

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

**COLLEGE OF ART AND SOCIAL SCIENCES
SCHOOL OF BUSINESS**



**TOPIC: IMPACT OF INFORMATION AND COMMUNICATION
TECHNOLOGY ON THE PROFITABILITY OF BANKING INDUSTRY
(CASE STUDY OF BARCLAYS BANK GHANA LIMITED)**

BY

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**A THESIS SUBMITTED TO THE SCHOOL OF BUSINESS, KWAME
NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY IN**

**PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF**

**MASTER OF BUSINESS ADMINISTRATION
(BANKING AND FINANCE)**

JULY 2009

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DECLARATION

I hereby declare that this submission is my own work towards the MBA (Banking and Finance) and that to the best of my knowledge, it contains no material previously published by another person or material which has been accepted for the award of any degree of the University, except where due acknowledgment has been made in the text.

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Dedication

This dissertation is dedicated first to the dear Mum, Mrs Agnes Fiagbe and my sweet sister, Trudy Fiagbe whose contribution and moral support has made this a reality.

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Acknowledgements

I first of all want to give thanks to the Most High God for giving me strength to successfully complete this work.

Secondly, I want to thank my supervisor, Mr Kwasi Poku whose guidance, comments and directions has this dissertation possible.

Lastly, I would want to say a big thank you to my dad, Mr P.K Fiagbe for supporting me financially, morally and spiritually.



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ABSTRACT

The banking industry in Ghana has gone through changes as a result of the introduction of information technology (ICT). The Industry has introduced various new customer services and products using ICT. Information technology has tremendously stimulated expansion of the banking net works and range of services offered during recent years.

Traditionally, Banks have always sought media through which they sought media through which they would serve their clients more cost effectively as well as increase the utility effectively as well as increase the utility of their clientele. The main concern of banks has been to serve clients more. Conveniently, and in the process increase profits and gain competitive advantage.

ICT Technologies used in banks such as the use of automated teller machines, internet banking, telephone banking impacts positively on the income generated by the banks. This is as a result of reduction in cost of operations, income generated in the form of service charges from customers and banks. ICT has increased the efficiency and speed of banking operations.

Introduction of ICT has its own draw backs such as the intrusion of viruses in its software programmes of and security problems.

However, the benefit ICT over rides its draw backs.

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CHAPTER ONE

1.0 INTRODUCTION

The banking industry has gone through many changes as a result of the introduction of Information Communication Technology (ICT). The industry has introduced various new customer services and products using Information communications technology. In fact, the structure of the industry is continuously changing because of the rapid development of Information communications technology. Information technology has tremendously stimulated expansion of the banking networks and range of services offered during recent years.

With developments in Information communications technology, more banks introduced these services for their customers, making them standard activities. Technological progress has enabled deregulation of the banking sector, removing barriers in intrastate and interstate banking and branching, granting them more flexibility in terms of introducing new services, which predominantly took place in the 1980s and 1990s. Although every banking operation requires some Information communications technology applications, researches vary on the subject of the relationship between the level of employed hardware and software, and the value of the banking efficiency increase. All researchers agree on the importance of Information communications technology for the further developments of the banking industry, but some of them have found lack of proportionality between the increase in the scale of Information communications technology utilization and the increase in banks profitability (Thakor, 1999; Olazabal, 2002).

Information Technology developments affect operations of banking organizations in at least four different ways:

(1) Information Technology enables banks to start new depository services, such as call centers, ATMs, and Internet banking, which give more opportunities to achieve economies of scale, and fewer diseconomies, rather than the same depository services provided through traditional branching networks (Radecki, Wenninger, and Orlow, 1996). In similar way, some wholesale Information Technology-driven products, such as securitization, derivatives, and other off-balance activities are more efficiently provided by large banks, constituting their dominance in the markets of these products.

(2) Technological progress causes innovations in producing new banking services that are subject to greater scale economies or fewer diseconomies than the existing technologies, these innovations are particularly important for electronic payments and credit scoring services.

(3) Advances in Information Technology allow large banks to control investment risks more efficiently than small banks. Well equipped Information Technology credit risk departments of large banks are able to make riskier, but with highly-expected returns on investments, improve access to uninsured funding, and save on costly equity capital.

(4) Another advantage of the Information Technology progress may come from reduction of managerial diseconomies of scale. Information Technology advances improves monitoring and control within large banks better than within small banks. These technologies may make it easier for managers of large, multi-branch banks to monitor the behavior of their staff, reducing agency problems. Some research based on data from the early and mid-1990s suggest existence of substantial scale efficiency gains from larger sizes and that these economies may have continued increasing during the next years (Berger and Mester, 1997, and Stiroh, 2000). Developments in Information Technology may also facilitate improvements of revenue efficiencies. Efficient information and telecommunication devices allowed banks to facilitate mergers and acquisitions,

extend their office network, and broaden the range of services. As a result, over the period of 1992-2001 the Ghanaian banking sector experienced a significant concentration of assets; it means the share of top 10 banks grew from 24% in 1992 to 40% in 2001. Additionally Information Technology developments helped to increase efficiency of banks, improving profitability of their assets (Kozak and Kowalski, 2005). Another study has shown improvements of banks profits resulted from the increase of the number of operations due to utilization of modern technological banking equipment. Bigger capacities of information and telecommunication systems laid foundation for new services or quality improvement of existing one, increasing revenues at the same time. Information Technology contributed to the growth of revenue by improving the risk assessment procedures applied in lending and investment processes. Banks benefited from lower potential losses and higher rates of returns on investments (Berger, Humphrey, and Pulley 1996). This study is therefore designed to find out the impact of the progress in information technology on the financial performance of the banking industry using Barclays Bank Ghana limited as case study.

1.1 STATEMENT OF PROBLEM

Information communications technology developments have had strong influence on the activities of the banking sector (ECB, 1991). For example the banks build up sophisticated databases containing information about their customers', and through data mining they are then able to market their products more efficiently. Technology also allows banks to apply credit – scoring techniques to consumer credits, mortgages or credit cards automating part of the process. Also through data mining they are able to target their commercial efforts more precisely; knowing which range of products individuals' consumers might be interested in buying

As a result of Information communications technology developments, all banking services, as electronic payments, loans, deposits, or securities have become heavily dependable on information and telecommunication technology. This is the main reason why banks are the biggest users of Information communications technology equipment. Due to the complexity of banking services, every opportunity to speed up their performance or to make them more accessible for customers is very well welcomed by banks. The tendencies above have produced changes in the structure of the bank income. As a result of increased competition that has lowered margins in lending operations (the banks' traditional business) banks have diversified their sources of income and rely increasingly on income from fees services rather than interest rates spreads. Fees charged for services include typical banking activities like payment transactions', safe custody and account administration. These activities are, in general, less volatile than fees and commissions charged on activities which are affected by economic and cyclical developments. The overall, changes in the structure of the bank income are indicators of changes in the range and composition of activities undertaken by banks.

The rapid developments of information technology has made some banking tasks more efficient and cheaper, technological investments are taking a large share of the banks resources; currently apart from personnel cost, technology is usually the biggest item in the budgets of a bank, and a fastest growing one.

However with improvements of the quality of services, the important question that appears is; can this process provide high economic value for banks? Unfortunately not every increase in the customers' satisfaction transfers into the higher bank profits, especially in the case of very expensive investments in Information communications technology and telecommunication

equipment. This research is therefore designed to find out the impact of Information communications technology in the financial performance of banks using the Barclays bank Ghana limited as a case study.

1.2 OBJECTIVES OF THE STUDY

The research aims to

- 1) Find out the impact of Information communications technology on the income structure of Barclays bank Ghana limited
- 2) Find out which Information communications technology Barclays bank Ghana limited is using
- 3) Find out how efficient Barclays banking operations have become as a results of introduction and use of modern I.C.T
- 4) Make recommendations based on the findings of the study

1.3 SIGNIFICANCE AND JUSTIFICATION OF THE RESEARCH

Technological investments are taking a large share of the banks resources; currently apart from personnel cost, technology is usually the biggest item in the budgets of a bank, and a fastest growing one, hence there is the need to ensure that such huge investments in Information communications technology yield the needed returns for banks. It is the expectation of the researcher that findings from the research would enable banks to understand how investments in technology should be structured and what economic results the banks should expect.

1.4 RESEARCH QUESTIONS

- 1) What is the effect of Information communications technology on the income structure of the bank?
- 2) Which Information communications technology technologies are banks using to improve their efficiency?
- 3) How has Information communications technology improved the efficiency of the bank?
- 4) What measures can be used to help banks increase income through the use of Information communications technology

1.5 THE SCOPE OF THE STUDY

The study was limited to staff and management of the high street branch (Head Office) of Barclays Bank Ghana Limited. This was not done without reason; it is where information on the returns (income) from all the branches as well as all information on Information communications technology can be assessed; besides it is where major decisions on the banks performance are taken.

1.6 THE LIMITATIONS OF STUDY

The study had the following limitations:

- 1) The main limitation of the study is that, the findings are made on a sample size of two hundred (200) out a large number of staff. This represents only a small percent of the staff. This is far below what is recommended by Sidney Webb, Beatrice Webb and Duverger (in Abotchie 1988). According to Müller and Schussier (1961:341-342)" no research study would ever be made if its

findings could not be imaginatively extrapolated beyond the limited universe from which the sample has been derived". But considering the above limitations imposed by the sample size it is important that while such speculations are justified and desirable, their tentative nature is recognized and understood. This limitation was minimized by effectively sampling randomly so that the two hundred individuals selected gave a true representation of the situation pertaining.

2) The time period within which the study was conducted was woefully inadequate, certain vital information which could have been useful to the study were not gotten because of the limited time frame. This was managed using the time given effectively to visit the banks, libraries and the internet so as to exhaust any available information pertaining to the topic.

3) The bank was reluctant to disclose actual information on their income structure. This was solved by visiting the bank regularly until the information sought for was given.

4) As a result of late payment of thesis grant by the government of Ghana, the resources available to cover transport cost, for computer services; data analysis, printing cost were seriously limited. This was managed by acquiring a personal loan from the bank to enable cover the above mentioned costs.

1.7 ORGANIZATION OF THE CHAPTERS

This research study is composed of the following five chapters; Chapter one is an introductory chapter. It outlines the background to the study, describes the statement of the problem and states the objectives of the study. Definitions of key concepts used in this study are also outlined. Further, the significances and limitation of the study are also stated in this chapter.

Chapter two provides a tale of banking in Ghana, history of Barclays bank and a review of current and relevant literature of study. Chapter three includes the discussion of the methodology used to implement the research design. It includes a brief discussion of the settings and materials used to develop the study. The rational for the various research designs are also outlined in this chapter. Chapter four outlines the presentation of data and analysis.

Finally, chapter five discusses the summary of findings, recommendations and conclusions.

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CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter presents the review of literature. The review of the literature was discussed as follows: the banking industry in Ghana, the history of Barclays bank Ghana limited; its Information communications technology developments, technology and banking, the effect of technological innovation on the banking industry, effect of technology on the efficiency of the banking sector, the summary of the chapter.

2.1 THE BANKING INDUSTRY IN GHANA

Ghana is a small open economy with a steady improvement in Real Gross Domestic Product (GDP) from 3.7% in 2000 to 5.8% in 2004. As an agrarian economy, the agricultural sector contributed about 5.5% and the services sector which includes the financial and banking services also contributed 4.8% to GDP in 2004. Average inflation over the same period dropped from 40.5% to 11.8% but rose to 16.3% in 2005. Averagely, the cedi (currency of Ghana) which depreciated against the US dollar by 2.2% in 2004 is relatively stable thereafter. The lending rate also fell from 46% in 2000 to 28.8% in 2004 (Ghana Banking Survey, 2005). In 2005 the Bank of Ghana statistical information revealed further fall in the lending rate to 26% (www.bog.gov.gh). The banking sector also experienced increasing competition between 2000 and 2004 (Ghana Banking Survey, 2005). As at 2002 formal banking reached only about 5% of the total population of about 20 million people. However, bank activities covered almost every part of the

country. About 35% of bank branches are concentrated in the Greater Accra Region which is the region where the capital, Accra is located though the region represents only 13% of the total population. Also 50% of all bank branches in other regions belong to the Ghana Commercial Bank, which is state owned (Buchs and Mathisen, 2005). The Ghana Banking Survey, 2005 reported that between 2000 and 2004 the total deposit mobilized increased by 176% from 7.6 trillion cedis to 21 trillion cedis (Cedi is the official Ghanaian currency).

The Ghana Banking Survey 2005 revealed that even though agriculture is the backbone of the economy it received decreasing funding from Commercial banks from 11% in 2002 to 7% in 2004. The financial Sector Assessment Program (FSAP) introduced in 2001 and updated in 2003, helped to remove legislative and administrative inefficiencies in the banking sector coupled with the financial sector adjustment programme (FINSAP) which led to tremendous growth and competition in the banking industry (Ministry of Finance Report, 2003 & Ghana Banking survey, 2005). According to Buchs and Mathisen (2005) eighteen banks were operating in 2004 with nine commercial banks. Ghana Commercial Bank contributed 25% of the total assets in the banking industry.

We have three main categories of banks in Ghana. They are commercial, development and merchant banks. The commercial banks engage in traditional banking businesses with concentration on universal retail services while merchant banks engage in corporate banking services and the development banks focusing on medium to long term finances. Money transfer activities are common in Ghana with both formal and informal operators. The formal money transfer activities include Western Union (mainly operated by Agriculture Development Bank) and Moneygram (operated by SG-SSB Ltd). However, many banks serve as receiving points for foreign remittances to Ghana. There are many unlicensed informal money transfer operators who

operate from small shops or businesses but they are now being asked to register to obtain operating license after the September 11, 2001 terrorist attack on the US (Higazi, 2005).

2.2.0 BARCLAYS' STATE OF THE ART TECHNOLOGY

Bank customers today demand ever increasing levels of convenience and the more they get, the more they want. They expect 7 days a week, 24 hour a day service, full service. Banks do not only use these technologies to serve their customers efficiently but also to maximize profits. Barclays Ghana limited leads the industry in technology. Technology is therefore a competitive tool which banks use to serve their customers effectively so as to maximize profits. Needless no matter how advanced technology credit cards would not have become so popular if they had not fulfilled an underlying customer and profit needs of banks. The most prominent technology used includes ORBIT, business master, Barclays cash, and swift.

2.2.1 ORBIT

Barclays used a couple of software in their operations before introduction of the ORBIT in 1997. The first was termed BIAS/BISS, meaning Barclays' international accounting system/ Barclays International Saving Scheme in 1987. This was followed by BRAINS meaning Barclays' retail accounting information system in 1994. The term ORBIT refers to overseas Retail Banking Information Technology. It is a Barclay's state-of-the-art service for real-time online banking hall service around the country through a satellite orbiting the earth over the Indianan ocean. The nerve center for the central processing was Manchester, United Kingdom before being shifted to Zimbabwe a couple of years later.

The overall impact of this technology is that, the bank is able to serve customers nationwide because the ORBIT has but the bank on integrated network wide area network. Indeed the

ORBIT allows customers to carry out their banking transactions such as lodgments and withdrawals at any branch in the country irrespective of where the account was actually maintained. This means that customers are bank on nation wide basis rather than with a particular branch

2.2.2 BUSINESS MASTER

Barclays' technological edge in service delivery goes far beyond ORBIT. The business master allows customers to access their accounts from their homes or offices through personal computers. Like the ORBIT this service has not been fully replicated by the bank in Ghana. Business master allows customers to actually carry out their transactions apart from getting up to date information on their accounts without moving from their offices or homes. Irrespective of where customers' accounts are domiciled in the country transactions can be performed through the Business Master Service. In summary, it is a cash management technology.

2.2.3 BARCLAYS CASH (AUTOMATED TELLER MACHINES)

Automated teller machines (ATM) known as Barclays cash allows customers to access their money through a plastic card, 24 hours a day, and seven days a week. With ATM customers do not have to come to the counter to perform any transaction. Barclays cash enables cash from any dispenser. Customers' security is assured through the use of personal identification numbers. Barclays cash provides one with other services which include withdrawals of cash, checking of balance on ones account, request for statements, request for a cheque book, depositing of cheques, transferring funds and bill payment.

2.2.4 CASH PASSPORT

Barclay's cash passport is another essential facility for travelers to take along abroad. It can be used to withdraw spending money in local currency from any Visa cash machine at any time of the day or night. A personal identification number (PIN) offers protection and it is required before any transactions are made. All a customer does is to deposit money onto his/her card worldwide from one of the 870,000 Visa cash machines in 140 countries around the world before travelling. As indicated earlier the funds can be assessed in local currency around the world. Information on this Visa card can be found at www.cashpassport.com

2.2.5 TELEPHONE BANKING

This is an automated service, providing a hassle-free approach to banking anywhere. A subscriber will be able to get day-to-day banking from the comfort and convenience of their office or home. A personal identification is given to the subscriber who has to call a telephone number, key in his or her account number and accesses a general menu. The menu offers a helpline, account information additional banking services and funds transfer. Services provided include account history, cheque verification, funds transfer, special requests and change of PIN. A monthly charge of one Ghana cedi is charged. Monthly charges are made for all the above services as well.

2.2.6 THE EFFECT OF TECHNOLOGICAL INNOVATION ON THE BANKING INDUSTRY

Intensive transformation of the Ghanaian banking sector started in the first half of the 1990's and was intensified during the decade of the 2000s. Developments in Information communication

technology and deregulation of interstate and intrastate banking and branching effected with a strong concentration of the Ghanaian banking industry. The process resulted in the reduction of the number of banks. However, at the same time, banking restructuring has broadened the range of banking services and increased the number of branches, making banking networks nation- and even worldwide . Additionally, the period of Information Technology developments and banking deregulation was associated with serious restructuring of the Ghanaian economy. National and international transfer of securities, goods, and services in such environment have created demand for currency, deposits, loans, and other new services by international financial institutions, contributing to development of the range of banking services and new channels of their distribution. New Information Technology--related services can be distinguished into four main categories (Berger, 2003): Internet banking, Electronic payments, Security investments, Information exchanges.

a) Internet banking--Most of the commercial banks allow customers to perform transactions through the web site. They may range from checking the account balance through transferring funds to loan applications. In the United States of America as at the end of 2000, 37.3 percent of national banks provided transactional web sites, and another 27.7 percent of these institutions offered informational websites (Furst, Lang, and Nicole, 2000). The level of Internet services differs by the size of banks. The largest banks, with assets of the value exceeding US \$10 billion, are fully equipped in transactional web sites, while only 20 percent of the smallest banks of the asset value below US \$100 million dollars provide such websites. Rather small number of banks, called Internet-only banks, offers services exclusively through interactive web sites with access to the ATM network.

Split opinions exist about efficiency of such banks. In March 2002, FDIC reported operations of 20 Internet-only banks in the USA. However, around twelve of such banks have been recently dissolved due to their poor performance (Berger, Demsetz, and Strahan, 1999). Some studies also indicate very inefficient performance of small newly established Internet-only institutions with less than three-year experience. The research on the novo banks showed that completely new traditional banks achieved much better financial results than Internet-only banks (DeYoung 2002).

b) Electronic payments-- the main new forms of electronic payment are: smart cards and software-based products making payment over the Internet (Arbussa Reixach, 2001). They allow obtaining cost savings due to less intensive work operations and paper documentations. Increasing popularity of electronic payments caused reduction of the share of check payments in the total number of payment transactions from 85.8 percent in 1990 to 66.9 percent in 2002, with prediction of 49.2 percent in 2005 (US Census Bureau). At the same time the share of card payments 14.4 percent to 30.7 percent, and the number of credit card transactions has grown from 10.4 billion to 21.2 billion, with prediction of 24.4 billion for 2005. Additionally the number of credit cards transactions has risen extremely rapidly from 0.3 billion to 13.3 billion, with predicted growth to 22.7 billion in 2005. These numbers indicate the growing importance of the payment services made with debit cards, primary used at ATMs and POS (Point of Sales). To serve a larger group of customers, banks are constantly shifting their location out of branches toward supermarkets and other commercial facilities. According to American Bankers Association the share of off-branch ATMs has grown from 25.4 percent in 1994 to 64.2 percent in 2003 (Table 1). ABA states that the total number of ATM transactions grew from 7.7 billion in 1993 to 10.8 billion in 2003. Among the United States of America banks, there are four of

them, which have developed very extensive ATM networks: Bank of America (14,200 ATMs), American Express (7,100), U.S. Bancorp (6,663), and Wells Fargo (6,353). Another element of the electronic payment system is an automated clearing house (ACH). The ACH is the paperless-entry facility that acts on behalf of local, regional, or national association of commercial banks to make direct deposits and pre-authorized payments (Mote and Wilcox, 2002). The first ACH was established in California in 1972. However, the ACH payments processed by the Federal Reserve have more than quadrupled from 915 million in 1990 to 3.8 billion in 2000.

c) Security investments- the Information Technology progress and deregulation of the banking industry were foundations for new, very sophisticated investment services, among them derivative securities. The character of these securities is based on the idea of deriving the value from another underlying security or asset, such as: foreign currencies, interest rates, equities, commodities, and credits. The most common examples of derivative securities are: options, futures, swaps, and structured notes. Banks have engaged in derivatives markets very substantially in recent years. The total amount of these contracts at the U.S. banks grew from US \$8,765 billion in 1992 to US \$71,366 billion in 2003; it means more than eight times bigger. Additionally, in 2003 for all commercial banks the total value of derivatives was 9.73 times bigger than the value of average assets running huge number of records may achieve economy of scale.

d) Information Exchanges – They are institutions used by banks and other creditors to share data relevant to creditworthiness of loan applicants. They collect available data from various financial institutions, trade creditors and credit scores. They may operate as private or public entities. Information exchanges are extremely Information Technology driven organizations and running huge number of records may achieve economy of scale.

For makers of computers, storage devices and high-speed networks, that is grim news. The fact is that no other sector of the global economy drives capital spending on Information technology (IT) as much as the financial-services business does. Until that recovers, the Information Technology slump will continue.

By and large, financial-services firms get good returns from Information Technology. In the hoary debate over whether Information Technology improves productivity, even naysayers agree that, at least in financial services, it demonstrably does so. That has been particularly true for investment banks, where program trading has been moving markets since the mid-1980s. So effective were the buy/sell software suites developed by a handful of American stock broking firms that Japanese authorities hurried out new regulations to prevent the foreigners from cleaning up. Since then, technology for speeding access to share prices, trading volumes or even the latest market-shifting rumours has contributed handsomely to Wall Street profits.

But the three-year economic downturn has cooled even Wall Street's ardour for fancy new Information Technology gear. Retail and investment banks, as well as insurers, have been forced to take stock. Across the board, few financial-services firms have been spending on Information Technology projects that do not guarantee short-term results. The problem is that most Information Technology projects are lengthy affairs and notoriously "back-loaded", delivering their pay-off only after a number of years in use. "The field of dreams has been folded up and taken away," observes Mark Sievwright of TowerGroup, a Reuter's subsidiary in Needham, Massachusetts. Still, Mr Sievwright notes that financial-services firms continue to spend heavily on technology. He expects to see worldwide spending top \$337 billion in 2003, a 2.3%

increase over 2002. The increase is led by a 2.8% rise in America, which overshadows an expected 1.1% drop in Europe (mostly in Germany).

For the institutions, penny-pinching is paying off. Once, investment banks had pricey workstations from the likes of Sun, Hewlett-Packard and IBM on every desk. These used proprietary versions of the UNIX operating system. Most of these have since been replaced by scrappy Intel-based PCs running the free Linux operating system. The same goes for the proprietary servers, which have likewise been replaced by Intel-based machines costing a fifth as much to own. In addition, financial-services firms have become more aggressive about outsourcing parts—in some cases, all—of their Information Technology operations. Tower Group has tracked 20 such deals worth at least \$1 billion a piece over the past 12 months. The biggest was a \$4.5 billion deal signed by Bank of America to outsource just the network part of its operations. Add the trend towards moving costly software development projects offshore, first to India and now to China as well, and programming costs can be reduced by nearly two-thirds.

But such belt-tightening can only go so far. Firms have to maintain the systems they have already deployed. Indeed, of Tower Group's forecast \$337 billion, nearly \$250 billion will go on maintenance and upgrades of existing equipment, such as the mainframe computers at the core of many large systems. While that leaves some \$88 billion for new projects, financial-services firms have a number of urgent needs.

Many of these needs are similar around the globe. For instance, securities firms need to carry on spending so their “quants” (quantitative research analysts) can concoct yet cleverer algorithms for beating the market. Some firms are also looking at new computing concepts, such as grid and utility computing, which promise to make better use of existing resources. But most of what they

will do falls into the category of make-do-and-mend. The continuing organizational shifts following mergers and rationalization measures, for instance, create horrendous systems issues that have to be addressed immediately.

2.3 BANKING AND TECHNOLOGY

According to Rose and Kolari (1995) the operations of the commercial banks is one of the areas where technology is used most. To them, the operations is responsible for managing and protecting the physical facilities owned and used by the bank for the daily routine book keeping for thousands of customers credit and deposit.

2.4 .0 DIFFERENT FORMS OF ELECTRONIC BANKING

The terms 'PC banking', 'online banking', 'Internet banking', 'Telephone banking' or 'mobile banking' refer to a number of ways in which customers can access their banks without having to be physically present at the bank branch. E-banking may be understood as term that covers all these ways of banking business electronically.

2.4.1 TELE-BANKING

Tele-banking service is provided by phone. To access an account, it is required to dial a particular telephone number and there are several options of services. Options includes: checking account balance, funds transfer between current, savings and credit card accounts, bill payments, stock exchange transaction, receive statement via fax, loan payment information.

2.4.2 PC BANKING

The increasing awareness of the importance of literacy of computer has resulted in increasing use of personal computers through the entire world. Furthermore, incredible plummet of cost of microprocessor has accelerated the use of computer. The term 'PC banking' is used for banking business transacted from a customer's PC. Using the PC banking or home banking now customers can use their personal computers at home or at their office to access their accounts for transactions by subscribing to and dialing into the banks' Intranet proprietary software system using password.

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2.5 TYPES OF PC BANKING

Basically, there are two types of PC banking. The first type is online banking, in which bank transactions are conducted within closed networks. The customer needs specialized software provided by his bank. The second type is Internet banking, which German banks have been offering since the mid-nineties, although the only product they were offering at the time was information. Unlike closed networks, Internet banking permits the customer to conduct transactions from any terminal with access to the Internet.

2.5.1 INTERNET BANKING

Internet banking would free both bankers and customers of the need for proprietary software to carry on with their online banking transactions. Customer behavior is changing rapidly. Now the financial service is characterized by individuality, independence of time and place and flexibility. These facts represent huge challenges for the financial service providers. So the Internet is now

considered to be a 'strategic weapon' for them to satisfy the ever-changing customers' demand and innovative business needs.

Adequate legal framework and maximum security are the two essential factors for Internet banking. The comprehensive security infrastructure includes layers of security from the network to the browser, including sophisticated encryption that protects customers' from intrusion when they access the bank over the public network.

2.5.2 MOBILE BANKING

Actually mobile banking is a variation of Internet banking. Mobile banking is a good example of how the lines between the various forms of e-banking are becoming gradually blurred. Due to the new transmission technologies such as WAP (Wireless Application Protocol), portable terminal like mobile phones, personal digital assistant (PDA) or small hand-held PCs are providing bank customers with access to the Internet and thus paving the way to Internet banking. It assures immense flexibility and makes the financial services independent of time and place. However, the use of mobile banking is still in a nascent state. The slower transmission speed of the WAP standard and the limited amount of information available are just two of the factors inhibiting the use of those.

2.6 BENEFITS OF ELECTRONIC BANKING

Electronic banking is comprised of many different types of services. Most banks will offer at least some types of electronic banking, most of these services are designed to make the consumer's life easier.

2.6.1 Online Banking

One type of service offered through electronic banking is online banking. By using online banking a consumer is able to keep track of their accounts more easily, and in many cases they are able to actually see what is happening to their account in real-time. This type of electronic banking has caused some controversy due to consumer's concerns for the privacy of their information; however it has been proven to be quite safe when consumers follow some general guidelines. Some of these guidelines include never tell anyone your password or sign-on for your bank site, and making sure to change your password often and use difficult to guess passwords using, at a minimum, letters and numbers.

2.6.2 Online Bill Pay

Online bill pay is a complimentary product to online banking and offers consumers the opportunity to pay their bills without having to actually send out a bill in an envelope. By adding the names and addresses of the companies that are billing them, customers are able to pay their bills when they want with a few clicks, certain companies will receive payment in as little as 24 hours. Many consumers have wondered about the safety of this type of electronic banking as well, however banks contend that it is safer than paying your bills by sending a check in the mail because it is more difficult to intercept and the consumer's account number and other information is not included on the bill pay check that is sent out, if a physical check even needs to be sent.



2.6.3 Online Transfers

Many banks that offer online banking will also offer online transfers. This service allows customers to transfer money between their accounts without having to go to the bank or call a branch. For example, with this service a person can look at their accounts through their online banking website, notice that their checking account is getting low, and transfer money from their savings account to cover any outstanding checks.

2.6.4 Debit Cards

Debit cards are a very popular form of electronic banking. They allow the consumer to pay for purchases either using their pin number or by using their debit card like a credit card (if their bank offers this service) instead of writing a check. This service is also convenient because with many banks, the charges to a customer's debit card will be shown on their online banking screen almost immediately. This allows consumers to keep track of their finances more easily.

CHAPTER THREE:

METHODOLOGY AND ORGANIZATION PROFILE

3.0 INTRODUCTION

This chapter describes the different research methods used and explains the chosen methods. It further describes the data collection methods and analysis approach. Furthermore this chapter describes the chosen sampling techniques. In addition, the issue of reliability and validity of the presented study is discussed.

3.1 CASE STUDY

The research project is a case study. Several writers have come up with different definitions of a case study. Jackson (2003) notes that like other research concepts; a case study is difficult to define accurately. However, Bassey (1999:26) sees it as a “generic term for the investigation of an individual group or phenomenon”. It involves gathering data on each individual case from a wide range of sources. This method is advantageous because it gives a detailed picture of an individual or group and may form a basis for new ideas and future research. According to Cohen and Manion (1994:106), “a case study researcher observes and investigates the characteristics of an individual unit”. Stake (1995: xi) describes a case study as, “the study of the particularity and complexity of a single case coming to understand its activity within important circumstances”. A case study should also be seen as an integrated system which has some boundaries and working parts. It is a phenomenon of a sort which occurs in a bounded context which could be graphically illustrated as a circle with a heart in the centre (Jackson, 2003).

Case study researches however, have a number of limitations, and the following, drawing on Anderson and Arsenault (1998), are some of them: Many researchers criticize it for its lack of reliability in the sense that another researcher may come to a different conclusion on the same study. One cannot generalize on the basis of a single case. According to Bell (1993), researchers who use the case study method find it very difficult to cross check information and there is always the danger of distortion. Notwithstanding these limitations, the choice of the study area was not done without reason: the sizes of the population, transportation and secretarial cost as well as time are seriously limited.

3.2 SAMPLING

Sampling involves the selection of a research site, a case or unit. Maxwell (as cited in Kajinga, 2006:27) defines sampling as “decisions about where to conduct the research and whom to involve, an essential part of the research process”, and adds that sampling “usually involves people and settings as well as events and processes”. Similarly, Peil (1982) asserts that sampling is the selection of a part to represent the whole.

3.3 SAMPLE SIZE

A sample size of two hundred (200) was chosen for this study from the total number of staff. The question of how large a sample size should be to make it representative has been debated upon by many researchers. (Duverger in Abotchie 1988) has stated that “No sample size is exactly representative”. This suggests that a sample size of 10 percent of any population universe would

ensure some level of representation. This has been contested by Beatrice Sidney and the Webb Sidney in (Abotchie 1988). They contend that, the crucial factor is ensuring that the population to be dealt with is rigidly defined and every unit given an equal chance of being included. Once this has been taken care of they consider sample size of five percent of the population will suffice. Alreck and Settle (1985) have also found that there is a direct relationship between sample size and reliability. Stevens (2002) agreed that most studies have recommended minimum sample sizes of 200 to obtain accurate results in maximum likelihood confirmatory factor analysis (CFA). The chosen sample size of two hundred (200) for this study limited to the (Greater Accra region) falls short of what is recommended by Duverger, and Beatrice Sidney and Webb Sidney in Abotchie and Stevens. This was not done without reason; resources for transport cost, printing cost, and computer services were seriously limited.

3.4 SAMPLING TECHNIQUES

In view of the different classes of respondents and the kind of differing questions that need to be answered to achieve the objectives of this study, the study made a combined use of probability sampling technique of simple random sampling and a non-probability technique of purposive sampling. Simple random sampling involves selecting a unit from a population universe by a random method to give each unit in the universe an equal chance or probability of being included or excluded in the final sample.

This method was chosen because it is less time consuming relative to other probability sampling technique (Forcese and Richer 1993). This method was also chosen because it is flexible. Besides, According to Patton (1980), simple random sampling is an appropriate strategy when

one wants to generalize from the sample studied to some large population. Through simple random sampling there is increased likelihood that the data collected are representative of the whole population.

Purposive sampling was adopted in the selection of the heads of the various departments within the bank. This involves selecting units from the population universe who in the researchers view can provide answers to his/her research question. Both (Twumasi 1986:23) and (Kumekpor 1999: 125) maintain that in adhering to the objectives of the study the researcher selects units within the population universe who can answer the research questions, that is “the unit of analysis must be appropriate to the problem being investigated” (Kumekpor 1999:53).

3.5 INSTRUMENTATION

The study made use of both primary and secondary data. Structured interviews, as well as observation were used as the main tool to collect the primary data for the study. Secondary data were also gathered and used, for instance, the history of the bank and their financial statements before and after the introduction of some Information communications technology, and other useful literatures were derived from the banks published financial reports books in libraries, reports, articles and the internet, etc. In order to achieve the objectives of the study, the values of the primary data were complemented with the secondary information for their consistency and accuracy.

3.6.0 DATA COLLECTION PROCEDURE

Structured interviews and questionnaires were used to collect empirical data for this research in order to identify the impact of Information communications technology in the financial performance of the banking industry using the Barclays Bank of Ghana limited as a case study.

The aim of research is to produce, explore and identify the new information, scattered in the field, in front of the researcher, but may not have been recognized and identified before (Aase 1997). Moreover, Aase contends that production of data and information is a never-ending process. It is because; the inexhaustible social interaction every minute produces events and new information in the society. According to Kitchen and Tate(2005), in addition to contributing to knowledge, a piece of research contributes to policy issues and at the very least makes clear to the groups being researched or associated agencies that there might be a need for a greater understanding of an issue. Similarly Marshall and Rossman (1995 P.78), outline five reasons for undertaking a study, viz exploration, explanation, description, understanding and prediction. There are various methods of conducting research. The main qualitative research methods this study employed included observation, conversation and structured interview.

3.6.1. VALIDITY

In order to reduce the possibility of generally incorrect answers, attention needed to be paid to validity and reliability Saunders et al 2003,

Validity is concerned with whether the findings are really about what they appear to be about Saunders (ibid) validity is defined as the extent to which data collection method(s) actually

measured what they intended to measure. Yin (1994: 85) states “no single source has a complete advantage over all others” The different sources are highly complementary and a good case study should use as many sources as possible. The validity of a scientific study increases by using various sources of evidence Yin (ibid). The following steps were taken to ensure the validity of the research.

- 1) The needed data was collected in the format of the structured questionnaire that had been designed on the literature related to the impact of Information communication technology in the financial performance of the banking industry.
- 2) The questionnaires were pre tested. A pilot test was conducted with the questionnaire sent to the selected offices.

3.6.2 PILOT INTERVIEW

When doing research, it is highly recommended that the researcher pilots the interview schedule before using it to interview the participants. This is crucial because the researcher needs to know whether it takes too long to complete, and whether the directions and items are clear (McMillan & Schumacher, 2001). The interview schedules developed were piloted with some staff of the bank, which was not part of my sample. This was necessary for me to make adjustments to the questions that were not clear. The pilot interview gave rise to a revision of the questions.

3.7 DATA ANALYSIS

The data was edited after the field work, firstly for omissions, accuracy and consistency to prevent the continuance of errors due to misunderstanding and negligence and secondly for completeness, legibility, clarity, consistency and uniformity to prepare them for the coding process. The questionnaires were then coded. Similar responses were grouped and assigned codes. Before the coding, a coding scheme was prepared. Qualitative and quantitative data analysis methods were employed in analyzing data elicited from the staff of the bank. Excel was used as a statistical to analyze information from respondents. Simple frequency tables and cross tabulations were used for the analysis. The choice of excel to analysis information from respondents stems from the quantitative nature of the data.

Qualitative data analysis method was used for observations. Since the qualitative data collection tools like observation and conversation were employed, which brought to light a number of varied and complex information and have the tendency of confusing the researcher, field notes were actively recorded during and immediately after visits to locations in the field to cover events and activities observed, information obtained, important remarks and statements as well as my thoughts and reflections while on the field. The field notes were meticulously structured to suit the objectives of the research in order to enhance easy analysis.

3.8 ORGANIZATION PROFILE AND HISTORY OF BARCLAYS BANK GHANA LIMITED

The first Barclays bank Ghana was opened in Accra on 14th February, 1917. This was when the colonial bank of which Barclays bank is a successor took this initiative. A charter issued under the Royal Seal of King William IV of England of June 1st 1936 formally brought the colonial bank into being. It became an established policy for the bank to cultivate trade relations between England, the colonies and the Dominions. In 1916, when the bank was permitted to operate through the whole British Empire, it decided to extend its branch system to West Africa. By an Act of parliament on August 7 1925 the colonial bank became Barclays bank (dominion colonial over seas); and then in 1954 Barclays bank D.C.O.

A new chapter history opened on January 1st 1970 when Barclays bank of Ghana limited was incorporated in Ghana as a new bank to take over all the assets and liabilities of Barclays bank D.C.O. in accordance with the investment policy decree of July one 1976 the government of Ghana acquired 40% of the shares in the bank and Barclays PLC London owned 60%. This is the two main share holders of Barclays bank. The bank is subsidiary of Barclays bank PLC, bank incorporated in UK. In 1998 the government of Ghana sold 30% of issued shares held by them to Barclays bank PLC. This reduced the government holding in the bank to 10%. With Barclays bank PLC having 90% issued shares of the bank. However, in 2003 the government of Ghana sold its last 10% shares to Barclays bank PLC.

The composition of its customers is as follows: Companies 24 %, Small business 28 % Individuals 48%. Barclays bank Ghana currently has a net work of 37 braches and seven prestige centers through out the country linked by satellite technology and all are entirely under the

control of Ghanaian managers. This ensures that up to date information is available on customers' accounts within seconds of data being entered on computer systems. Thus a customer can bank with any other branch and not be restricted to the branch at which the accounts are domiciled.

The following is the list of branches and their location:

Branch	Location
High street	Accra
Makola	Accra
Knutsford Avenue	Accra
Kwame Nkrumah circle	Accra
Achimota	Accra
University of Ghana	Accra
Osu	Accra
Kanashie	Accra
Tema fishing Harbour	Tema
Tema Main Branch	Tema
Koforiduia	Koforiduia

Ho	Ho
Hohoe	Hohoe
Takoradi High street	Takoradi
Takoradi Liberation Road	Takoradi
Cape Coast	Cape coast
Tarkwa	Tarkwa
Dunkwa	Dunkwa
Sunyani	Sunyani
Kumasi Prempeh II street	Kumasi
Kejetia	Kumasi
Tamale	Tamale
Abeka	Accra
Nima	Accra
Maamobi	Accra
Motorway	Accra
Legon main	Accra

Accra Mall	Accra
A & C Shopping Mall	Accra
North Kanashie	Accra
Atico	Accra
Kasoa	Kasoa
Madina	Accra
Adenta	Accra
Techiman	Techiman
Spintex Road	Accra
Adum	Kumasi

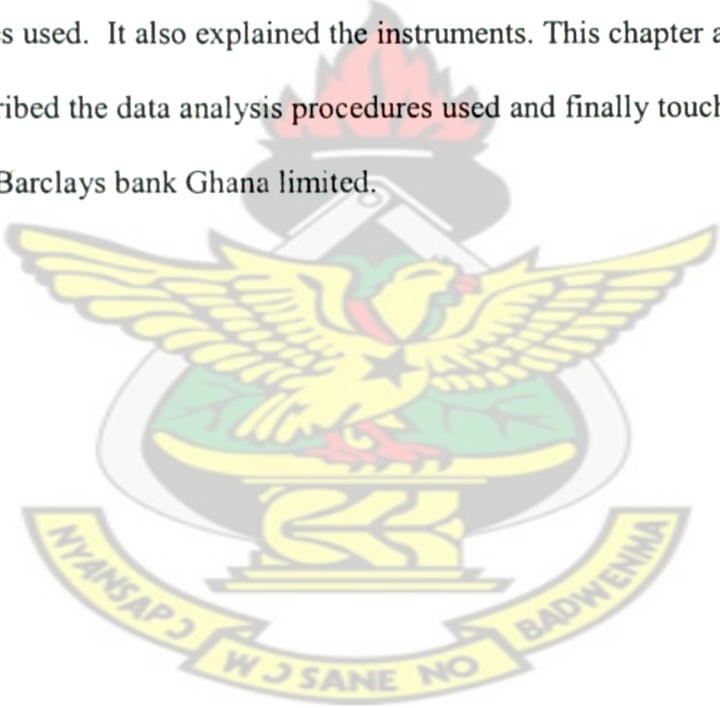
The following is the list of prestige centers

Osu	Accra
Kwame Nkrumah circle	Accra
High street	Accra
Millennium Heights	Accra

Spintex Road	Accra
Achimota	Accra
Ridge	Accra

3.9 CONCLUSION

This chapter discussed the methodology used in this study and organization profile of Barclays bank Ghana limited. It started with the rational for a case study, provided details of sample size and sampling techniques used. It also explained the instruments. This chapter also, explained the collection of data, described the data analysis procedures used and finally touched on history and organization profile of Barclays bank Ghana limited.



CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.0 INTRODUCTION

This chapter focuses attention on data presentation and analysis. For the purpose of clarity, the chapter is arranged in accordance with the objectives stated earlier in chapter one, these include the impact of information communication technology on the income structure of the bank. Recent Information communications technology banking technologies adopted by Barclays bank Ghana limited, the efficiency of the bank's operations as a results of modern information communications technology used, finally policy implication of the study. Simple frequency tables and pie charts are used for illustrative purposes.

4.1 DEMOGRAPHIC CHARATERISTICS OF RESPONDENTS

The demographic analysis consists of age, gender, educational level and the duration of working with the bank.

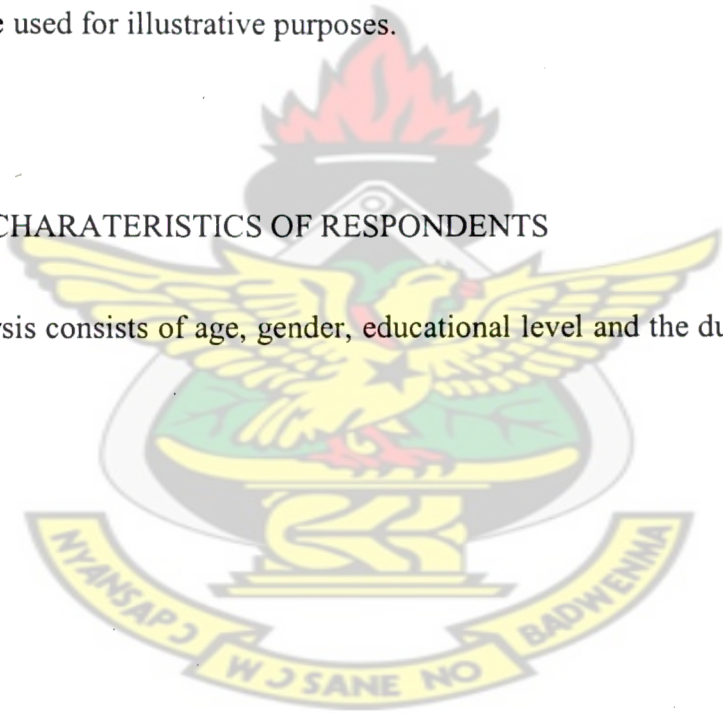


Table 4.1: Gender and Educational Background of Respondents

GENDER	EDUCATIONAL BACKGROUND OF RESPONDENTS		
	Tertiary Level	Professional Level	Masters Level
Male	70	30	40
Female	32	18	10
Total	102	48	50

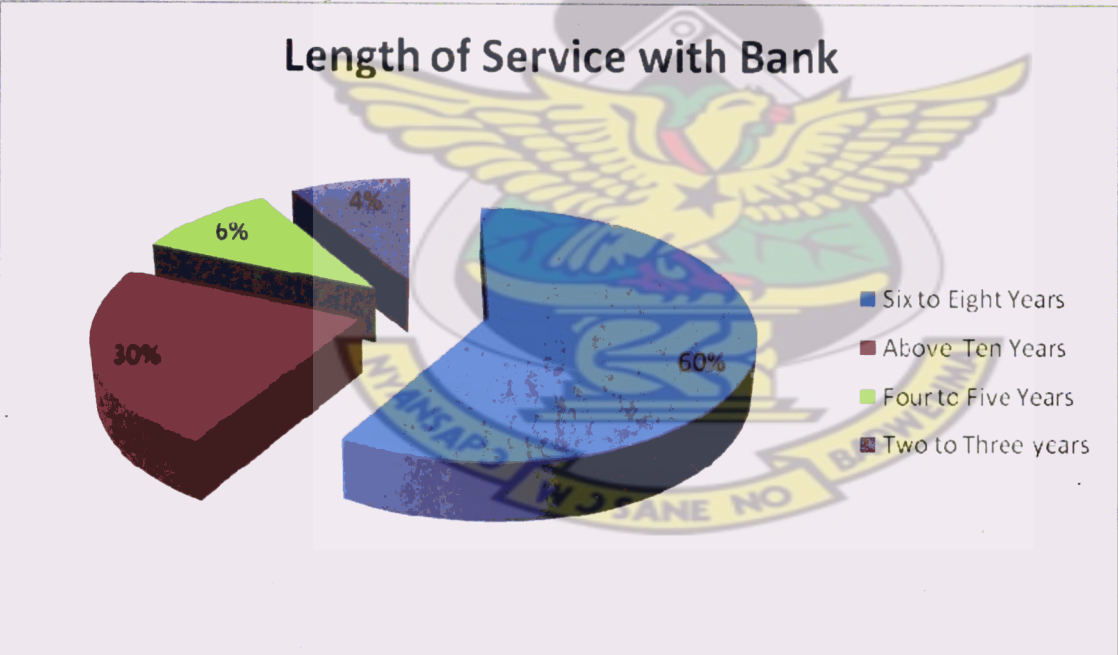
From the table above, majority of the respondents sampled were with higher education. Even though the male dominated in terms of education, most of the female respondents also had some higher education. From the table it can be seen that at the tertiary level out of the total number of the respondents only 32 female compared to 70 males had tertiary education. At the professional and masters’ level, there were more males than females. Since all the staff interviewed had at least obtained a tertiary level of education, this would impact positively on the adoption of

information communication technology in the banking operations thus increasing the profitability of the bank.

4.2 LENGTH OF SERVICE WITH THE BANK

Respondents were asked to indicate the duration they have been working with the bank this was considered very necessary because the longer their years with the bank the greater would be their knowledge on technological or information communications technology used in the bank. The responses elicited are presented in the figure below;

Figure 4.1: Length of service with Bank



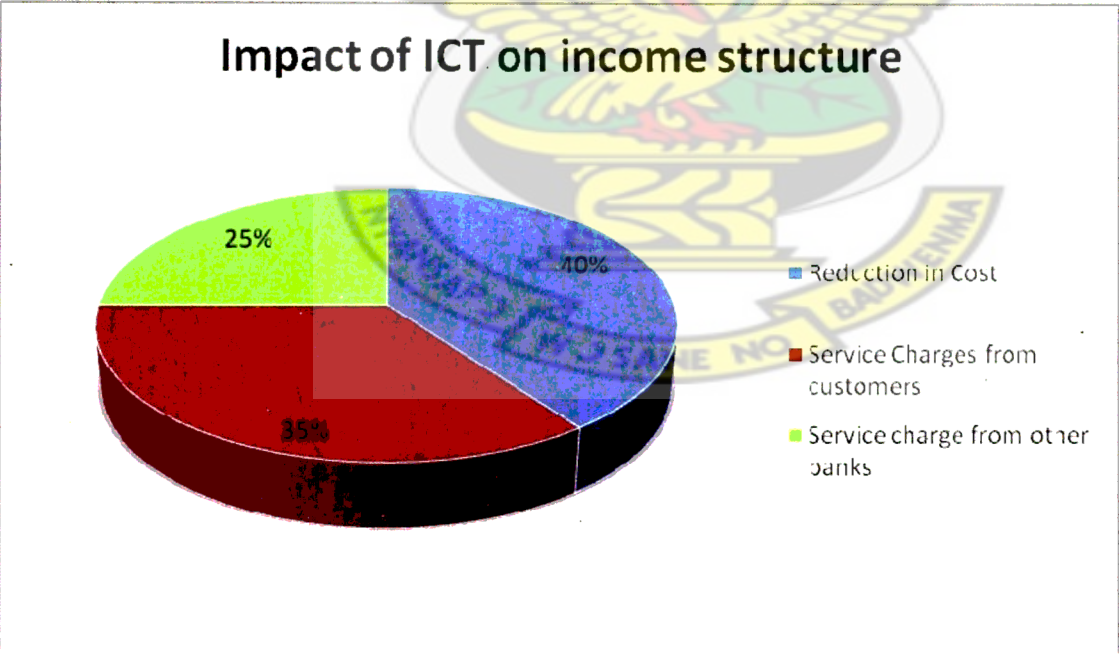
From the figure above the majority of the respondents have worked with the bank for a very long time hence might be in a better position to express their views on change within the bank and how it has helped in the efficiency of the banks operations.

From the figure, 60 percent of the respondents have worked with the bank from six to eight years. This is followed by those who have been with the bank for more than ten years they formed 30 percent of the respondents sampled for this study. The rest of the respondents have also worked with the banks for a period not exceeding five years. Together they also formed 10 percent of the total respondents sampled for the study.

4.3 IMPACT OF I.C.T ON THE INCOME STRUCTURE OF BARCLAYS BANK GHANA

Generally respondents sampled for the study were of view that information communications technology has made a positive impact on the income structure of the bank the responses elicited from the respondents are presented in the figure below:

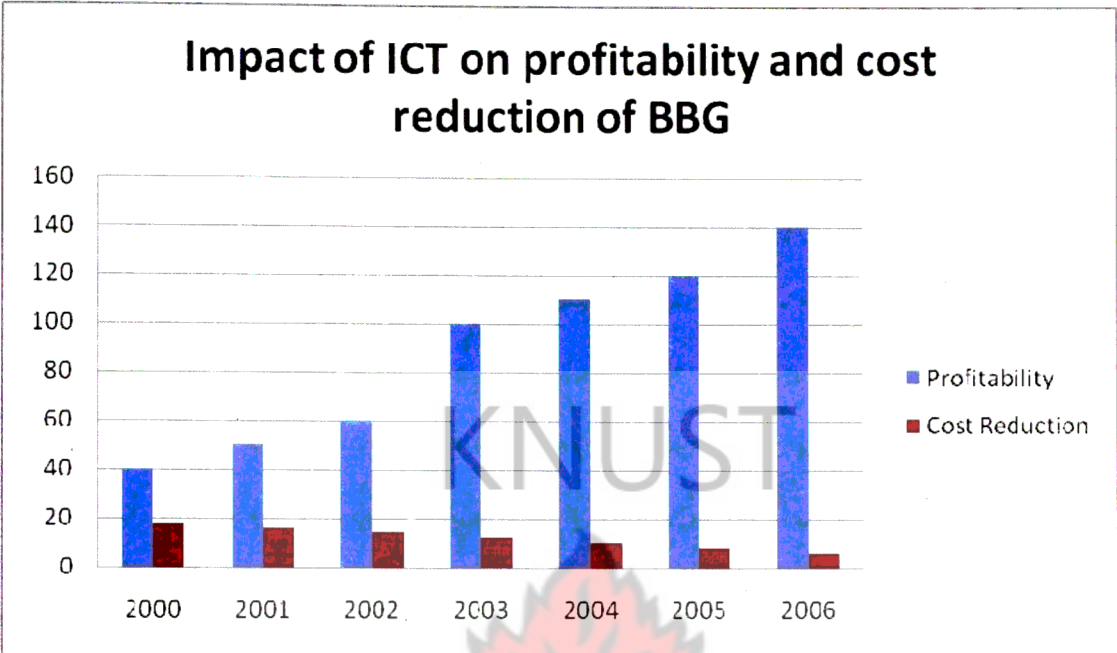
FIGURE 4.2:



From the figure above, the majority of the respondents were of the view that information communications technology has impacted positively on the income structure of the bank. These are in the form of service charges to individual customers and from other financial institutions. The statistics are presented in the figure above to test how the information communications technology progress impacts on the efficiency of the banking industry. The period of 2000-2006 was chosen. At that time, central bank authorities allowed banks to enter new areas of financial services and eliminated barriers of intra-and interstate banking and branching resulting in extensive networks of banking office and ATMs. Additionally, due to rapid information communications technology developments, banks expanded the range of offered services, adding for example: derivatives or loan securitization, and unutilized the internet as a new channel of services distribution and manage office networks.

The figure below represents linear graphs of changes of profitability and cost reduction due to information communications technology improvements for Barclays Bank Ghana Limited for the period of 2000-2006.

FIGURE 4.3:



The figure above shows the impact of information communications technology on the profitability and cost reduction of Barclays Bank Ghana Limited. There has been a tremendous reduction in the level of non-interest costs which banks have to cover to generate their non-interest incomes. Lower value of this ratio indicates better performance of the bank; it means reduction of operational costs by the bank.

On the other hand the profits from non interest cost have also increased considerably under the period under review. These non interest incomes are as a result of information communications technology developments of the banks over the period under review.

A practical look at a Management Review Report 2006 raised the following concerns which further explain the issues above.

1. Advances in the information and telecommunication technology were the base for invention of new services and improvements of existing one. The main categories of these products are: internet banking, electronic payments, investment securities, and information exchanges. New offers provide significant amount of incomes for the banks and their customers. However, on the other side, they require higher investments and generate higher operating costs. They introduced the broadest range of technology-related services.
2. Comparing values of correlation coefficients between the information Technology developments and efficiency of Barclays bank Ghana limited the finding revealed that technology had a positive impact and was positively correlated with profit efficiency (correlation coefficient of 0.7595, Management Review Report 2006). Negative sign of the correlation means, that with higher commitment to the technology banks can manage to reduce operating costs (labor, amortization, etc).
3. Although information Technology progress in positive way influences both, profit and cost effectiveness of the bank, the changes of the values of ROA and over the period have shown banks ability to generate additional profits (increase of 51%) then to reduce non-interest costs (reduction of 13%). This observation suggests that intensive technological applications implemented, predominantly by the bank, have enabled them to take advantage of the broader range of services, and a larger office and ATM networks to generate higher profits from

their assets; however they could not reduce costs of such expansion at the same rate. This puts in question possibility to achieve economy of scale by the largest banks.

The Management Review 2006 Report further showed immense improvement of every sector of bank. Of course many factors may be involved with such improvement. One of the factors was information communications technology implementation. The improvements are as shown below:

- The banks net interest income in 2000 increased by 32 percent over 2006
- Investment income increased by 30.88 percent over 2006
- Salary and allowances to employees increased by 21.17 percent over the period
- General and administrative expenses increased by 20.41 percent. Payment of insurance premium on deposit and loans was mainly responsible for this.
- Loans and advances increased by 16.65 percent
- Micro credit for the poor people of Ghana increased by 26.4 percent over the period
- The export and import business grew by 17.37 percent and 3.03 percent respectively.

[Source: Management Review 2006, Barclays Bank Ghana Ltd]

4.4 EXISTING SOFTWARE TECHNOLOGY

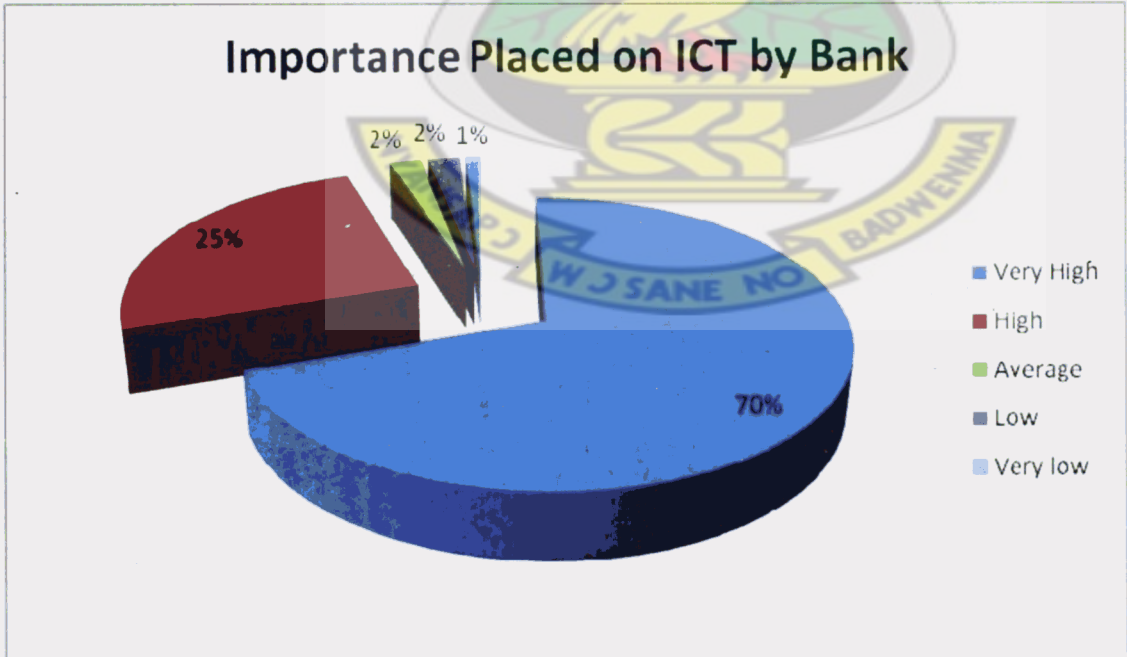
Currently, Barclays bank in Ghana is providing electronic service to their customers. We can not say they are completely following electronic way. Because they offer some of the functionalities

of the complete electronic banking like intra-bank transactions, Letter of Credit (LC) and foreign exchange, etc. In case of inter-bank transactions, the Central Bank handles the procedure. The rest are Automated teller machines, Telephone banking, and cast passport as explained in detailed in chapter two.

4.5 EFFICIENCY OF BANKS OPERATION AFTER THE INTRODUCTION OF INFORMATION COMMUNICATION TECHNOLOGY

This section of the chapter is devoted to how information communications technology has made the operations of the bank efficient . To begin with, respondents were asked how they rate the importance with which the bank places information communications technology. The responses elicited are presented in the pie chart below:

FIGURE 4.4



From the figure above, the importance placed on information communications technology by the bank was very high; the majority of the respondents interviewed for this study 70% indicated that the bank placed much emphasis on information communications technology. Those who said the level of importance placed on information communications technology by the bank was high also accounted for 25% of the total respondents sampled. Those who were of the view that the bank did not place much level of importance on information communications technology were in the minority and they formed about 5% of the total respondents sampled for this study.

4.5.1 Effect of information communications technology on speed and efficiency of banking operations

Respondents were asked if information communications technology had led to speedy and efficient operations.

The results obtained were presented in the diagram below

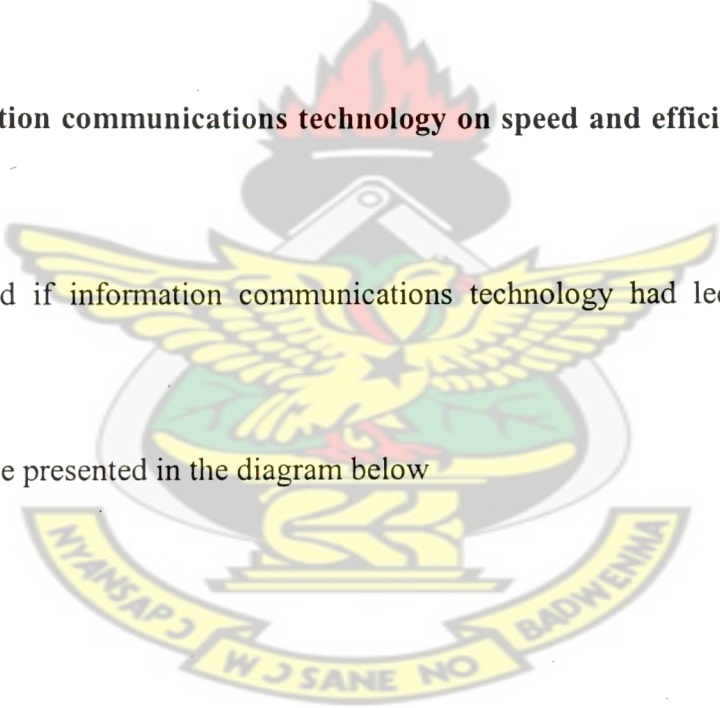
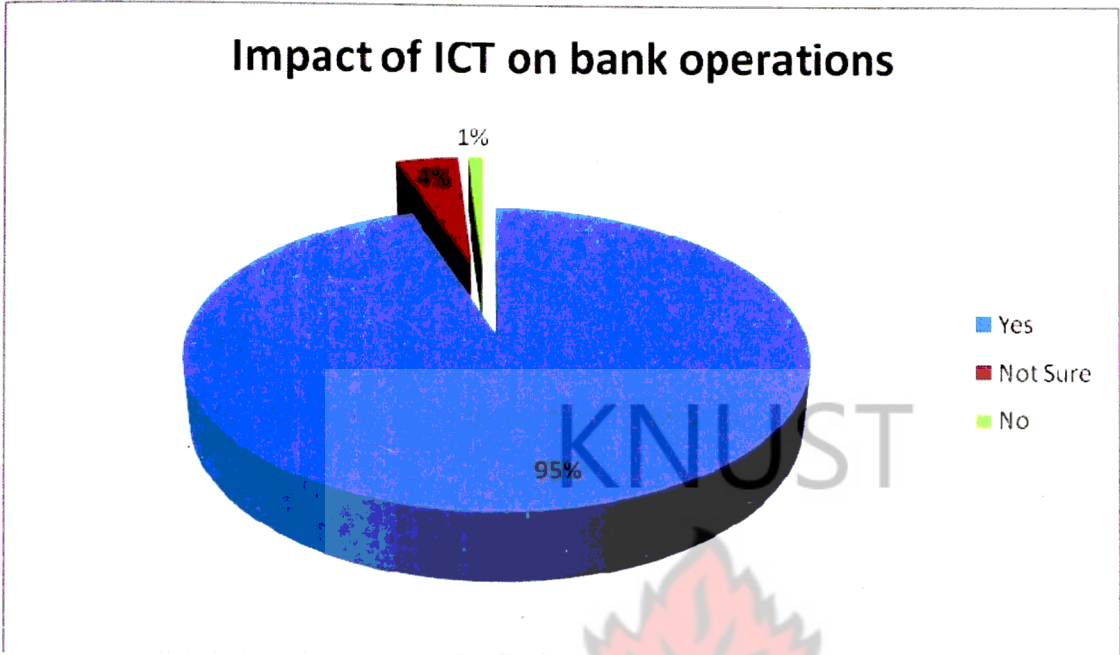


FIGURE 4.5:



The figure above displaying respondents view on the impact of information communications technology on the banks operations clearly indicates that information communications technology has made much impact on the operations of the bank. The majority of the respondents 95% sampled for the study agreed that information communications technology had impact on banking operations, 4% were not sure of the level of impact while 1% said that information communications technology has not made any impact on the banks operations.

4.5.2 Impact of Information communications technology on efficiency of the banks operations.

Banks as well as employees are more efficient after implementing information technology in the Bank because this system has some advantages over the traditional system. Advantages

mentioned by the respondents in this study are as follows: Process handling becomes faster, includes day end process, month end process etc. In traditional system, to accomplish audit, government officials need to go to every bank. After information Technology implementation they do not need to go to banks. Rather, they can collect the same information through network and audit report which can be generated within few minutes. In traditional system it is time dependent to transfer money from city to remote area and also a matter of some investment. During the transfer time money is idle so it is a great loss for the banks as well as customers. Electronic system can be used to transfer money within a few seconds (Intra-bank).

4.5.3 Effect of information communications technology on the number of customers

The views from respondents on whether information communications technology has increased their customers is presented in the figure below

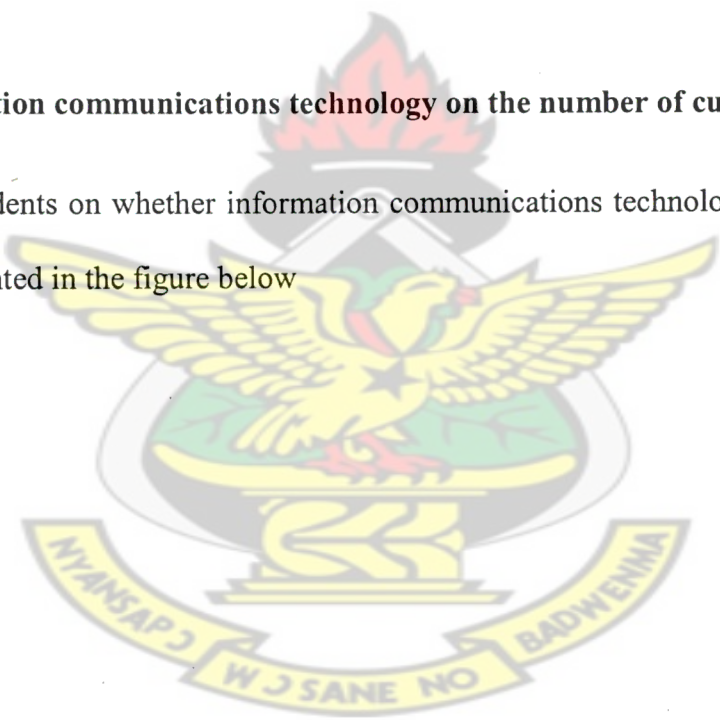
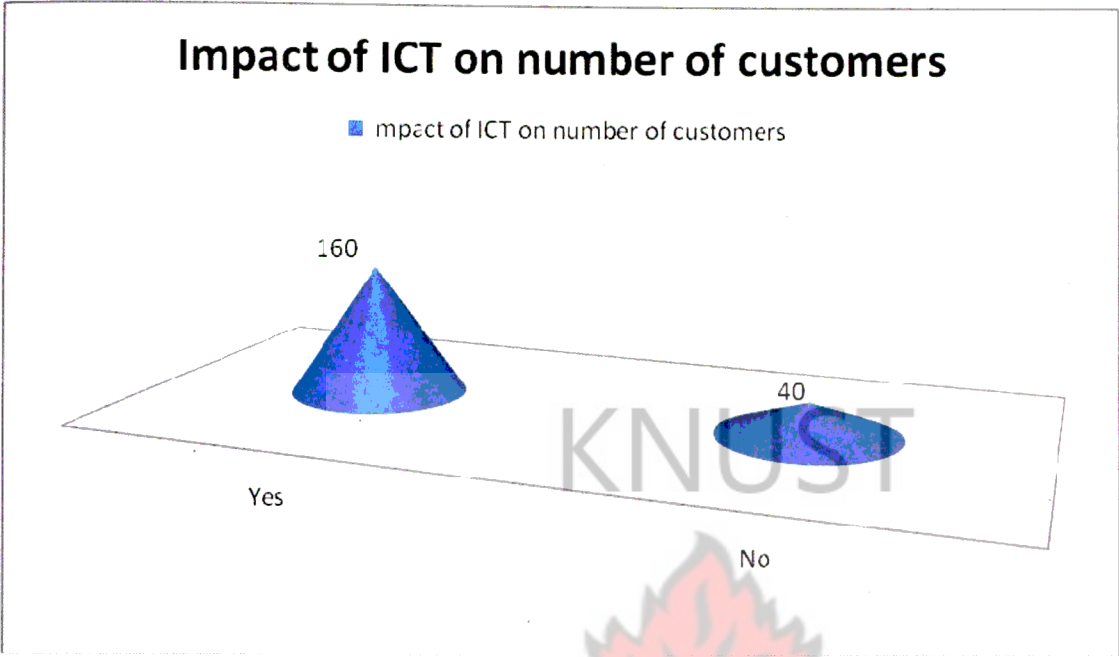


FIGURE 4.6

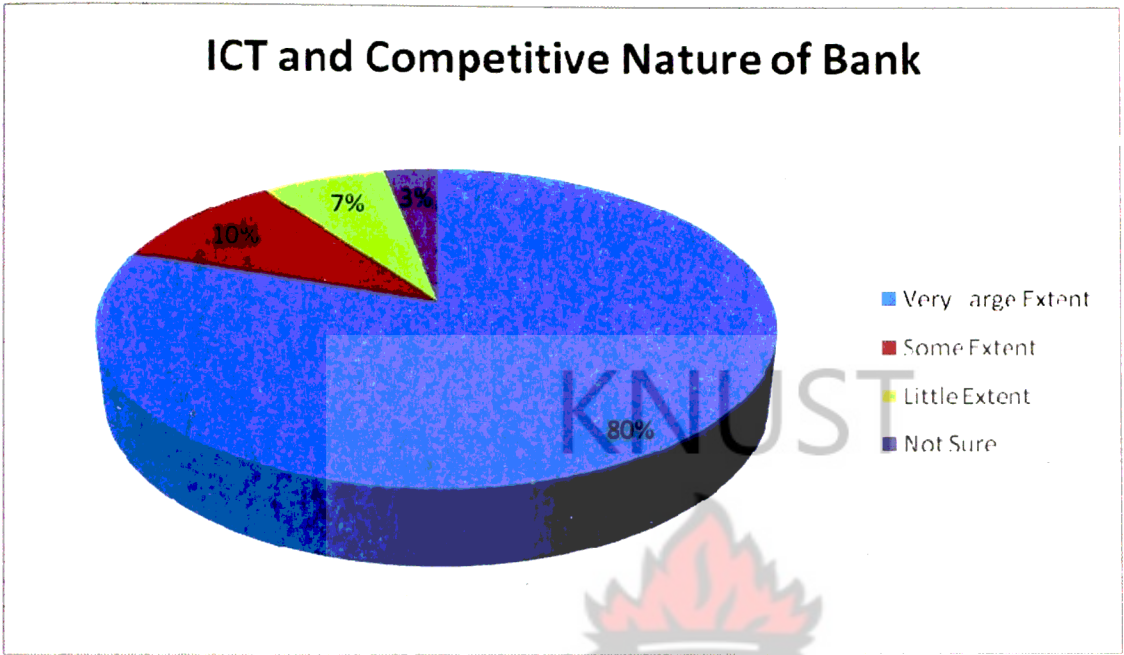


From the figure above the majority, 160 of the respondents, were of the view that information communications technology has lead to increased customers, while 40 of the respondents attributed the increased number of customers to other factors other than information communications technology.

4.5.4 Information communications technology and competitive nature of the bank

In today’s banking competition it is only when your services are attractive that you can get more customers for your bank. To this end, what role has information communications technology played in this regard? Respondents were asked to indicate how competitive their bank had become as a result of the introduction of information communications technology. The following responses were obtained from the staff of the bank where interviews were conducted.

FIGURE 4.7

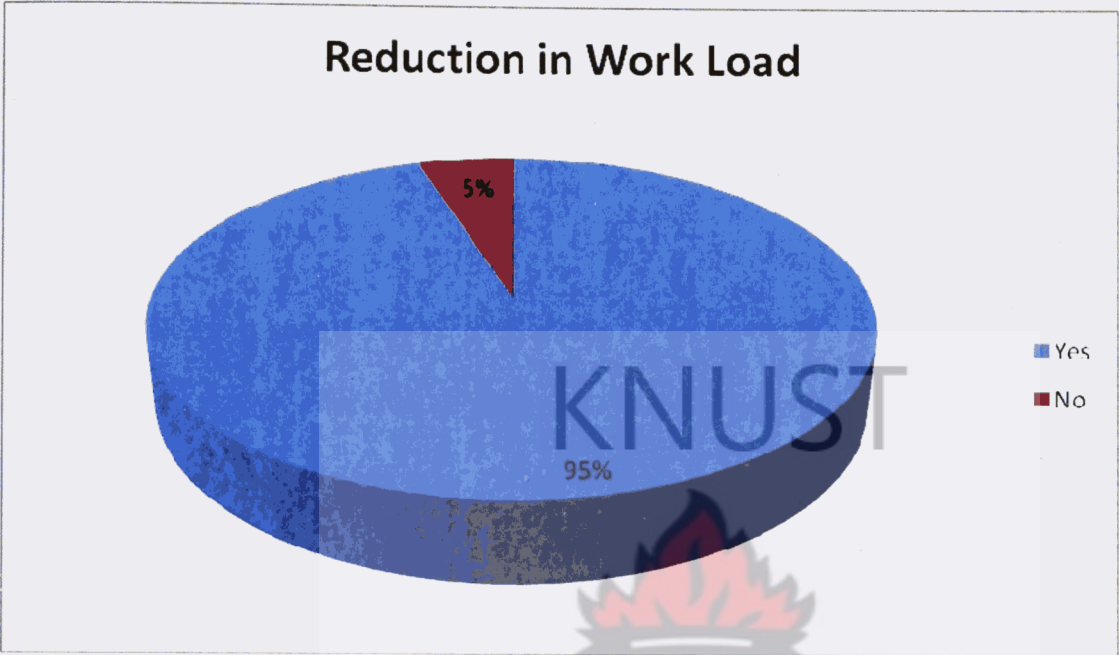


From the figure above information communications technology has made Barclays bank Ghana Limited very attractive and very competitive according to the respondents sampled for this study. 80% of the respondents sampled indicated that information communications technology has made the bank very competitive to a very large extent. 10% indicated it has made it competitive to some extent while 7% indicated to a very little extent.

4.5.5 Impact of Information communication technology on work load

Finally respondents (staff) were asked if information communications technology has led to reduction in their work load .The results obtained are presented in the figure below.

FIGURE 4.8



The majority of the respondents 95% were of the view that information communications technology has led to a reduction in their work load while only 5 answered in the negative.

In a nut shell therefore information communications technology has led to increase in the operations of the bank.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY OF FINDINGS

After careful and intense review of the data presentation and analysis, the following issues were identified in the discussion.

1) A look at the demographic characteristics of respondents' draws attention to the fact that majority had a tertiary educational background and a range of six to eight years as their length of service with the bank. Implying that these two characteristics are contributing factors in the sense that education and experience enable the respondent to appreciate and utilize information and communication technology in improving banking operations.

2) Majority of the respondents were of the view that information communications technology has had a positive impact on the income structure of the bank in the following ways:

- Reduction in Cost
- Service Charges from customers
- Service charges from other banks.

Thus a potpourri of these would definitely result in an increase in profitability and income generated by the bank. This is evident in the Management Review 2006 Report, which states that Barclays Bank Ghana Limited's net interest income in 2000 increased by 32 percent in 2006.

3) Ninety-five percent of the respondents placed a high rating on the importance of information communications technology to the bank. This rating is obviously high due to the resultant increase in the profitability and income generated by the bank because of information

communications technology. However the minority which has a lower rating of its importance seem to consider the shortfalls of information communications technology; for example the intrusion of viruses in software programmes used.

4) Before the introduction of information communications technology, bank operations such as money transfers and information processing were not fast and convenient because these were executed manually. On the other hand information communications technology has made the bank operations faster and convenient. For example money transfers can now be done with a click of a button.

5) Due to the ease with which banking operations are conducted and customers' needs satisfied, number of customers continues to increase. Information communications technology has also reduced workload in Barclays Bank.

5.2 CONCLUSION

As a result of competition within the banking industry in Ghana, it has become very necessary for banks to invest in information communication technology in order to be more competitive.

Information communication technology investment requires a substantial amount of money in terms of equipment and training of personnel. Barclays bank Ghana limited was among the few banks that started investing in information communications technology within the banking industry in Ghana.

It could be inferred that Barclays bank Ghana limited has reaped immense benefits from their information communication technology investment. From the analysis, it is clear that

management of the bank placed much emphasis on information communication technology and this has benefited the bank through increase in profitability among others.

With the creation of enabling economic environment by the government, other banks can learn from Barclays to improve upon their service delivery.

5.3 RECOMMENDATIONS

On the basis of the findings of this study and suggestions made by respondents as to what should be done to improve information communications technology developments to increase the financial performance of banks, the following measures are recommended for consideration in policy formulation.

- 1) The use of information and communication technology in the banking industry can be applied practically in providing information on a consistent and timely basis to customers. Specifically Barclays, for example, could provide mobile information prompts. This service would give customers information about all transactions in their accounts, financial ideas, current interest rates on investments etc. this information made available to the customers in a timely manner could improve decision making and management of their respective funds. The application of this mobile prompts could earn genuine customer loyalty and retention, thus increasing the profitability of the bank.
- 2) Setting up a complete “know your customer database”. In information and communication technology, the creation of a database is an essential component to aid in the efficient use of information technology. If the bank was to have a database

containing relevant information about all its customers, profitability would increase because:

- It would provide business history of the client and the bank: with this information, the bank can enhance its dealings with the customer. In reality, past mistakes could be avoided, credit worthiness of the customer could be accurately provided, and expectations of the customer could be met proactively or on time.
- Cost-effective Segmentation: with the customer database, various characteristics of customers could be categorized so as to find their homogenous needs and design strategies to satisfy their business needs. For example, information from the database could help segment all successful entrepreneurs into a market niche. Depending on the nature of their business, the bank can design a product or service that would satisfy their common needs. Example, Barclays can invest in growing oil market, identify up and coming entrepreneurs and grant them facilities to boost their financial strengths
- Link producers, manufacturers, wholesalers and retailers.
- Control mechanism for the occurrence of money laundering, or terrorist activities.

3) Introduction of internet banking in Barclays Ghana limited brings about world wide access

to banking operations or products. Bank associated with international business, should be able to blend internet banking with services provided to their customers with such a broad horizon, customers access international borders. Provision of internet banking to roaming customers and resident customers, would enable them continue banking with the bank. Therefore customers are caught in the trap of international competitors.

4) Identifying the training needs of staffs and organizing training workshops for staff development.

This: - enhance service delivery to customers

-enable staffs to meet organizational targets.

5) Barclays should evaluate information communications technology programmes on regular basis to enable update of programmes to suit evolving technological trends.



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APPENDIX:

QUESTIONNAIRE

- 1. Sex of respondents
 - a) Male () Female ()
- 2. Educational background of respondents
 -
- 3. What is your job title/position?
 -
- 4. Length of service with the Bank
 -
- 5. What department of Barclays Bank do you work in?
 - A) Customer service and Relations C) ICT
 - B) Operations D) Cash (Teller)
 - E) Sales and Marketing
- 6. Generally how has ICT impacted on the incomes structure of the bank.....
- 7. Please tick all ICT technologies your bank is using in their operations
 - A) ATM C)E-BANKING
 - B) PC Banking D) Tele- Banking
 - E) Internet Banking
- 8. How do you rate the level of ICT in your bank?
 -

9. Has the introduction of ICT led to speedy and efficient banking operations?

Yes [] No []

10. How has ICT increased the efficiency of your banks operations?

.....

11. Has the introduction of ICT led to increased number of customers?

Yes [] No []

12. To what extent has ICT made your bank more competitive?

Very large extent () large extent () very little extent []

13. How would you rate the contribution of ICT on banking service delivery?

.....

.....

14. Has information technology led to a reduction of your work load in the bank? Yes () No ()

15. Are clients/customers satisfied with services facilitated by ICT in your bank? Yes () No () Not Sure ()

16. Do you agree that ICT has reduced cost of employment and therefore increased profitability of banking? Yes () No () Not Sure.

17. Do you believe ICT methods pose a security threat in transactions therefore impeding on the profitability of banking transactions?

Strongly Agree () Agree () Not Sure () Disagree a) Strongly Disagree ().

18. Due to the introduction of ICT into the banking industry, there has been rapid increase in the profits of banks over the past ten years.

True () False ().

19. Technological investments are taking a large share of the bank's financial resources. True () False ()

20. Communication between customers and employers has been improved considerably therefore improving the standards of service.

True () False ()

21. Has ICT helped correct and improve certain drawbacks than manual and less technological methods introduced into banking transactions?

Yes () No () Not Sure ()

22. State briefly how ICT has influenced the performance of your working activities

.....

