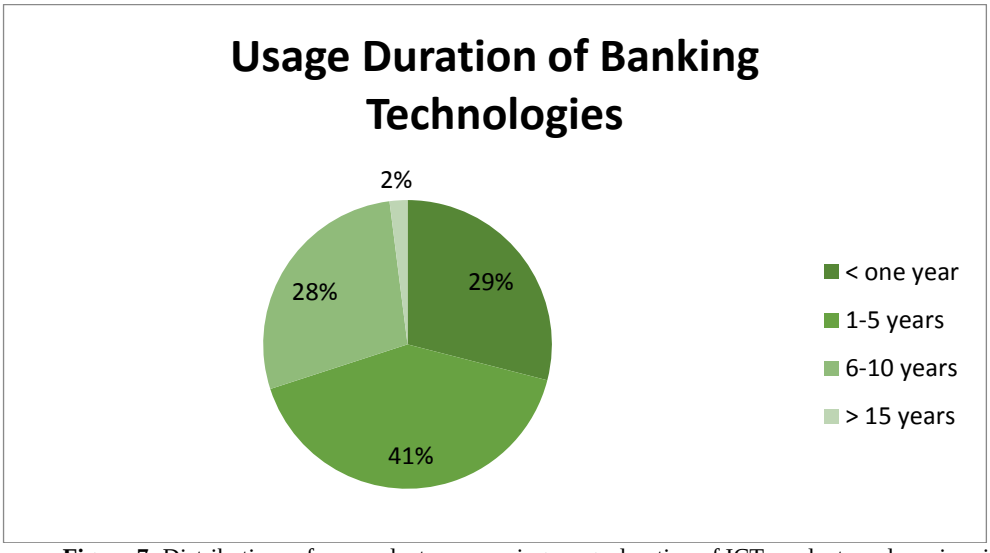



**Figure 7:** Distributions of respondents concerning usage duration of ICT products and services in banking
Source: Field Survey, 2015

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**RESPONDENTS PREFERENCE OF ICT PRODUCTS OF BANKS**

Table 8 illustrates respondent's preference of Electronic products. Results presented indicate that most respondents (44.4%) prefer ATM facility out of the other ICT products being offered at Zenith Bank. However, significant proportions of respondents also preferred combination of the ICT products. This is because ATM is 24-hour teller electronic terminals which give consumers the opportunity to bank at almost any time.

However, the ATM is located at vantage points and more often within the premises of Zenith Bank Branches. This is because customers save time by moving to these ATM facilities, they use other ICT products such as SMS Banking to access account information on their phones.

According to the survey, most respondents (47.8%) preferred Information and Communication Technology (ICT) Platforms because of their efficiency and user friendliness (See Table 9). This might be due to the fact that operations of ICT technologies were not difficult. Most often, there are simple steps to follow with instructions being offered by the system and within some few seconds the information being access is retrieved.

**TABLE 8:** PREFERENCES OF ICT PRODUCTS OR SERVICES

| ICT Products and services | **FREQUENCY** | **PERCENT** |
|---|---|---|
| ATM | 40 | 44.44% |
| ATM + SMS Banking + Internet Banking + Zenith Visa Cards + MasterCard + Slip Free Banking | 4 | 4.44% |
| ATM + SMS Banking | 11 | 12.22% |
| Internet Banking | 7 | 7.78% |
| Slip Free Banking ATM + Slip free banking | 3 | 3.33% |
| | 19 | 21.11% |
| SMS banking + internet banking | 3 | 3.33% |
| Slip Free + SMS banking | 3 | 3.33% |
| **TOTAL** | **90** | **100%** |

Source: Field Survey, 2015

Preference of Information and Communication Technology (ICT) products was in the domain of the customers. On a scale of 1 to 5, with 1 being the lower rank and 5 being the higher rank, most respondents ranked ATM as the preferred Information and Communication Technology (ICT) product. ATM scored the highest rank with an average score of 3.8 (See Figure 8). This clearly shows that out of the various Information and Communication Technology (ICT) products being offered in Zenith Bank Ghana Limited, customers prefer ATM usage relative to others. This is supported by similar study in Kenya showing that the trend of ATM banking grows over a period of 5 years, between the years 2002 and 2007, as evidenced by the increase in the number of ATMs (Gikandi and Bloor, 2010).

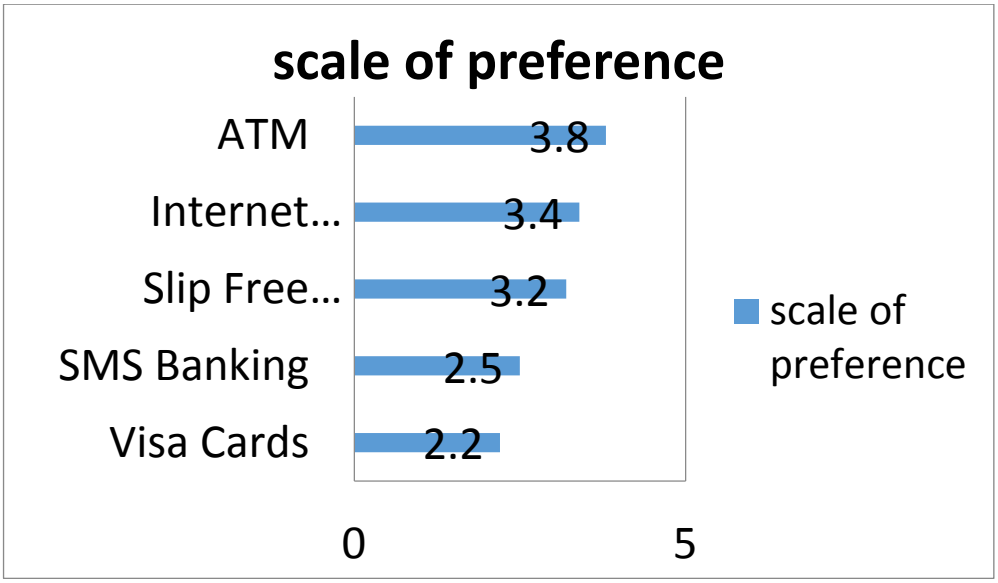



**Figure 8:** Ranking of ICT products by preference
Source Field Survey, 2015

**ADVANTAGES OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PLATFORM OVER TRADITIONAL BANKING**

**Table 9:** Respondent's Reasons For Preference of Their ICT Products

| **Table 8: Respondent's reasons for preference of their Electronic products** | **Frequency** | **Percent** |
|---|---|---|
| Valid Efficient and user friendly | 43 | 47.8 |
| Access to money anytime | 17 | 18.9 |
| Very fast in transacting business | 16 | 17.8 |
| Avoidance of long queues | 2 | 2.2 |
| Access to account details are easy | 12 | 13.3 |
| **Total** | **90** | **100.0** |

Source Field Survey, 2015

Banking Technology has several advantages over the traditional way of banking. The dominant advantage (32.2%) from the study was Information and Communication Technology (ICT) saves time (See Table 9). This implies that customers spend less time banking at Zenith Bank Ghana Limited.
Other pronounced advantages of banking technologies are that it is cost-effective. Thousands of customers can be dealt with at once. There is no need to have too many clerks and cashiers. The administrative work gets reduced drastically with banking technologies. Expenditure on paper slips, forms and even bank stationery have gone down, which helps raise the profit margin of the bank by a surprisingly large number in addition, shorter queues in the banking hall.

**RESPONDENTS LEVEL OF SATISFACTION ON THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)**

Comfortability of customers is also another factor associated with the use of Information and Communication Technology (ICT) products. The study indicated in Table 10 that 90% of respondents were very comfortable with the use of Information and Communication Technology (ICT) products. However, 10% of respondents mentioned that they do not feel comfortable using Information and Communication Technology (ICT). The comfortability derived from Information and Communication Technology (ICT) usage lessens time spends for banking.

**TABLE 10** Respondents Level of Satisfaction on the Use of ICT Products and services

| **Responses** | **Frequency** | **Percent** |
|---|---|---|
| Yes | 81 | 90 |

| | | |
|---|---|---|
| No | 9 | 10 |
| **Total** | **90** | **100** |

Source: Field Survey, 2015

**TIME SPENT BY RESPONDENTS ON THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PRODUCTS AND SERVICES**

The study further sought from respondents on time spent with regards to the use of Information and Communication Technology (ICT) facilities. The results indicated that 82.2% of respondents stated that they actually spend less time using Information and Communication Technology (ICT) whiles 17.8% mentioned they rather spend more time using the Information and Communication Technology (ICT) system. Nevertheless, less time is actually spent using Information and Communication Technology (ICT) products.
For instance requesting account details from Zenith Bank Ghana Limited requires only a few minutes (less than 5 minutes) for the information to be deliver onto the customer's phone, a product called SMS Banking. According to the result, most respondents (66%) said they spend an average of 1-5 minutes to transact business using Information and Communication Technology (ICT) system (See Figure 11). This might be due to the user friendly nature of most the ICT products. Customers do not require a lot of time using ICT product.

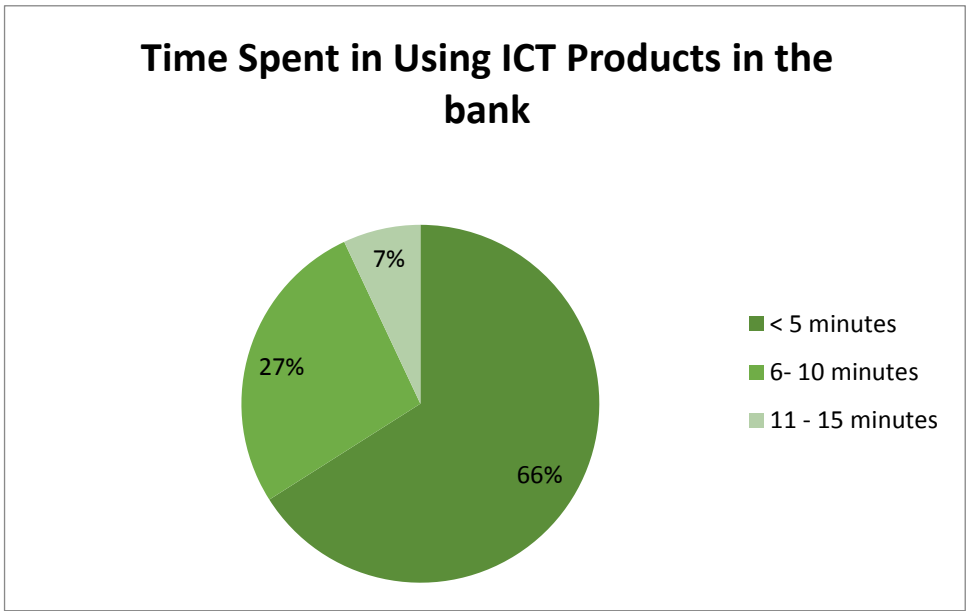



**Figure 11:** Distribution of Respondents Concerning Time Spent Using ICT Products
Source: Field Survey, 2015

**RESPONDENTS PERCEPTIONS TOWARDS THE EFFECTIVENESS OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PRODUCTS**

The effectiveness of Electronic products would make customers patronize the products. Figure 12 shows respondents perception towards the effectiveness of Electronic products. The result shows that majority of respondents (49%) affirmed that the ICT products are very effective in Zenith Bank Ghana Limited.
The Information and Communication Technology (ICT) services are monitored 24 hours and very effective in transaction of businesses. Customers have different level of satisfaction for ICT products usage. The results further show that, most respondents (44.4%) were very satisfied with the use of ICT products (See Table 10).
Customer satisfaction is a key to a development of a facility. Zenith Bank Ghana Limited has Customer Service Department where the needs of customers are channeled and address. This applies to all the Electronic products. Therefore it is not surprising to show that customers were very satisfied with the ICT products they are using.

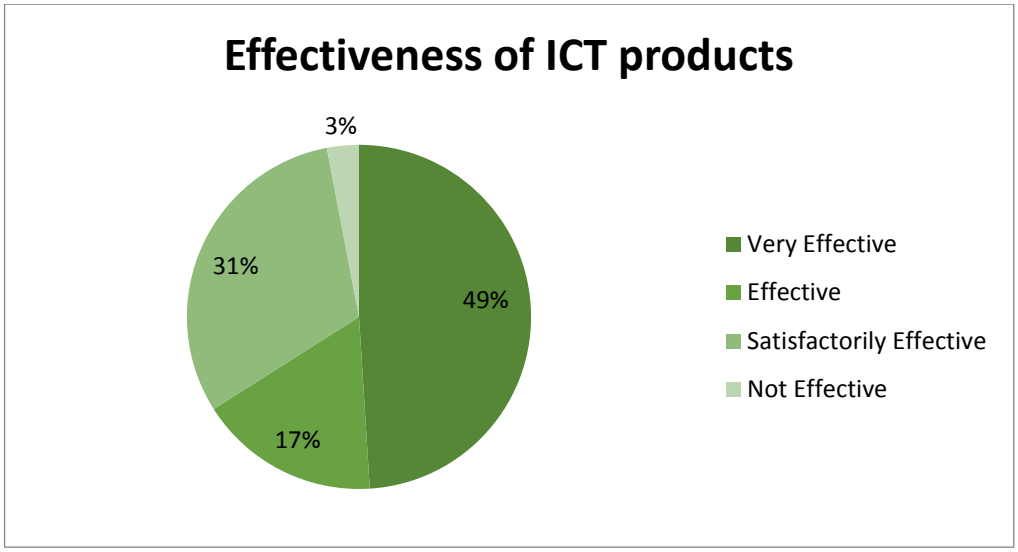



**Figure 12:** Distribution of Respondents Concerning Effectiveness of ICT products
Source: Field Survey, 2015

**THE EFFECT OF INFORMATION AND COMMUNICATION TECHNOLOGY ON THE DELIVERY OF BANKING SERVICES TO RESPONDENTS**

Table 13 illustrates the positive impact of Information and Communication Technology (ICT) to respondents. Results shows that ninety (90%) of respondents believed that ICT products and services were having a positive impact on customers, whiles 10% do not see the positive impact of using Information and Communication Technology (ICT) platform. However, the most prominent impact was customers having more time for other businesses. Because the use of Electronic products lessens time spent for banking. Also the results clearly shows that respondents (37%) mentioned that the other positive impact of Information and Communication Technology (ICT) was making banking transactions very easy (See Figure 13). Because transactions are being made easier using Information and Communication Technology (ICT), it may attract a lot of customers. Significant number (34%) of respondents also believed that with Information and Communication Technology (ICT), they could easily manage their accounts faster and effectively. For instance customers could easily know their account balance by requesting this through the SMS banking product of Zenith Bank Ghana Limited. Any imbalance in the accounts could easily be tracked and corrected within the shortest possible time.

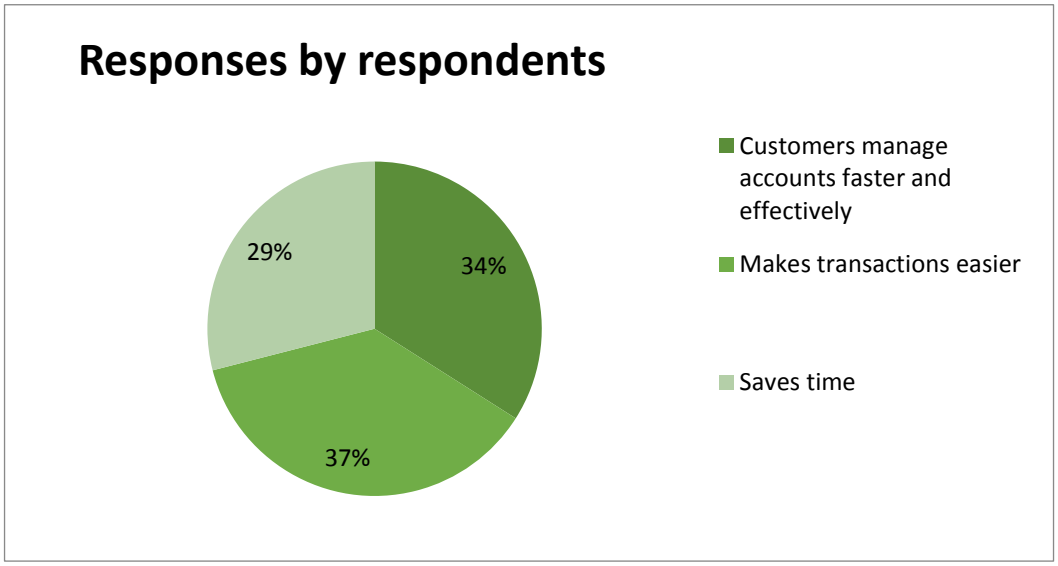



**Figure 13:** Distribution of Respondents Concerning Positive Effect of ICT products
Source: Field Survey, 2015

**REASONS IN USING ICT PRODUCTS WITH REGARDS TO SECURITY**

The security of Information and Communication Technology (ICT) is paramount to the service providers. Table 14 shows the level of security participants felt with regards to the use of Information and Communication Technology

(ICT) facilities. The results indicates that 48 of the respondents representing 53.3% felt that security features of Information and Communication Technology (ICT) are good which makes it very difficult to be abused by fraudsters and therefore safe to use.

In addition, 31.1% of the respondents affirmed that there is privacy in using Information and Communication Technology (ICT), whilst 15.6% of the respondents believe that frauds are not easily detected in using Information and Communication Technology (ICT) facilities.

**Table 14** Reasons for Safety in Using ICT Products and services

| Reasons | Frequency | Percent |
|---|---|---|
| Valid Gives me privacy | 28 | 31.10 |
| Frauds not easily detected | 14 | 15.60 |
| Security features are good | 48 | 53.30 |
| **Total** | **90** | **100.00** |

Source: Field Survey, 2015

**CHALLENGES OF ICT IN THE BANKING SECTOR**

Notwithstanding the significant benefits of electronic products in banks, it carries risks and challenges which are recognized and need to be managed by the banking institution in a prudent manner. In this study, most respondents (66.7%) mentioned that the main challenge facing Information and Communication Technology (ICT) system at Zenith Bank Ghana Limited is unreliable network system (See Table 15). This is true because internet connection which linked the systems together could easily fail resulting in collapse of the electronic network system.

However, the internet service is not provided by Zenith Bank Ghana Limited. The bank relies on this service provider so any hitch in their system has effect on the network of the bank. Furthermore, charges attracted for using Information and Communication Technology (ICT) products were very high according to some respondents (11.10%).

Although the study was not able to ascertain how much is being charge for the ICT products, almost all the banks charge for the use of the ICT products with the exception of Barclays bank that abolished ATM charges in the year 2010. The limit of money that could be withdrawn was also seen as a challenge by some respondents (13.30%).

However, this is done in banks in other countries too. For instance a study in Singapore shows that 72% of respondents considered transactions limits to be important. This may be due to the fact that Singaporean consumers routinely deal in small amounts (Sohail and Shanmugham, 2003).

**Table 15** Challenges Facing ICT Products and services

| Challenges | Frequency | Percent |
|---|---|---|
| Valid Limit on amount of cash withdrawn | | |
| Unreliable network system | 12 | 13.30 |
| Wrong debits | 60 | 66.70 |
| Unreliable source of power | 4 | 4.40 |
| Bank charges for ATM services | 4 | 4.40 |
| **Total** | 10 | 11.10 |
| | **90** | **100.00** |

Source: Field Survey, 2015

**WAYS TO ENHANCE INFORMATION AND COMMUNICATION TECHNOLOGY PRODUCTS AND SERVICES IN ZENITH BANK GHANA LIMITED**

With regards to ways of improving upon Information and Communication Technology (ICT) usage, Table 16 indicates that majority of the respondents (24.4%) pointed out that education and marketing of ICT products to customers would increase patronage and usage of the products. Education of the public concerning the benefits of various ICT products would attract more customers to bank with Zenith Bank Ghana Limited. Furthermore, more ATM outlets should be introduced at vantage locations within the cities. This would also reduce the distance customers would use to access the facility and entice more customers to bank with Zenith Bank Ghana Limited.

**Table 16** Ways to Enhance ICT platforms in Zenith Bank Ghana Limited

| | Frequency | Percent |
|---|---|---|
| Valid Increase security on use of ICT products | | |
| Have more ATM outlet | 13 | 14.40 |
| Customer education and marketing ICT products | 15 | 16.70 |
| Regular maintenance of ATM | 22 | 24.40 |
| Introduce prompt transaction data onto phones | 13 | 14.40 |
| Improve on network connections | 10 | 11.10 |
| Reduce ICT Service charges | 6 | 6.70 |
| **Total** | 11 | 12.20 |
| | **90** | **100.00** |

Source: Field Survey, 2015

**SUMMARY OF FINDINGS**

The study carried out show some main findings regarding the impact of Information and Communication Technology (ICT) on the delivering of banking services from Zenith Bank Ghana Limited. It includes understanding of Information and Communication Technology by customers. Respondents explained Information and Communication Technology (ICT) as the use of internet and electronic media to bank. Respondents were patrons of ICT products from Zenith Bank Ghana Limited although some customers were also operating accounts in other banks.

Another major finding is the awareness of the different ICT products offered by Zenith Bank Ghana Limited to customers namely ATM, SMS Banking, Internet Banking, Slip Free Banking and Visa Cards. However, most customers prefer ATM usage only, whiles significant proportion of respondents uses combination of these products. For instance, a customer would use SMS Banking to require instant account details whiles having ATM card for withdrawing of money. The result further shows that most customers have been using these E-products within the year 2010-2015.

Among the ICT products offered by Zenith Bank Ghana Limited, customers prefer ATM service relative to others. On a scale ranking of 5, customers ranked ATM with an average score of 3.8 being the preferred E-products, followed by Internet Banking (3.4), Slip Free (3.2), SMS Banking (2.5), and Visa Cards (2.2). The preference for ATM was due to the fact that ATM is 24-hour teller electronic terminals which give consumers the opportunity to bank at almost any time especially withdrawing of money. The other products often provide accounts information and details. The main reason for ATM preference is because of its efficiency and user friendly ability according to the study.

Customers mentioned several advantages for using E-products. The most dominant reasons were easy access to money and account information 24-hour and time saving for customers to carry out other duties. Others included no more long queues as associated with the traditional mode of banking; transactions are very fast and convenient.

Customer satisfaction was identified as the main factor. Customer satisfaction is a key to growth of the industry. Another major factor is competition from other banks. Increasing competition among banks to increase or retain their customer base is driving the banks to continue to adopt Information and Communication Technology (ICT). Competitive forces will progressively continue to be an important driver. As banks continue to adopt evolving and emerging technologies, they will seek to differentiate their products in order to retain their identity and remain competitive. Other factors identified are technological advancement and decongestion of the banking hall.

Another finding was the effectiveness of Information and Communication Technology (ICT). 90% of the respondents mentioned that they were highly satisfied with services offered by ICT products of the bank (See Table 4.10). Information and Communication Technology (ICT) products were very comfortable in usage, saves a lot of time and convenient. Averagely, a customer spends less than 5 minutes transacting business with the use of ICT products. The products have enough security features which prevent easy theft.

Notwithstanding the benefits associated with Information and Communication Technology (ICT), it has some challenges. The paramount among them is the network failure. In course of a transaction, the network could easily break down resulting in incomplete transaction. Others mentioned by respondents (13.30%) included limit on amount of cash withdrawn, wrong debits being made (4.40%) and increase in bank charges for the use of the ICT products and services (11.10%).

Customers proposed ways to address some of these challenges. Notable among them was customer education and marketing of ICT products (24.40%). They were of the view that if proper and enough education were done concerning ICT products in Zenith Bank Ghana Limited, it would attract a lot of customers. Other measures were, Zenith Bank Ghana Limited should have more ATM outlets, regular maintenance of ATM facilities, improve on network

connections, reduce Information and Communication Technology (ICT) platform charges, increase security features on ICT products and introduce prompt transaction data onto phones.

## RECOMMENDATIONS

Information and Communications Technology (ICT) Platforms at Zenith Bank Ghana Limited offers opportunities to customers to derive certain benefits from its usage. There were certain limitations in this study. Within the limitation of the study, the following recommendations are made:

1. Education and marketing of ICT products should be encouraged in the bank to attract more customers.
2. More ATM facilities should be placed at vantage locations within the city to reduce distance and time use in accessing the facility.
3. It is also recommended that they should reduce the charges on Information and Communication Technology (ICT) Platforms to lure more customers to patronize the products.
4. It is recommended that prompt transaction onto mobile phones should be continued to also entice more customers as in other banks.

## CONCLUSION

The study seek to examine the awareness of Information and Communication Technology banking among customers; to analyze the usage of Information and Communication Technology in banking and to identify the benefits of Information and Communication Technology in banking. Convenience sampling technique was employed by the study. Questionnaire was used to collect the data. Statistical package for social sciences (SPSS) was used to analyze the data collected. Descriptive statistics (percentages and frequencies) was used to make inferences from the data analyzed. The findings regarding the study revealed that majority of the respondents (90%) have heard of Information and Communication Technology (ICT) whiles 10% said they were not aware of any banking services called Information and Communication Technology (ICT). The result also reveals that 41.1% use only ATM cards, the most widely used ICT products within the banks for transactions, however, significant proportion of respondents (22.2%) also uses combinations of ICT products. Results again show that ninety (90%) of respondents believed that ICT products and services have a positive effect, the most prominent effect was customers having more time for other businesses and administrative works get reduced drastically. Base on this, the researchers however, believed that considerable education and marketing of Information and Communication Technology (ICT) products and services of the banks will attract more customers and provide customer satisfaction.

## REFERENCES

[1] Abor, J. (2004). Technological Innovations and Banking in Ghana: An evaluation of customers' perceptions. Accra, University of Ghana, Legon.

[2] Adams, A.N. & Lamptey, A.O. (2009). Customer perceived value in internet banking in Ghana. Masters Thesis, Lulea University of Technology, Sweden and University of Education, Winneba, Ghana.

[3] Adriana, C. (2006). Forms of electronic banking. Journal of internet banking, Vol. 16(6), Bank of Slovenia, Narodna

[4] Ainin, S., Lim C.H., & Wee, A. (2005). Prospect and Challenges of ICT in Malaysia. The Electronic Journal on Information Systems in Developing Countries. . 3:1, pp. 5-19.

[5] Aladwani, A. M. (2001). Online banking: a field study of drivers, development challenges and expectations. International Journal of Information and Management, 2 (1), 213–225.

[6] Balachandher K., G., Santha V., Norhazlin I., & Rajendra P., (2001). Electronic banking in Malaysia: A note on Evolution of Services and Consumer Reactions.

[7] Basel Committee on Banking Supervision (2001). Risk management principles for electronic banking, Bank for International Settlements

[8] Boateng R. (2006). Developing ICT capabilities in a Ghanaian Bank: Preliminary lessons, Journal of the internet banking and commerce, Vol.11 (2)

[9] Bradley, L., & Stewart, K. (2003). The diffusion of online banking. Journal of Marketing Management.10 (19), 1087–1109.

[10] BSP, (2006). Electronic banking consumer awareness program for internet products and services. Circular No. 542, Appendix C.

[11] CBK. (2008). Payment Systems in Kenya: Central Bank of Kenya annual financial report for the year 2008, Kenya.

[12] Cheng, T. C. E., (2006). Adoption of internet banking: An empirical study in Hong Kong." Decision Support Systems, vol. 42, pp. 1558-1572.

[13] Zenith Bank Ghana Limited (2014). Report of Technical Committee on Electronic Banking, Accra (http:/www.zenithbank.com.gh/onlinebanking).

[14] Chorofas, D. N. (1988). Electronic funds transfer. Butterworth‟s, London, UK.

[15] Claessens, J., Dem. V., De Cock, D., Preneel, B. & Vandewalle. J. (2002). On the security of today's online electronic banking systems. Computers & Security, Vol. 21:3:257-269.
[16] Daniel, E., & Storey, C. (1997). On-line banking: Strategic and management challenges pergamon. PII: 4-5 (S0024-63010007).
[17] Federal Trade Commission, FTC, (2006) FTC Facts for Consumers.
[18] Gikandi J. W., & Bloor, C. (2010). Adoption and effectiveness of electronic banking in Kenya: Electronic commerce research and applications. 9: 277–282 helpwithmybank.org/dictionary/index.html accessed on 30/3/2011
[19] http:/www.elearningnc.gov/about_elearning, (2015).
[20] http:/www.photius.com/rankings/2015/population
[21] http:/www.bacs.co.uk/bacs/corporate.aspx, (2015).
[22] http:/www.businesspundit.com/investing/banks-automated, (2015).
[23] Hughes, T. (2003). Marketing challenges in ICT: standalone or integrated? Journal of Marketing Management, 19:1067–1085.
[24] Hwang, J. J., Yeh, T. C., and Li, J. B. (2003). Securing on-line credit payment without disclosing privacy information. Computer Standards and Interfaces, 25: 119–129.
[25] Ibrahim, E.E., Joseph, M & Ibeh, K.I.N (2006). Customers" perception of electronic service delivery in the UK retail banking sector. International Journal of Bank Marketing, Vol. 24, No. 7, pp. 475-493.
[26] Kaleem, A & Ahmad, S. (2008). Bankers" Perceptions of Electronic Banking in Pakistan. Journal of Internet Banking and Commerce, Vol. 13, No.1.
[27] Kolodinsky, J., & Hogarth, J. M. (2001). The adoption of electronic banking technologies by American consumers. Consumer Interests Annual, 47, 3: 1–9.
[28] Kuzic, J., Fisher J. & Scollary, A. (2002). Electronic commerce benefits, challenges and success factors in the Australian banking and finance industry. ECIS June 6–8, Gdańsk, Poland.
[29] Liao, Z., & Cheung, M.T. (2002). Internet-based ICT and consumer attitudes: an empirical study. Information & Management 39: 283–295.
[30] Lockette, A. & Littler, D. (1997). The adoption of direct banking services. Journal of Marketing Management. 13:791-811
[31] Mavri, M & Ioannou, G. (2006).Consumers Perspectives on Online Banking Services. International Journal of Consumer Studies, Vol. 30 (6), pp.552–560.
[32] Mols, N. P. (2000). The internet and services marketing: The case of Danish retail banking. Internet Research, 10, 1:7–18.
[33] Nyangosi, R., Arora, J. S., & Sing, S. (2009). The evolution of ICT: a study of Indian and Kenyan technology awareness. International Journal of Electronic Finance 3, 2: 149–169.
[34] Riyadh A. N., Akter S. M., & Islam N. (2009) The Adoption of ICT in developing countries: A Theoretical Model for SMEs. International Review of Business Research Papers (6) 5, Pp.212-230.
[35] Rose, P. S. (1999). Commercial bank management, (4t) ed). Irwin/McGraw-Hill, Boston, USA.
[36] Ekow Essabra Mensah (2012). GT Bank leading the ICT platform: Business and Financial Times pp. 6-7
[37] Shih, B. & Fang, K. (2004). The use of decomposed theory of planned behaviour to study internet banking in Taiwan. Internet Research, 3(14), 213-223
[38] Simpson, J. (2002). The impact of the internet in banking: Observations and evidence from developed and emerging markets. Telematics and Informatics. 19, 4, 315– 330.
[39] Sohail, S. M. & Shanmugham, B.(2003). ICT and customer preferences in Malaysia: An empirical investigation. Information Sciences 150: 207–217.
[40] Thulani, D., Tofara, C & Langton, R. (2009). Adoption and Use of Internet Banking in Zimbabwe: An Exploratory Study. Journal of Internet Banking and Commerce, Vol. 14(1).