IMPACT OF DEREGULATION OF FINANCIAL SECTION ON THE DEVELOPMENT OF NIGERIA STOCK EXCHANGE

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

To achieve sustainable business success in the demanding world market place, company must use relevant performance measures. Though the term information a-communication technology has been used since the late 18th to 19th Centur. According to Encarta dictionary 2009 edition define information technology a? system of processing of data via computer: the use of technologies from com put . electronics, and telecommunications to process and distribute information digital a other forms.

During the last few decades, financial institutions and other organizations have r immense investments in Information and Communication Technology (ICT implications of these investments for productivity have been discussed in bus and academic communities (Kayode, 2005). Besides, according to the role of 12 Business process reengineering, BPR is essential for organizations to potential impact of ICT on overall performance of a company (Ahmad, 2008)

Productivity, which quantifies the outputs and inputs of an organization and e.\: m the two as a ratio. Generally, the ratio is expressed as output to input.

Effectiveness, which determines the relationship of an organization's, outputs :: an organization is intended to accomplish.

Quality, which examines an output or the process by which an output is Quality is indicated by attributes such as accuracy (or error rate), thorough re?: complexity. Timeliness, which evaluates the time involved producing an rpm output. (Citizen-Driven Government Performance, 2004)

There is unprecedented speed in technology development in this century. This

development has come with its increased speed and efficiency in operation in all spheres of life. The world entered the 19th century without planes, radios or televisions. It enters the 20th with nuclear power, space travel, computers, cell phones and the wireless Internet. Within the span of a hundred years, entirely new fields of science and technology came into existence and the fundamental political and economic structures of the world changed at once. The scope and space of recent change is a function of revolutionary advances in Information and Communication Technologies (ICTs).

ICTs are basically information handling tools, a varied set of goods, application and service that are used to produce, store and process, distribute and exchange information. They include the "old" ICTs of radio, television and telephone, and the new ICTs of computers, satellite and wireless technology and the Internet. These different tools are now able to work together, and combine to form our "networked world"- a massive infrastructure of interconnected telephone services, standardized computing hardware, the Internet, radio and television, which reaches into every corner of the globe.

The revolutionary potential of new ICTs lies in their capacities to instantaneously connect vast network of individuals and organizations acioss gieat geogiaphic distances at very little cost. As such, ICTs have been key enableis oi globalization, facilitating world wide flows of information, capital, ideas, people and products. They have transformed businesses, markets and organizations, revolutionized learning and knowledge sharing, empowered citizens and communities and created significant

economic growth in many countries. ICTs have amplified brain power in much the same way that the 19th century industrial revolution amplified muscle power.

Studies at the company and country levels have shown that Information and Communication Technology is positively related to corporate and national economic performance (Brynjolfsson and Hitt, 1993, Calderon, Seo & Kim, 2001 and Oyeyinka, 1996). Economic growth depends heavily on the efficient and effective use of the country's resources, which include land, capital, labour and increasingly today, knowledge and technology. Technological progress is stimulated by an attempt to respond to some unmet need, or by attempting to perform activities in a more effective and efficient way.

In recent years, with the coming of the digital age, there has been a growing awareness of the significance of Information and Communication, financial institutions have understood that poor information and communication system have an impact on every aspect of its performance, from operational effectiveness to strategic management.

As the scale of operations grow, as in the case of Nigeria with the recent mergers and consolidation, financial institutions and various other forms of businesses feel the need for having portfolio of transactions. It is also necessary in taking appropriate policy decisions to provide effective time management and increasing outreach. Brynjolfsson (2003) claims the use of a management information system (MIS) will improve efficiency and increase outreach.

However, the unfolding development and the inherent challenges of Management Information System (MIS), demand that to maximize the benefits of information and communication technology such as improving management / customer relationships, streamline operations, expand activities, improve services and minimise risk exposures in a turbulent business environment, organisations need to compliment the investment jn ICT with corresponding investment in Business Process Re-

engineering (Ghates, 2000).

This study intends to investigate the role played by information and communication technology in the overall performance of Nigerian banks and how this will impact on the overall goal attainment of the institutions.

1.2 Statement of the Problem

There has been much discussion on whether or not the ICT investment provides improvements in performance and business efficiency. Several studies at the industry- level and at the firm-level have contributed different understandings of this phenomenon.

Nigerian banks are one of the powerful financial sectors that provide financial intermediation services to the economy. Nigerian banks have taken great steps in the development of ICT in offering qualitative service delivery to customers and the nation as a whole.

It is apparent that ICT is playing pivotal role in the survival strategy of the banks all over the world, including Nigeria. As a result, a good number of banks in Nigeria are ICT compliant. According to Banking Supervision Annual Report (2001), banks in

Nigeria have diverse ICT deployments including systems networking involving Local Area Network (LAN), Wide Area Network (WAN), and even Internet linkage as operational imperatives as well as a survival strategy. There are even some banks with functioning Internet websites that allow a customer the capability to initiate and fulfil financial transactions through the net.

In addition, ICT deployment has led to ICT based financial innovations such as credit cards, smart cards, electronic purse and electronic transfers in the payment system. These innovations have the potential to challenge the predominant role of

cash for making small value payments and make retail transactions easier and cheaper for consumers and merchants.

As a corollary to bank automation or ICT adoption, some banks embarked on downsizing or rationalizing of staff, so that the overhead cost can be reduced as well as meeting changing customer requirements efficiently.

According to Adewole (2002), inefficient or lack of basic infrastructure, like electricity, telecommunications and security, translates in high cost of adopting information technology by banks. This is so because most banks are forced to develop their own parallel communication, electricity and security networks.

Idowu, Alu, and Adagunodo (2002) observed that in response to erratic power supply and poor communication, many banks are resorting to alternative solution by using Very Small Aperture Terminal (VSAT) satellite systems, for long distance electronic communication and Metropolitan Digital Services (MDS) system for short distance electronic communication as well as alternative power source. They observe however,

> that all these banks are trying to acquire appropriate VSATs or MDS independent of each other. Put differently, there is no collaboration between the banks in sourcing this expensive technology so as to provide a cost-effective approach to the problem.

This high cost of adopting ICT makes banks to experience earnings pressure, which induce them to take above normal risks (Oluwale, 2003). Hence the investments in ICT may not pay off.

Ehikhamenor (2003), however, argues that these banks invest huge funds in ICT in spite of the daunting challenges. These challenges include: erratic power supply, poor communication infrastructure, inadequate indigenous input in the haidwaie and software chain and low information technology education and awareness.

However, in spite of this daunting operational cost, some researchers still argue that ICT applications have the potential to lower costs or create differentiation across a wide array of activities that constitute a firm's value chain if properly aligned to corporate strategy. That is, when applications create a differential advantage, they affect the structural characteristics of the industry and become important to successful strategy and organizational performance (Ives and Learmonth 1984; and Porter, 1985). Under such circumstances, firms will seek to align their ICT resources to position themselves favourably relative to rivals, buyers, suppliers, substitutes, or potential entrants.

Another stream of opinions argue further, that applying ICT to a value chain activity is essential, even where it provides no lasting competitive advantage. In that case the technology becomes a strategic necessity because failing to attend to it results in a strategic disadvantage (Clemons and Kimbrough 1986). In this sense, 1CT becomes more of a threat than opportunity. The costs of adoption may yield little or no return, but the opportunity costs of not adopting are sufficiently high to justify the investment.

Automatic Teller Machines (ATMs) for instance, is necessary to survive in retail banking. Most banks have ATMs with the same basic services and these systems have significantly enhanced customer access to funds. ATM is a greater necessity but provides no real competitive advantage to any particular bank (Clemons and Kimbrough 1986). However, Banker and Kauffman (1988) in an empirical study conclude that ATM deployment among bank branches in USA had little or no effect on realising greater deposit collection. Thus, whatever the circumstance, 1CT is imperative in banks.

It is necessary also to state that while there are many instances of the application of

1CT on the services provided by Nigerian banks, the potential for misalignment between Business Process Reengineering (BPR) and iCT cannot be ignored. 1C 1 investment may make little direct contribution to overall performance of corporate organizations until they are combined with complementary investments in business activities, human capital, and company restructuring (Ahmad, 2008). Therefore, according to the role of ICT in Business Process Reengineering, as a facilitator and enabler, BPR is valuable for financial institutions to increase the impact of IC f on the overall performance. On the other word, both ICT and BPR investments, together, are required to improve productivity drastically.

Also, some have argued that the Nigerian banks lack the wherewithal to maximally apply ICT for efficient productivity. Among the often-cited constraints are: lack of ICT management knowledge; absence of ICT strategy and banks reluctance to collaborate (Okafor, 2000 and Woherem, 2000).

Besides, the following problems are evident in the operations of Nigerian Banks:

i. Inefficiency in payment and transactions processing system.

ii. Time spent on various banking transactions and unnecessary use of material resources such as paper.

iii. Frequent system breakdown without provision for an alternative means of attending to customers during the period ot breakdown.

iv. Ineffective business strategies requiring restructuring and reengineering programmes.

v. Time spent by. customers queuing for the services in spite of the use of ICT tools such as Automated Teller Machine (ATM).

Looking at the array of these problems and the efforts by the introduction of

technology to address these problems, it is only necessary to look at the investment in information and communication technology to see whether the investment in the sector is justified. As the banks consolidate as a means of addressing some other problems, the mergers also come with its further difficulties in terms of merging the information and communication infrastructure. It is therefore, pertinent to look at the general impact of Information and Communication Technology on the general performance of Nigerian banks.

1.3 Research Questions

The critical questions within the scope of this study are:

1. What is the impact of ICT investments on the performance (profitability) of Nigerian banks?
2. What are the contributions of ICT application process to bank performance?

1.4 Objectives of the Study

Nowadays, there are strong competitions among banks to improve their operational efficiencies. Therefore, they do not only employ information technologies through the organizational levels to improve the performance quality but also use the newest technologies to meet customers' needs.

The objective of any research work is to find solutions to the research problems. Thus, the purpose of this study is to consider the impact of Information and Communication Technology (ICT) on the performance of Nigerian banks. Basically, this study seeks

to achieve the following objectives:

1. To assess the impact of Information and Communication Technology investments (ICT) on the profitability of Nigerian banks.

2. To determine to what extent ICT related problems relate to banks performance (profitability).

1.5 Statement of the Hypothesis

There have been claims by virtually all banks lor acquiring state-of-the-aii communication equipment as well as satellite technology to suppoit then operations, with so doing, they hope to render customized services as well as improve their efficiencies. Sequel to the above, this study wants to test that:

Hypothesis 1

H_0:ICT applications and investments do not contribute significantly to the profitability of Nigerian banks.

Hypothesis 2

H_0: Information and Communication Technology related problems do not have significant relationship with the performance of Nigerian Banks.

1.6 Significance of the Study

The essence of a study of this nature is to make theoretical and practical contributions to knowledge in the chosen area. It is a fact that there is paucity of literature on the impact of ICT on Corporate performance of banks in Nigeria. The few existing ones, like Adewole (2002) and Waziri (2007) only focused on e-banking strategy of the commercial banks with particular reference to globalization and customer satisfaction. These works, aside from their lack of interest in the impact of ICT on the performance of banking sector, are largely conceptual studies on the challenges of the banks in the era of globalisation. Besides, empirical research on the strategic uses of ICT is practically non-existent. Although, the works of Omoyi (2005) and Andohol (2007) are empirical studies on ICT adoption, none

has examined the relevance of investment in Business Process Reengineering (BPR) as a complementary investment in ICT to improve productivity drastically using objective criteria as emplpyed by the present study; Specifically, it is unclear and none has considered when the quality of performance of Nigerian banks will be said to be satisfactory. Specifically, it is unclear when the application of ICT maximally pays off for bank performance. This study will fill this existing gap.

Thus, the significances of this study are as follows:

To bank staff and management:

1. The study will contribute to the whole body of knowledge especially in the area of banking. It would be of great importance to banks that do not have provisions for packages relevant to meeting customers' need during the period of system breakdown.
2. The study will also assist banks to reduce the problems of data capturing and provide fast response facilities to the bank customers' demand.
3. The study will equip the managers of Nigerian banks with relevant information on Business Process Re-engineering (BPR), required to avoid duplication of efforts in processing banking transactions.
4. It will be of immense benefits to banks who desire to be the leaders in an ICT driven economy as the study will reveal the opportunities available via ICT that are yet to be maximized by Nigerian Banks.

To bank customers:

5. Potential and existing customers will be acquainted with some of the computer-related services offered by Nigerian Banks.

To research students:

6. Research students will find the study as a basis for further research thereby improving upon this work/field of study.

1.7 Scope and Limitation of the Study

This research is centred on the emerging revolution in the banking sector in Nigeria, especially as it relates to the impact of Information and Communication Technology on bank's performance (i.e. customer satisfaction, timely processing of transactions and profitability).

Following the consolidation exercise in 2005, there are 24 Banks as at date in Nigeria.

8 of the banks (representing 30 percent of the total population) will be selected for the study using relevant performance measures and the corresponding ICT investments from 1998 - 2014. The banks will be randomly chosen, comprising the old and new generation banks. Thirty percent (30%) of the population is chosen because these banks have their financial statements ready and accessible. Besides, the banks meet the criteria of size, geographical location of head offices and classification. 1 he African Development Consulting Group (ADCG) conducted a study on the impact of IT in banking industry in 1998 and used similar criteria.

1.8 Definition of Terms

1. **Corporate Performance:** is described as corporate health, success, profitability, efficiency, effectiveness, productivity or excellence.
2. ICT investments: Is the aggregate of investments in IC f capital and ICT labour.
3. Net Profit: Is simply the gross income accruable to a bank at a particular accounting period less operating expenses, interest and taxes. It is also referred to as net income.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

During the last few decades, financial institutions and other organisations have made immense investments in Information and Communication Technology (ICT). The implications of these investments for productivity have been discussed in business and academic communities (Kayode, 2005). Besides, according to the role of 1C f in Business process reengineering, BPR is essential tor organizations to increase potential impact of ICT on overall performance of a company (Ahmad, 2008). This chapter will frame the study in the theoretical context and provide an overview of the relevant literature, relating to ICT and performance, to direct theoretical contexts toward research questions. In that line, we shall look at the relationship between ICT investments, Business process Reengineering and Corporate Performance.

2.2 Conceptual Framework

A conceptual framework focuses on the main dimensions to be studied, the factors of variables, and the presumed relationship between them or, in other words, something that explains, either graphically or in narrative form, the main things to be studied (Ahmad, 2008). The aim of this part is to review the summary of relevant main concepts that will be employed to conduct this research. Also, the frame of relerence builds an appropriate framework to study the Impact of ICT investment and evaluate BPR factors in "Nigerian Banks.

2.2.1 An Overview of ICT, Corporate Performance and Business Process Reengineering (BPR)

Information and Communication Technology (ICT) is the set of activities that facilitate the capturing, storage, processing, transmission and display of information by electronic means (World Bank, 2002). ICTs include Computer, Internet, Communication networks, Telephone, Radio, Television, and Wireless Technologies like Global System of Mobile Communication (GSM).

ICT has made rationalization possible in organizations by minimizing human involvement. These aspects of ICT are labelled as automation (Zuboff, 1988). Increased access to information and enhanced means of accessing, analyzing, storing and communicating information can results to rationalization. Informational aspects of ICT application empower employees and enrich quality of decisions and performances. The third type of effects of ICT application is transformational, which encompasses the changes observed in process innovation and transformation. Another type of effects is identified by Hitt & Brynjolfsson (1996), who discussed the importance of the increased value perceived by consumers as a result of technological improvements. This phenomenon is defined as con,miner surplus (Mooney, Gurbaxani & Kraemei, 1996).

ICT is known as a productive resource to increase the economic growth, productivity and consumer satisfaction. It has an effective role to enhance the quality of communication services. ICT can be gainful in the banking services when appropriate successful BPR is implemented in the different parts of the financial institution (Limayem, 2006). Moreover, banking services survival depends on its ability to

prepare for changes in customer needs, as well as changes in regulation and technology (Fornell and Wernerfelt, 1987; Reichheld and Sasser, 1990).

3PR begins with process redesigning which leads to fundamental changes in many aspects of an organization, including organizational structure, job characteristics, performance measures and the reward system. BPR relies heavily on the ICT uses to create radically different working methods to achieve improvements of the order of magnitude required. Furthermore, BPR facilitates the change in corporate management's perception of technology. It also confirms an alternative channel through which ICT solutions are being scrutinized and selected (James & Helen, 2004).

Productivity growth arises from the development of new work methods based on new technology and production techniques (Ahmad, 2008). Consequently, when the new technology of ICT was introduced in working life, productivity growth was expected. But, because computers-were initially used in a situation where productivity growth had been low and unemployment had been high since the mid-1970s, it was initially difficult to prove positive effects of investments in ICT (Laudon 2001). Solow (.987) referred to this situation when he stated, "You can see the computer age everywhere but not in the productivity statistics". This phenomenon was later defined as the productivity paradox (Horzellg, 2005). Of late, however, firm-level studies, in the manufacturing and service sectors, have shown that there are significant positive metrihutions from ICT investments toward productivity (Harker, 2000).

2.2.2 CONCEPT OF INFORMATION AND COMMUNICATION TECHNOLOGY

An avalanche of definitions exists in the literature on the concept of information technology

(Cooper and Zmud, 1990; Oyeyinka, 1996; Woherem, 2000; DeYoung. 2001; Oluyemi, 2001; and electronic dictionary; www.ichnet.org; www.alslib.co.uk; www.ncate.org; www.genomiclossaries.com; www.ciao.gov; www.opengroup.org; www,nrcan.gc.ca; www.soton.ac.uk; www.iet.ucdavis.edu; www.noaagov and www.beta-rubicon.com). However, most of these definitions are semantically duplicated. A synthesis of most of them reveals that information technology means any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, control, display, switching, interchange, transmission or reception of data or information. It covers all forms of technology used to create, store, transmit, interpret and manipulate information in its various formats.

Porter and Miller (1985) observed that ICT involves more than just computers. ICT includes the information that business create and use as well as the wide spectrum of increasingly convergent and linked technologies that produce that information. They assert, that ICT is a strategic factor in competitive markets because it can alter the rules of competition, give companies new ways to out perform competitors and often form the basis for whole new businesses.

ICT incorporates two main technologies namely: computers and telecommunication. According to Woharem (2000), a computer is an electronic device that uses instructions stored in its memory unit and accepts data input from its peripherals. It processes the data input using its arithmetic and logic processing units, and then produces output from its internal processing, while storing the results for use in the future. Computer includes handheld computers, palmtops, notebooks, personal digital assistants (PDAs), desktops, workstations, minis, mainframe, as well as supercomputer.

The second part of ICT is the telecommunications, which is simply the technology

used in bringing about the communication of voice and data signals over some geographical distance. The data signals can be in form of graphics, picture, numbers, video and a multimedia of different data types (Woherem 2000).

2.2.3 Facets of ICT in Banking

There are multitudes of ICT deployments in the banking industry. For easier comprehension and avoidance of confusion we have classified them into three namely: internet banking, electronic payment technologies and information exchanges. These may not be the most important banking technologies but they illustrate the multiplicity of potential different actual and measured effects of technological progress. These examples represent both ICT and financial technologies and cover both “front-office” technologies in which the bank deal directly with customers and “back-office” technologies for producing sources that are generally visible to customers.

Internet Banking

Oluyemi (2001) defines Internet to mean the worldwide network of computer networks that enables communication with other entities and individuals around the world. It is a super network connecting millions of computers around the world via telephone lines, cables, and satellite. According to Berger (2003) Internet Banking is a relatively new front-office technology.

Banks offer a variety of levels of internet service and combination of Internet and physical offices and ATM networks. Some banks employ a “click-and Mortar" approach in which the banks add a transactional internet site to their physical offices and ATMs networks. A transactional site allows customers to make transactions on-line such as accessing accounts, transferring funds, applying for a loan among others. Other banks have set up information websites that provide information about

the banks and their services, but do not allow for on-line transactions. However, a small number of internet - only banks offer services through transactional internet sites and access to ATMs network, but with no physical offices open to the public (Berger 2003:146). According to DeYoung (2001), examples of banks include Ebank (www.ebank.com); First Internet Bank of Indiana (www.firstib.com); Gay and Lesbian Bank (www.glbank.com); Market place Bank (www.marketplacebankcom); and NetBank (www.netbankcom).

Automatic Teller Machines (ATMs)

According to Weiner (199.9), an ATM card allows a customer to withdraw cash from his bank account by entering a personal identification number (PIN) and having the amount of the withdrawal immediately debited to the account. They were introduced in the retail banking with the objective of reducing personnel costs associated with traditional "teller window" customer service transactions. The ATM helps reduce, to a large extent, the constraints in time and geographical location. They presented banks with a more economical substitute for brick and mortal branches.

On-Line Banking

On-line banking basically, allows a customer to transact business in any branch, irrespective of the branch his account is domiciled. In many countries, on-line banking is gradually assuming a greater dimension of sophistication with the Internet banking.

Electronic Payment Technologies

Electronic payment technologies are methods of transferring funds electronically with relative little paper work. At the front-office level, there has been a switch from paper payment in many advanced countries. Also customers have switched

some of their purchases from cheques and cash to credit cards, which are mostly cleared electronically and to debit cards, which are almost entirely processed electronically (Hancock and Humphrey, 1998 and Berger 2003).

Some examples of these electronic payment technologies include: smart cards i.e electronic or digital purse. This is a plastic card that has a micro process or embedded which can be loaded with a monetary value. Its power lies with their ability to store and manipulate data, to handle multiple applications on one card and to perform secure transactions (Oluyemi, 2001)

Information Exchanges

Information exchanges are intermediaries through which banks and other creditors share data relevant to the credit worthiness of loan applicants. These types exist largely in the advanced countries like USA and UK. 1 he exchanges collect data horn financial institutions, trade creditors, public records, and other sources, aggregate and summarise the data and then provide credit reports or credits scores to lending institutions (Berger, 2003).

Other ICT equipments used by banks include: telephone, facsimile, wireless radiophone, very small aperture terminal satellite (VSAT), telegraphy, Local Area Network (LAN), home banking applications, decisions support system (DSS), and Data Processing (DP) applications. These applications enhance the services of the commercial banks in terms of speed, accuracy, and quality among others.

2.2.4 Evolution of ICT in the Nigerian Banking Sector

Since the late 19th century, Nigerian banks have undergone a consistent process of change, which has transformed their nature, size and structure, in the last decade or so, they have also been the location of significant technological change, whereby application of waves of new technology had led to the banks adapting to changing

banking business processes and relationships.

This subsection traces the historical evolution of the adoption of ICT in the banking industry in Nigeria. The review is not just a tale of technological determinism, rather we believe that the banks attempted to assesses the cost and benefits associated with the adoption of ICT and acted aptly with the full awareness of the purview' and the imperatives of the operating milieu. Thus the review discusses how ICT adoption has transformed the banking sector in terms of changes in structure, strategies, products, service delivery and performance as well as the problems associated with these changes.

The subsection is divided into two broad periods namely; the pre SAP and post SAP eras following the major policy changes in the Nigerian economy. It is patterned as follows:

2.2.4.1ICT and Banks In The Pre-Sap Era

The pre SAP era can be divided into two periods namely; pre independence and post independence up till 1986. The operating environment of banks during the colonial period was such that banks were at formative stages; the people were predominantly illiterate and generally lacked the banking culture. In addition, there were few banks, largely owned by foreigners and the milieu was entirely dominated by the public sector.

As such, unlike what obtained in the UK and USA, early innovations in ICT did not influence changes in the banking industry of the Nigerian economy during the pre-independence era. At this point, banking was sufficiently manually operated and restricted to the colonial head office in Lagos. Very few customers, such as foreign multinational companies and few enlightened Nigerians, patronised the banking industry during the formative stages. This was because at this period, banking

cultuie had not been fully cultivated and partly because the foreign banks were known to be discriminatory against the Nigerians.

However, the public sector of the colonial government benefited immensely from the early innovations in ICT. This was because early telecommunications, such as telephone and telegraph, are used by the colonial government to connect the colonial office in London with Lagos and the other commercial centres in the country. According to Ajayi, Salawu & Raji (2004) the development of telecommunication began in 1886 when a cable connection was established between Lagos and the colonial office in London. By 1893, government offices in Lagos were provided with telephone services, which were later extended, to Ilorin and Jebba in the hinterland. Between 1946 and 1952, a three-channel line carrier system was commissioned between Lagos and 'Ibadan and was later extended to Kaduna, Kano, Benin and Enugu. Thus, these early innovations in ICT were used to improve communications between colonial administrative centres. No officially documented evidence of improvement in the banking sectors of the economy as a result of early innovations in ICT during this period exists.

According to Woherem (2000), banks such as the United Bank for Africa and Standard Bank (Now First Bank) introduced the IBM 370 series of computers linked with printers during this period.

However, it was not until 1982 that many banks began to computerise but this was limited to operational purposes. During this period, processing of information by banks was based on the centralised architecture with a mainframe computer running a multi-user operating system and various users connected it via terminals. However, there was the advent of PCs with only floppy drives and later PCs with 5 to 10 megabytes, hard disk with 32 to 512 kilobytes of Random Access Memory

(RAM) at the middle of 1980s.

In the same vein, after independence, the imperative of national development led to the inroad of the first, digital computer into Nigeria in 1963. 1 his was in connection with the 1962 / 63 national census data. Initially, banks were sceptical of the performance of these machines compared with the big mainframes that were used in the processing of information in some banks at this period. Consequently, they were used mostly for word processing and spreadsheet operations. However, with little increase in the hard disk and RAM capabilities of the PCs, the mainframe-based banks began to deploy PCs to their low-end branches (Woherem, 2000). In 1984, networking began in Nigeria and processing based on central mainframes gave way to a more decentralized approach with Local Area Network (LAN) within branches (Oluyemi, 2001). This boosted the PCs market in Nigeria.

In the early 1980s, there was the introduction of Automatic Teller Machine (ATMs) as an electronic innovation by a Nigerian bank. Some other banks followed the bank s experience but the product was not well received by the banking community and this curtailed its spread in the early 1980s (Zarma, 2001).

According to Nwachukwu (2002) within a span of ten (10) years, 1963 to 1973, the total number of computers in the country stood between twenty and twenty-five. By 1977, the total number of installations had grown to around seventy. It was at this period many government agencies and parastatals as well as very few commercial banks began to show interest in computers.

In spite, these developments in the early 1980s, the level of bank technology remained relatively low, in term of both international standards and local needs. According to Ogwuma (1998), these inadequacies could be explained within the compass of the economic crisis that befell the country in 1980s and the subsequent

sluggish economic growth, which provided inadequate base for sustaining technology advancement in any sector of the economy.

Second, there was low information technology skill and lack of technology base needed to foster the growth of indigenous banking technology. As such, the banking sector was almost entirely dependent on imported technology.

Third, high costs of foreign exchange, constrained both the importation and the spread application of banking technology.

Fourth, supporting infrastructures such as electricity and telecommunications, which are needed for the effective use of banking technology, have been grossly inadequate. Fifth, the existence of uncompetitive banking sector, prior to the adoption of structural reforms in 1986, did not create the necessary incentives for innovations.

In the face of the problems mentioned above, the pre-SAP period witnessed lack of change in internal structure of the commercial banks as well as bank-cl.ent relationship. At this point, Nigerian Banks were sufficiently manually based and minimal bank branches were established.

2.2.4.2 ICT AND BANKS IN THE POST-SAP ERA

The implementation of structural reforms of 1986 stimulated competition in the banking sector. This gave rise to significant increase in the application of modern technology and other devices by individual banks. In 1986, Societe Generale Bank of Nigeria (SCBN) introduces online, real-time banking in Nigeria but this was limited to its five branches in Lagos. Many other banks now tagged the new generation banks followed this lead. They introduced integrated banking applications, delivered through Wide Area Network (WAN) in real-time online mode. However, the old generation banks were known to be leapfrogging in the

automation of their banking services during this period (Woherem, 2000).

In recent times, however, the application of modern technologies has affected all aspects of the nation's banking industry from the standard retail operations such as cash withdrawal and Cheque processing to the creation and delivery of sophisticated corporate product such as foreign exchange swaps.

This whole process started in the 1990s when efforts were made by the CBN to strengthen the Nigerian payment system. It began with the use of automated bank note the, supporting infrastructures such as electricity and telecommunications, which is needed for the effective use of banking technology, have been grossly inadequate.

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In recent times, however, , the application of modern technologies has affected all aspects of the nation's banking industry from the standard retail operations such as cash withdrawal and Cheque processing to the creation and delivery of sophisticated corporate product such as foreign exchange swaps.

This whole process started in the 1990s when efforts were made by the CBN to strengthen the Nigerian payment system. It began with the use of automated bank note processing systems by the CBN. Later, the introduction of Magnetic Ink Character Recognition (M'ICR) - an automated system for sorting Cheque and other payments, that made it imperative for all banks to be computerized.

In 1994, the CBN set up the Nigerian Inter-Bank Settlement System (NIBSS), whose central operations is dependent on a computerised system called Computerised Inter- Bank Funds Transfer (CIFT). It is a real-time system where banks can transfer money (high value) to each other and the transfer is effected and settled same day (Adebowale, 1996).

Also in 1993, the CBN applied for membership of Society for Worldwide Inter-Bank Financial Telecommunication (SWIFT) and was registered in 1994. SWIFT provides international payments and settlement services. It offers communication of the messages of value among members of the cooperative, which are mainly banks worldwide.

The use of Automated Teller Machine (ATMs), which started in the early 1980s, became popular in the 1990s. In addition smart cards, Electronic Fund Transfer (EFT) and electronic wallet became widely used since 1990s.

The use of Smart Card began in late 1990s when the CBN granted an approval to All States Trust Bank in 1996 to introduce a financial product known as the

Electronic Smart Card Account (ESCA)i The pioneering efforts of this bank, was followed in 1997 with the introduction of a “Paycard” by Diamond Bank in the System. Also, in 1998, the CBN gave an approval to Smart Card Nigeria Pic, a company floated by a consortium of nineteen licensed banks, to produce and manage cards called “Valucard” issued by the member banks.

Also in 1999, another consortium of more than twenty banks under the auspices of Gemcard Nigeria Limited got approved to introduce the Smart-pay scheme. During this period many banks introduced quality electronic based products such as telephone banking, personal computer (PC) banking. Online banking via the internet and mobile banking is an attempt to complement the drive for an efficient payment system foi the country (Zarma, 2001).

These variegated products have led to business re-engineering both in the internal structure and customer relationship. For instance, ATMs gives a customer easy, access to his / her cash whenever occasion demands it (24 hours a day and seven days a week). The valuecard replaces cash or Chequebook. PC - banking makes use ot Intranet Proprietary Software that enables a customer with a PC and telephone to screen his account, print bank statement and carry out account transfer activities without visiting the bank (Zarma 2001).

Thus, it is evident that the present interest in ICT led banking in Nigeria became serious since 1990s. Ehikhamenor (2003) observes that Nigerian banks seems to have acquired and developed ICT applications for almost every banking operation namely; treasury operation, human resources, bank master, reconciliation, loans and deposits, • money market, assets management, fund transfer, general ledger, management information system module, teller, security management, budget, domiciliary and multi-currency among others.

Despite these developments, Ehikhamenor, (2003) argues that banks did not initially make much impression on their customers largely because neither the **queues** of customers nor the length of time to get a transaction through got shorter. These problems have usually been explained via such factors as power cut, system breakdown, and problems of peak periods of banking transactions. As such by mid 1990s not many banks had yet ventured into online transactions and many variegated ICT products. The banks that did so had no competitive edge over other banks as a result of their ICT implementations.

However, Woherem (2000) documented a survey on the impact of ICT on the financial performance of banks in Nigeria conducted by the African Development Consulting Group (ADCG) in 1998, In a sample of-nineteen (19) banks stratified into old and new generation banks, it was revealed that while the new generation banks were making more investment in ICT reflecting in high Personal Computer (PCs) per capital and higher ICT budgets, the old generation banks were not. Implying that while the new generation banks were using ICT as competitive tool, the old generation banks does not.

Although, the financial performance of the new generation banks was a mixture of high and low performance, the strong among the new generation banks were able to give the old generation banks stiff competition as a result of their ICT competitive strategy.

It should be noted, however, that these developments have not all together been hitch free. During the 1980s and 1990s, the operating milieu of the banking industry was very volatile and crises prone. Apart from the political crisis and an appalling human right record of military that brought international community sanctions on the country, there was deteriorating public utilities, galloping inflationary trend, abject poverty among the generality of the citizenry as well as phenomenal bank distress.

Consequently, the banking sector went through thick and thin in the struggle loi survival.

Thus, the recent interest in ICT by the Nigerian banks is a belated event. This stems from the fact that many countries in Asia and other third countries toed the line of the Western countries like UK and USA long time ago. Lack of completely deregulated economy, long military rule and isolation of the Nigerian economy by the international community as well as lack of an enabling infrastructural environment explain this belatedness. On the other hand, interest on ICT by these banks has been motivated largely, by the spill over effect from the experience of the western world especially UK and USA, the aggressive marketing strategies of ICT companies as well as the actions of the Nigerian government, particularly, since 1999, rather than an internally induced organic process of change in the sector. Since 1999, for instance, the government had made more frantic and obvious efforts through government supported workshops and conferences, to fashion an agenda for National ICT infrastructural development. To this, effect, the Nigerian Communications Commission (NCC), which was formed in 1992, played a very critical role. Thus, these efforts of the Federal Government culminated in the launching of an ICT policy for the country in 2000. Although, this is unprecedented in Nigeria, it js just a reflection of what is happening at the global level. The policy is meant to create an enabling environment tor an ICT led society.

However, Woherem (2000) observes that the Nigerian banking industry still has a long way to go in the evolving ICT driven banking worldwide. This is because there are eleven major categories of ICT related problems facing the banking industry in

Nigeria.

These include:

1. **System Downtimes:** Woherem (2000) observes that constant link failures from Nigeria telecommunication (N1TEL) lines as a result of inconsistent Power Holding Company of Nigeria (PHCN) electric power supply, affects banks with Wide Area Network (WAN) as they fmd it difficult to provide online, real-time services.

2, **Lack of Investment Capital:** He also observes that banks are in short supply of funds to acquire new information technologies as well as modernize the existing ones. As a result many banks are yet to computerize most of then- operational process (even non-core banking processes) to engender better and more prompt services to their customers.

Consequently, the rate of ICT adoption in Nigerian banks is generally slow as most banks cannot afford ATMs, credit cards, electric wallets, Customer Information File (CIF) systems, and modern network. In addition, most banks staff does not have Personal Computer (PCs) for their exclusive use. As such, the ratio of PCs to the number of staff is much lower in Nigeria than- for the rest of the developing world. He observes that in most banks each of the PCs is a stand-alone and most banks do not have Local Area Network (LAN). Thus, the multiplier benefits that would accrue from connecting all the PCs together are missing. He also noted that, in few cases where banks have LAN or WAN, they are used mainly to link the terminals of their banking applications to a server, which is usually located in their head offices. Thus, only a few banks have interconnected a small proportion of their PCs over a LAN because of lack of funds.

3. Lack of Knowledge of How to Develop ICT System Internally: According to Woherem, (2000) most systems used in the banks are developed externally or are off-the-shelf banking applications. This destroys internal development of ICT knowledge. He suggests that this problem can be surmounted through training ICT personnel as well as turning ICT departments of Nigerian banks into proper computer departments by embarking on development of some of the systems in-house.

4. Lack of Internal Maintenance Skills or Culture: I **his problem borders** on over reliance on external consultants for maintenance of banks' ICT systems. This over reliance does not only compound the problem of lack of funds, but equally affects regular and up-to-date maintenance of systems in use. Consequently, it is difficult for banks to plan ahead due to lack of funds to satisfy regular maintenance requirement. However, Woherem (2000) suggests that if banks embrace the do-it-by-yourself practice it will save expenditure and enhance local expertise.

5. Many Nigerian banks introduce ICT systems without proper feasibility studies which will specify requirements before embarking on a design. Codes are quickly developed and completed system is introduced without any systematic unit or integration testing of the code or system. Also, off the shelf ICT systems are purchased without prior specification of the requirements of the specific banks where they will be used, and usually without documented systems development life cycle model (SOLM). They aiso operate without knowledge or use of any in house national or international quotation standard.

The Absence **of ICT** Strategies: Most ICT Systems in Nigerian banks operate in an adhoc manner; their actua. ICT needs are neither determined nor projected. Usually there is no attempt to evolve short or medium term plans for their ICT needs bearing in mind the business strategy of their organization.

Many Systems are bought as a result of the solicitations or gimmicks of vendors rather than from some prior determined needs of the banks. This problem is wholly because banks staff lacks knowledge of their own needs and how to proactively seek to satisfy those needs by themselves. Thus, they rely heavily on vendors to inform them of ICT solutions that are best for their banking operations. As a result, the banks tend to react to information 01 proposals made or put to them by vendors, instead of deciding their own ICT needs and going out to seek vendors that could meet those needs, fhis means that many ICT implementation projects in Nigerian banks are vendor pushed

rather than need pulled.

5. Lack of the basic infrastructure and facilities for the exchange of information; Worehem (2000) observed that sophisticated and modern telecommunications exchanges, internet gateways and backbones, Intranet pipes and backbones. Satellites, Integrated Digital Systems Network (ISDN), Packet switching systems, etc. are generally lacking in Nigeria as a whole and not just in banking sector.

6. **Lack of Maintenance Culture in Nigerian Public Networks:** This has often led to frequent breakdown in most of the equipment required for information exchange, with its attendant's inefficiencies in the building sector.

7. Unhelpful **Government Action:** Government policies and decrees according to Woherem (2000) have been known to be counter- productive to the development of certain key private telecommunications projects.

Banks Reluctance to Collaborate: As a result of the problem with Nigerians telecommunication services, especially the problem of incessant link failures or downtimes and the inability of the banks to keep their systems up and running most of the times, the banks have started thinking of using electronic wallets based on the smart-card technology to obviate the need to carrying physical cash or rely on the ability of online, real-time systems. The parochial attitude of the banks in the country however, is a limitation to the possibility of ensuring that the banks pursue the acquisition of the technology jointly or in a-concerted manner. In Nigeria, the banks see any new product as a means for acquiring a competitive edge over their competitors and would generally prefer not to share it.

2.2.5 Functions of Information and Communication Technology (ICT)

In the past, capital, labour and raw materials were regarded as the critical ingredients for productivity. Today, information is not only regarded as the fourth factor of production, it seems destined to be progressively the relatively most significant of the first three (Felix, 2001). ICT has been a major tool for achieving goal for companies and countries, in terms of numbers of computers in use, the number of PC networks in use and the level of telecommunications infrastructure, (Kayode, 2005). Through ICT it is now possible for one country to provide the capital, but use the labour and raw materials of another, regardless of distance. ICT and telecommunications in particular has made it possible for countries now to trade with each other without border restrictions.

In order to provide service in the highly competitive world of today, in which

countries and companies alike are struggling to acquire new business and financial strength, either to maintain or improve market shares in the international and local business, it is important for them to wire themselves in readiness for the traffic of information that has now become a fourth factor of production. As Gates (2000) set it out:

> "Conventionally, business share information internally by exchanging paper work, placing telephone calls, cind/or gathering around a conference table or white board. Plenty of time and plenty of expensive face-to-face meetings and presentations are required to each good decision, this way the potential for inefficiency is enormous. Companies that continue to rely on these methods exclusively risk losing out to competitors who reach decision faster while devoting fewer resources and probably fewer layers of management to practice. ”

For countries to have Worldwide connectivity, it is vital that they set up the infrastructure that would facilitate inter and intra company communications. The free flow of information within and between countries and organizations is critical to competitive advantage, (Gates, 2000).

ICT has become an agent of change. It is the major force ushering in the global village”. It is being hailed as a major contributor to:

(i) The democratization of countries.

(ii) Deregulation of industries.

(iii) Privatization of government parastatals.

(iv) The networking of groups and companies.

(v) The development and distribution of timely and relevant information.

Below are some of the major functions of Information and Communication Technology:

(a) The reduction of uncertainty in decision making, though it ought to be recognised that more information may add other possible outcomes to a situation not previously considered thus increasing uncertainty.

(b) The provision of error signals, which indicates any deviation from planned performance or operation thus aiding the control of activities.

(c) The provision-of a mechanism for communication of plans forecasts, procedures and guidelines.

(d) The supply of historical evidence of transactions, levels of performance, results and decisions.

The reduction of complexity, through enhancing user's knowledge and understanding of the situation (Ahmad, 2008)

2.2.6 Concept of Corporate Performance

Evaluations of corporate practices invariably use the notion of corporate performance. Akin to corporate performance are a number of semantically related terms, such as corporate health, success, efficiency, effectiveness, productivity or excellence. Some authors use the terms interchangeably often ostensibly in order to overcome terminological confusion. Others come up with additional labels such as organization or corporate goodness. Whichever term is adopted the end result is the same because there is no difference between them. The terms are the same and they are accepted as such.

Strategy research focuses on performance consequences of strategic choices. For quite sometime, corporate performance has almost unanimously been equated with

financial/economic performance. Recently, however, broader conceptualizations of performance are being discussed. These recent conceptualizations do not reject financial / economic performance measures but rather question their exclusive use, i.e. their comprehensiveness for evaluating organizations.

2.2.7 Concept of Business Process Reengineering

Hammer (1990) defined BPR as the "fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance - cost, quality, capital service and speed".

According to Laudon (2001), competitions among companies oblige them to employ the new technologies for improving productivity level of their resources, Productivity growth directs companies increase market share. Business process reengineering has been adopted by many firms in an effort to improve their competitive position and enhance their ability to produce customer satisfaction and delight (Ahmad, 2008).

Nowadays, demands of customers change continually, and strong competition makes companies retain their customers and delight them. So, hierarchy structures do not fulfil companies' competitive, requirements anymore (Laudon, 2001) and organisational modification is necessary for companies to stay in the compebtive market.

Laudon (2001) concluded that radical changes are the main characteristics of BPR to alter organizational structures from duty orientation to business process approach.

Therefore reengineering is one of the important necessities for companies to fortify their situation in the market.

BPR involves the fundamental redesign of a business process. It has been called the

"new industrial engineering" in contrast to the old Taylorian industrial engineering based on task decomposition and specialization (Grover, Kirk & James, 1994). BPR could involve a change in the way the process is organized, the ides of the participants involved in the process, elimination of steps in the process or a change in their temporal sequence. In its purest sense BPR initiatives should start with a "clean slate" (Grover et al, 1994).

According to Chin (2003), companies which are employing appropriate business process reengineering throughout their supply chains will have more effective and efficient ICT investment. Furthermore, higher productivity (that is higher profit) with respect to the input resources will be experienced. So, reengineering accompanied by using ICT cause companies to use their resources as effective as possible.

Implementing ICT in business is traditionally aimed at automating the pre-existing processes in an organization. ICT cannot elevate productivity drastically unless management processes, including the very organizational structure, are changed to accommodate and maximize the benefits of the current advances in the ICT environment.

• **Business Process**

Business process is a structured, measured set of activities designed to produce a specified output for a particular customer or market. It implies a strong emphasis on how work is done within an organisation (Devenport, 1994).

Also business process is defined as a group of related tasks that together create value for (internal and external) customers. The goals followed in the business process are:- (a) Customer Satisfaction, (b) Return on Investment, and

(c) Market Share (Hales and Savoie 1994; Hewitt 1995).

These goals require process Inter-dependencies and System dependencies that are established through the integration of various business processes.

Business process re-engineering (BPR) is not another technique for downsizing an organization. Re-engineering is not another quality improvement, just-in-time, or cycle in reduction program. These activities typically focus on improving the existing process, whereas re-engineering has the total of radically changing the piocesses (Hammer, 1990). Business Processes Reengineering (BPR) concerns the fundamental rethinking and radical redesign of a business process to obtain dramatic and sustained improvements in quality, cost, services, lead time and productivity.

Reengineering programs must first concentrate on processes that have an impact on providing customer value, satisfaction, and delight while enhancing a firm s stiategic advantage over its competitors (Hammer, 1990). Therefore, the driving force ' behind effective business process reengineering efforts must be those critical factors which influence the customer's perception of value, and improve the firm 's competitiveness.

BPR focuses on the whole process string from product conceptual stage to final product design. It provides the opportunity to reengineer the process or to reduce radically the number of activities it takes to carry out a process with the help of advanced Information and Communication Technology, (Hammer and Champy 1993). Business Process Reengineering aims to achieve quantum improvements and ICT is the primary facilitator to achieve the requested goal of BPR (Limayem, 2006).

2.3 Empirical Review

The Growing Need for Information Technology

According .to Thong (1999), attempted to consolidate the myriad of information technology adoption research by developing an integrated model of information systems adoption. In the last decade, the force of information technology (IT) has transformed the business environment. We are in the midst of a paradigm shift from the industrial paradigm of wealth creation to the information paradigm of wealth creation; and technology is the driving force behind these changes (Elliot, 1992). During this same time period, the field of accounting has undergone an extraordinary transformation relative to its use of Information Technology in commercial banking operation. Information Technology has increased our ability to capture, store, analyze, and process tremendous amounts of data, increased our ability to change business processes, and has significantly impacted the control process.

The American Institute of Certified Public Accountants (A1CPA) has recognized the growing importance of Information Technology. The AICPA created the top 10 technologies process and the Information Technology member section in the late 1980s and early 1990s. Furthermore, the AICPA created the Certified Information Technology Professional (CITP) designation, which is a CPA who is credentials as a technology professional and recognized for his or her unique ability to bridge the gaps between business and technology. The Institute of Management Accountants (IMA) also recognized the growing importance of information technology. In 1990, the IMA warned that accountants in banks who stay on the traditional accounting turf risk being overtaken by computer experts (Seigel and Sorensen, 1999).

According to Ahamadkaleem, (2008), opined that bankers in Pakistan perceive electronic banking as a tool for minimizing inconvenience, reducing transaction

costs and saving time. Similarly, they believe that electronic banking increases the chances of government access to public data, increases the chances of fraud and that there is lack of information security. Madueme (2010), researched on evaluating banking productivity and ICT using Translog production function in Nigeria, the results showed that bank output such as loans and other assets increased significantly to charges in expenditure on Information communication technology.

IT labor expenses impacted more on bank output more than capital expenditure on ICT gadgets. The study recommended on the need to increase investments in information technology in order to increase productivity of banks. Advancements in information technology (IT) have enabled companies to use computers to carry out activities that were previously performed manually. Accounting systems that were previously performed manually can now be performed with the help of computers. Therefore, improvements in the information technology have facilitated the use of management banking procedures. Also advancement in technology has brought about many changes and competition among banks and non-bank financial institutions which raises concern as to why some people adopt one distributional channel and others do not. New services are difficult to evaluate where quality of trustworthiness dominates (Patricio, 2003).

It is important to study the impact of technology based on bankers perceptions and behavior (Lymperopoulos and Chaniotakis, 2004).IT~based distribution channels reduce personal contact between the service providers and the customers, which inevitably leads to a complete transformation oftraditional bankcustomers relationships (Barnes and Horwlett, 1998).

Literature is replete on business value of ICT. The central issue is whether the

tremendous amount of ICT capital invested has had any impact on the performance of the investing firms. However, in this review the intention is not to give details of prior work, rather, an attempt to discuss key findings as well as the major hurdles researchers and practitioners face in this area.

Prior research on ICT in the banking services sector falls into one. of the following two categories namely; descriptive analyses of the use ot ICT and the value it generates, and, measurement of the business value of ICT.

The first category is primarily based on case studies at the firm or industry level and offers useful insights about significant issues. While research in the second category e. research on the measurement of ICT on business value consist of studies on the impact of specific technologies and that of the overall use of ICT.

One of the studies in the first category is that conducted by Weill (1992). He classified ICT into three categories based on the management goals supported by the system. The study of the valve manufacturing sector identified significant productivity gains due to transactional ICT, but did not find any positive impacts for strategic or informational (ICT infrastructure) systems. Still another study by Brynjolfsson and Hitt (1993) used firm level data on three hundred and eighty (380) large firms for the period from 1987 to 1991 to measure the ICT impact. This study found that ICT had made a substantial and statistically significant contribution to firm output. Thus, so far, empirical findings reported in the literature on impact of ICT investment at firm or industry level, are mixed.

Another study was undertaken by Calderon et al (2001) on the impact of ICT and the performance of financial companies in South Korea. I he study coveis a peiiod of three years (1991 -1994) and examines the relationship between the effectiveness of ICT and financial growth of publicly traded financial companies in South Korea.

It measures ICT effectiveness based on user satisfaction, support for internal business process and system reliability. It reveals that ICT effectiveness and financial growth of Korea banks are significantly associated statistically. This shows an insight into the thesis that enterprises with high business information intensity will show a positive association between effective ICT and economic peiformance.

The second study, though not particularly on banking sector, was conducted by 1 am (1998) between 1983 and 1991, on the impact of ICT investment on business performance in four Newly Industrial Economies (NIEs) and Asia namely; Hong Kong, Singapore, Malaysia, and Taiwan.

In this study, three pieces of evidence seem to emerge that are generally observed across country boundaries. First, ICT investment is not correlated with shareholders return. Second, there is little evidence that the level of computerization is valued by market in developed and new-developed countries. Third, there is no consistent measurement of ICT investment as indicated by the mixed results across different performance ratios.

In the second category, Steiner and Teixeira (1990) drew on a wealth of experience with many of the large American banks in McKinsey and Company's financial services consulting practice and presented arguments about why ICT investments in the major lines of the commercial banking business create value for banking customers, but destroy profitability for the firms that service them. Bansal, Kauffman, Mark & Peters (1993) discussed the advances in risk management technology and suggested the use of business value linkage to identify the benefits of such ICT investments. Banker and Kauffman (1988) showed that ATM membership choice has a significant and positive influence on a bank branch's

market share of local deposits based on a study of a group of Pennsylvania banks. Lichtenberg (1995) found that the earliest adopters of ATMs were able to achieve a sustainable gain in the market share based on an analysis of the Federal Deposit Insurance Corporation data in USA. Alpar and Kim (1990) used a translog cost function to measure the impact of the use of ICT on economic performance of banks. Based on their analysis of the Federal Reseive Bank's Functional Cost Analysis (FCA) data, they concluded that. ICT has been cost reducing and labour savings. Based on the same data set, Parsons and Denny (1993) found that although, not all banks benefit from ICT spending, some banks do.

Parsons, Gotlieb & Denny (1990) also used a translog cost function to analyse data from two Canadian banks and found that ICT investment did not increase total factor productivity.

In a similar study, Davamanirajan, Mukhopadhyay & Kriebel (2002) focused on the trade services application in global wholesale banking and used the production function approach to estimate the impact of ICT in this application. In this study, the estimate of the output elasticity of ICT is positive and statistically significant. In addition, they find that the return on investment of ICT (increase in dollar revenue per dollar spent in ICT) is about 100% per year, holding labour input constant. The study also provides another instance of direct evidence that ICT has a favourable impact on productivity in the financial services sector.

The contradictory findings on the value of ICT are symptomatic of the difficulties of conducting. Such an analysis. Several authors have called this a measurement problem (Steiner and Teixeira, 1990; Parsons and Denny 1993 and Davamanirajan et al, 2002;). The concerns expressed by the authors are also in broad agreement. Overall, they agree that in the study of nature one has to contend with two complex

issues: measurement and data. Because ICT impact cannot be assessed in isolation, confounding effects of others inputs (e.g.; labour and non-ICT capital) have to be taken into consideration. The problem is further compounded by the lack of quality data on ICT investment.

In the case of Nigeria, very little empirical research has examined ICT impact on corporate performance. One of such limited studies was conducted by Idowu, Alu & Adagunodo (2002) on the effect of ICT on the growth of the banking industry in Nigeria. This study assesses the perception of banking customers on the quality of banking services using a questionnaire survey. The study sampled five commercial banks namely; Wema Bank Pic, Union Bank, Omega Bank, Corporative and Access Bank. It examines one major issue; impact of ICT on bank services but in thiee different perspectives namely effect of ICT on banking services, effect of IC1 on customer services and on bank productivity measured in term of speed of operation. It concludes that ICT has contributed immensely to growth of the banking industry in Nigeria.

The second study is that conducted by Oyeyinka (1996) on ICT in the finance sector. It examines the adoption of computers in Nigerian banks with specific reference to the specific ways computer is affecting the organisation of work and constraints to its adoption. The study covered twenty financial institutions comprising of twelve commercial banks, five merchant banks, one development bank and two mortgage institutions. Although the study did not set out to evaluate productivity gains, it concludes that given the enthusiastic adoption of computers by Nigerian banks, the perceived benefits may have outweighed the costs of adoption.

In the same vein, Ehikhamenor (2003) conducted a study to determine the expectations and success of ICT implementation on the banking sector in Nigeria.

The study was a survey of fifty-six (56) banks in Lagos. It concludes that almost all sampled banks have ICT policy, which is meant to achieve full application of ICT; to meet organisational goals; to secure competitive advantage and to be up to date. According to the study, only 54.6% of the banks actually achieved some measure of successful implementation. The expected benefits of investment in ICT were realised in only relatively few banks. Thus less than 40% of the banks were poised to maximise the benefits of ICT through major investments.

Omoyi (2005) conducted a similar study on the Impact of Information Technology on competitive strategy and corporate performance of Nigerian banks. The study utilised data collected from seventeen sample banks to measure their level of commitment to the use and deployment of IT. Multiple regression analysis was employed by the study to establish the relationship between IT investment and the competitive strategy of Nigerian banks. The study concluded that, at 5% level of significance, IT investment is significantly related to earning per share and deposit base of the banks but strategic commitment of banks to the use of IT has no contribution to the profitability of banks.

These few studies undertaken to determine the impact of ICT in banking in Nigeria indicate that there is paucity of literature on impact of ICT on corporate performance in the banking sector. Besides, the ones available have not been specific on financial performance. Thus, this present study fills this gap in the literature, particularly with respect to bank performance within the Nigerian context. Though the study looks at the impact of ICT at the firm level, it takes a very broad perspective because it includes various banks in terms of size, age, and geographical spread among other variables.

Unlike the previous studies that have been concentrated in the Western and Eastern

parts of the country this study is wide spread geographically. It adopts sample from the North, West and Eastern parts of the country. It includes new generation and old generation banks and considers financial information of the banks before and alter consolidation. Besides, the study considers bank performance measures cutting across profitability, efficiency, and business processing reengineering. This method is unprecedented in the context of the impact of ICT on bank performance in Nigeria. In addition, while studies such as Idowu et al (2002) and Ehikhamenor (2003) and Omoyi (2005) embarked on survey of opinions on the effect of ICT on banks, this study uses very objective criteria (such as the documents of the banks and information from bank experts) to determine the impact of ICT investments on profitability and efficiency via such performance measures as Gross earnings, customers satisfaction and operational efficiency. Unlike other studies, the questionnaire elicited facts and supported by physical observation rather than the subjective opinion of respondents as done by other researchers.

2.4 Theoretical Framework

2.4.1 Technological Revolutions, Information and Growth

Although tremendous technological advances took place over the past 100 years in several sectors, such as transport, communications, electrification and medicine, recent ones are much more comprehensive and powerful. Their salient characteristics involve convergence and interaction of many strands of technological change, with social consequences far more profound and far more difficult to foresee. They fall into three basic categories or strings of technical changes: in materials, in biotechnology and in information (Hallberg and Bond, 2000).

Research has discovered many new, innovative materials. Transport enjoys lighter materials for fuel efficiency; health care takes advantage of dynamic images and

intelligent prosthetics; and the energy sector benefits from many new materials as well. The banking business is becoming highly information technology based due to its inter-sectoral link; as it appears to be reaping from most of the benefits of revolution in technology, as it is seen by its application to almost all areas of its activities (Akinuli, 1999). Technology has broadened banking and as a result of this it has changed the nature of banking in competitive environment in which they operate or domiciled. A wide opening has therefore been experienced around the world for banks and they are currently taking due advantage of these innovations to provide improved customer services in the face of competition and faster services that enhance productivity (Akinuli, 1999; Ovia,2005). Technological advancement facilitates payments and creates convenient alternatives to cash and cheque tor making transactions. Such new practices have led to the development of a truly global, seamless and Internet enabled 24-hour business of banking.

Technological advance in payments are important due to the fact that it will be feasible to outsource quite a number of the banks role in the payments system. Also banks regulation can be more technologically dependent and better focused rathei than focusing on conceptual guidelines. ICT revolution both in terms of innovation rate, speedy operation, and cost per unit (portraying reduction in average total and marginal costs) has made a good number of banks embrace the use of ICT infrastructure in their operations (Akinuli, 1999).

In today's business, competition, deregulation and globalization have compelled Banks to offer service 24 hours around the globe, whereas the significance drawback, on the other hand, lies in its inconvenience and security factors. However, both these factors have a significant and profound impact on banks performance and customer service deliver. The relationship that revolves between

ICT expenditures, banks performance delivery is conditional upon the extent of network effects. If the networks are low, ICT is likely to:

i. Reduce payroll expenses.

ii. Increase market share.

iii. Increase revenue and profit.

Furthermore, in a broader perspective, ICT, deregulation and globalization in the banking industry could reduce the income streams of banks and thus the strategic responses of the banks, particularly the trend towards internal cost cutting, mergers and accusations are likely to change the dynamics of the banking industry. This chapter seeks to determine if banks have earned higher income and delivered a high quality service than in traditional way. The main issues that can prevent consumers positively include the convenience aspect of the service, ease of use and its compatibility with their lifestyle.

2.4.2 Contingency Theory

Contingency theory suggests that an information system should be designed in a flexible manner so as to consider the environment and organizational structure confronting an organization. Information systems also need to be adapting, to the specific decisions being considered. In other words, information systems need to be designed within an adaptive framework. Review of accounting information system literature also indicate that most AIS studies have incorporated contingency factors such as organizational structure, business strategy, and environmental condition in their research model but have neglected the influence of IT on AIS design.

Furthermore, the few studies that have examined the relationship between AIS design and IT have defined IT in a narrow perspective (Ismail, 2004). Similar to IT researches, these studies viewed IT from the technological perspective only but

failed to incorporate other perspectives of IT sophistication such as informational, functional and managerial. Hunton and Flowers (1997) suggested that a more comprehensive AIS study is needed to explain the relationship between IT and accounting and its subsequent impact on organization in general and accounting/accountants m particular. Furthermore, most of previous 1T/A1S studies were conducted in developed countries (Ismail and King, 2005). Very few of such studies have been carried out in developing countries especially in the Middle East. Due to the continuous flow of considerable amount of empirical studies which investigate the contingency factors

and accounting and/or IS and indicates the importance and vitality of this theory, this study is theoretically and empirically constituted upon contingency theory which has long been applied in both accounting and information system disciplines. The contingency theory suggests that an organization's structure is based on contextual factors such as environmental conditions, business strategy, organizational structure, production technology, and management style (Ismail and King, 2005).

2.4.3 Business Models, Commerce and Market Structure

The major way in which information technology is affecting work in today's organization is by reducing the importance of distance. In industries, the geographic distribution of work duty is changing significantly. Therefore for instance, some software firms have found out that they can actually overcome the tight local market for software engineers in sending projects to India or other nations of the world where the wages are reduced. Furthermore, this type of arrangements can take advantage of the time differences so that critical projects can be worked on. Firms today can outsource their manufacturing to other nations of the world and rely mostly on telecommunications to keep marketing and distribution teams in close

contact with the manufacturing company.

Information technology can enable a finer division in terms of labour among countries, which in turn affects the demand for various skills in each nation. Technology enables various types of work and employment to be decoupled with one another. Firms have more freedom to locate their economic activities, labour, capital, creating greater competition among regions in infrastructure, and other resource markets. It also opens opportunity for regulatory arbitrage: firms can increasingly choose which tax authority and other regulations they want or intend to adopt. An infrastructure of computing and communication technology, providing 24-hour access at low cost to almost any kind of price and product information desired by buyers, will reduce the informational barriers to efficient market operation.

2.4.4 The Era of Modern Banking in Nigeria

Nigerian banks especially the new generation banks, have realized the imperative of good and prompt services. Some customers lost their deposits in the erstwhile technically-insolvent/distressed banks, customers have now become wiser, more discerning, alert and sophisticated with regards to choosing where it is safe to put their money, and also where they will be served promptly. Thus, they have started looking at the level of service and professionalism of the banks before depositing their funds. Proximity to the bank is no longer the issue: safety and the level of service, with regard to the quality, efficiency and speed have become the major imperative. The banks have realized that the way they can provide quality service is through the use of modern technology.

Hence, there is a growing need for adoption of new technologies in the Nigerian banking operations. The new generation banks make use of technology to provide

efficient, online and real-time services. This therefore means that their customers can, for the first time in the history of banking in the country will go to any part of the country where there is a branch of their bank and make withdrawals or conduct an increasing range of other banking business. Before the new era of banking in Nigeria, the banking industry was characterized by inefficiency and truly frustrating service. But today, most banks in Nigeria compete mainly via the use of technology on the amount of time it takes to services their customers. Services in the new generation banks now take up to 2-5 minutes to complete, as opposed to hours of queuing in an unfriendly and uncontrolling environments. As a result of this banking operation in Nigeria has become computer based delivery systems; the new generation banks have become very profitable. They have introduced integrated banking systems, using WANs. Thus their customers do not need to carry cash for long distances.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This is a study on the impact of ICT investments on corporate performance in the banking sector. The study analyses the impact of ICT investments on the performance of some selected banks. This chapter presents the overall design and approach to the whole study, including methods of data collection as well as procedure adopted in data analysis.

3.2 Research Design

According to (Asika, 1991), Research design means the structuring of investigation aimed at identifying variables and their relationships to one another. A research design is very useful as it helps the researcher to develop a mental image of the structure for gathering the data and the analysis that will follow. The research study set out to assess the impact of information technology on commercial banks in Nigeria and to provide vital information in order to extract the sincere perception of the bank customers and staffs in Nigeria with regards to the position and role of information technology in commercial banks in Nigeria.

The purpose of this research is a random sampling technique of a bank that has been selected, the population and sample size of this project is based on one bank in Nigeria, that is Guaranty Trust Bank Pic which will be adopted for the questionnaire both to the employer (bankers) and customers of the selected banks. This research work wiil examine the impact of information technology in commercial banks in Nigeria. The method employed to examine the impact of information technology on commercial banks in Nigeria shall be the survey method. Data collected from thequestionnaire shall be presented using with the aid of

manual and electronic application such as the Statistical Packages for Social Sciences (SPSS), while the hypotheses would be tested using the T-test statistical method and linear regression method.

3.3 Population and Sampling Technique

Population refers to the total number of cases in the focus of interest. The population of this research work will focus mainly on Guaranty Trust Bank Pic in Nigeria. The sample size used for this research work consists of one bank, which is Guaranty Trust Bank Pic. This bank was selected based on its oriented technology driven state, profitability, large capital base and reliable network of branches both (branch and e- branch) in Lagos, Nigeria. A total of hundred (100) questionnaires were issued to both customers and staffs of Guaranty Trust Bank Pic.

3.4 Method of Data Collection

Data for the study were collected at once but in three different places of the Federation. First, we collected information from CBN and NDJC libraries in Abuja, about banks and their performance measures. The second point of data collection was in Lagos. Data were collected from the head offices of the sample banks in three different areas namely Marina, Ikoyi and Victoria Island. The third point of data collection was at the branches of the sample banks in Abuja, Keffi.

A total of forty questionnaires were administered to the staff of the selected banks. Also, a total of forty (40) questionnaires were administered to the ATM customers spread over the selected banks.

The visits to the branches became imperative in order to confirm and corroborate the claims of the respondents to the questionnaire by physically observing the ICT applications in the branches of the sample banks. Specif cally, we observed physical ICT applications that are easily noticeable and accessible. We observed such ICT

applications as Facsimile systems, PC types, computer terminals, smarts' cards; electronic funds transfer facilities, ATMs, VATs, LAN, online facilities and home banking facilities among others. We talked to area managers of each branch visited and we asked questions relating to these ICT applications. This was done in order to ensure that the information derived from the questionnaires is reliable, valid and dependable.

3.5 Procedure for data analysis and model specification

Two sources of data collection namely primary and secondary sources are used in this study. The primary sources used by the study include questionnaire and observation. These were used to collect information to establish the relationship between I Cl related problems and bank performance while the secondary sources were used to collect information leading to the measure of corporate financial performance, which is the dependent variable and various investments of banks, wh ich are the independent variables.

Secondary sources were used to collect information on such issues as the piofile of the sector, historical evolution of information and communication technology in banking, its evolution in Nigerian context, typologies of ICT applications used in banking sector, importance of ICT in banking, meaning of such concepts as business process re- engineering, corporate performance and problems relating to the use of information and communication technology in the Nigerian banking sector among other issues.

Apart from the use of textbooks, journal articles and News magazines as secondary sources of information, this study found particularly useful publications of organizations such as CBN, NDIC, as well as the annual report accounts of various banks. The study got information on the number of licensed banks in Nigeria, the

addresses of their head offices, the number and names of quoted banks on the floor of the Stock Exchange among other issues, from such NDJC publications as banking supervision report, NDIC annual reports and statement of accounts as well as NDIC quarterly reports. In the same token, the study got vital information from such CBN publications as CBN annual report and statement of accounts, economic, and financial review and bullion.

Another organization whose publications were very valuable to the study is Research and Data Service Limited (REDASEL), Lagos. This organization publishes a book on Nigerian Banking Finance and Commerce (NBFC) annually. Available in this book are important information about banks' date of commencement of operation, staff strength, ownership structure, balance sheet, and profit and loss account among other information. The study corroborated the information from this book with those from annual reports and accounts of the sample banks. The researcher is not oblivious of the possibilities of window dressing of accounts of individual banks as such corroborated information will minimize such falsehood. Besides, these sources of information in respect of corporate financial performance are much more objective than subjective perception or opinions of respondents.

This study relies on both qualitative and quantitative analysis of data to establish the needed relationship between ICT investment and corporate performance.

In presentation and analysis of data, the study first used quantitative tools for analysis and subsequently used qualitative means to expatiate on the quantitative information provided. To this end, the study employs both parametric statistics and nonparametric statistics as well as inferential to analyze the needed relationships in

the study.

The first level of analysis aims at establishing the relationships stated in the first hypothesis of the study. For this purpose the study employed parametric statistics to establish the needed relationship. In particular, the study used multiple regression analysis. The multiple regression analysis was done with the aid of Statistical Package for Social Science (SPSS) version 15.0.'In the following hypothesis there is a regression equation needed to establish the relationship,

1.7 JUSTIFICATION OF METHODS

In the first technique, the banks and other members were interviewed personally to ascertain impact of ICT in Banking Sector.

The same procedure was used to determine the importance attached to financial performance, and their associated obstacles, and how ICT are evaluated.

To support the data collected through these interviews, questionnaires were administered to the various groups of employees of Nigeria Banks. A total of Employees were given a couple of days to carefully fill out the questionnaiies.

CHAPTER FOUR

DATA ANALYSIS, FINDING AND DISCUSSION

4.1 Introduction

This chapter examines the impact of TCT investments on the performance of Nigerian banks. Specifically, it looks at the significance of ICT applications and investments on the profitability of banks. In addition, the chapter equally analyses the relationship between ICT related problems and bank performance via the same perspectives. It is divided into four sections.

In this study, two levels of analysis are required. The first round of analysis deals with one key issue. The study analyses the contribution of ICT to the performance of banks. This is done with the aid of the independent variables identified in the section on research design in chapter three of this study.

The second round of analysis examines ICT related problems as they affect the performance of the banks.

4.2 FINDINGS OF THE STUDY

The study utilised data collected from the Two (2) sample banks. The sample banks are arranged alphabetically as follows:

Table 4.1: List of Sample Banks

Eco Bank	First Bank

Source:

NDIC and CBN Publication 2017

In each of these banks, we have collected data bordering on ICT investments, modern ICT applications, as well as issues concerning ICT related problems.

The sample banks and data collected bordering on these issues has been coded for the purpose of convenience as well as to conceal the identity of the sample banks. By concealing the identity of the banks, it implies that the study respects bank's sensitivity to information and a long standing tradition of secrecy. Beside, it is done in order to avoid litigation with the sample banks.

First, the study coded the sample banks using the following codes; Bnk01 to Bnk02, where 'Bnk' is an abbreviation for bank and code numbers 0 1 - 0 2 are numeric figures identifying the sample banks which are eight in number. This coding of sample banks does not necessarily reflect the order in which the names of the banks appear in Table 4.1 above and in Appendix VII.

Lastly, ICT related problems are also coded because of the constraint imposed by lack of space to depict these problems on a matrix table and in the form they appeared in the questionnaire. The coding and the original problems as stated in the questionnaire are reflected in Tables 4.2 and 4.3 below:

Table 4.2 Coding of ICT Related Problems (Part A) - Bank staff

Codes	ICT Related Problem
ICTPROBOl	Constant link failures from Nigeria telecommunication (NITEL) lines
ICTPROB02	Lack of investment capital
ICTPROB03	Lack of the knowledge of ICT system development internally
ICTPROB04	Inadequate ICT internal maintenance skill or culture
ICTPROB05	Lack of ICT management knowledge
ICTPROB06	Inadequate basic infrastructure and facilities for exchange of information

ICTPROB07	Lack of maintenance culture in Nigerian Public Networks
ICTPROB08	Lack of encouragement from govt on indigenous development of
ICTPROB09	Banks reluctance to collaborate

Source: Questionnaire Extracts (2015)

Table 4.3 Coding of ICT Related Problems (Part B) – Customers

Codes	ICT Related Problem
ICTPROB01	Difficulty in accessing account on the ATM Machine
ICTPROB02	Long time spent on queue for ATM Service
ICTPROB03	Cash shortage experience while making withdrawal
ICTPROB04	ATM fraud
ICTPROB05	Inadequate ATM facilities in a locality

Source: Questionnaire Extracts 2017

4.3 DISCUSSION OF THE FINDINGS

In Tables 4.4, 4.5 and 4.6 below, we have presented the summary of data collected from the published financial statements of sample banks used in testing the first hypothesis and the summary of the responses of respondents of each sample bank staff and customers respectively, used in testing the second hypothesis.

Table 4.4: Summary of means for dependent and independent variables

Year	Net Income (Dependent Var.)	ICT Investment (Independent	Other Investments (Independent Var)	Operating Costs (Independent Var)
2006	510,328,138.00	1 1,701,309.00	192,430,250.00	705,668,000.00
2007	707,379,000.00	12,553,571.00	206,375,125.00	677,768,750.00
2008	1,883,080,100.00	3 7,734,788.00	220,396,000.00	980,736,125.00
2009	1,987,005,500.00	24,779,038.00	1,486,174,000.00	1 13,789,875.00
2010	2,221,308,625.00	47,223,131.00	1,045,621,875.00	813,246,750.00
2011	3,468,295,125.00	98,194,281.00	358,566,250.00	73,978,375.00
2012	3,920,326,625.00	158,158,531.00	800,763,125.00	612,635,750.00
2013	3,631,914,500.00	1,387,285,375.00	779,502,250.00	1,011,694,031.00
2014	5,591,761,130.00	538,749,019.00	2,285,699,125.00	738.771,875.00
2015	9,243,089,637.00	1,163,927,213.00	4,660,244,750.00	664.620,625.00

Source: Published Financial Statements of Banks (2007 -2015).

Table 4.4 consists of the mean values of the sample banks net income, ICT investments, other investments and operating costs for a period often years (i.e. 2007 - 2015). The net income is the dependent variable, while **ICT** investments, other investments and operating costs are the independent variables. The raw data as extracted from the published financial statements of the sample banks is in Appendix I.

Table 4.5 Summary of responses of respondents (Bank Staff)

	ICT Prob	**ICT Prob**	**ICT Pro**	**ICT Prob**	**ICT Prob**	**ICT Pro**	**ICT Pro**	**ICT Prob**	**ICT Prob**	**HOH**	**PERCENTAGE (%)**
VT	**2**	**4**	**3**	**2**	**3**	**2**	1	**1**	**02**	20	5.65
T	**10**	**1**	**20**	**20**	**10**	**0**	**20**	**19**	**o**	99	27.5
SHT	**20**	**10**	**10**	**10**	**19**	**9**	hr	**6**	**10**	102	28.3
NS	**4**	**16**	**00**	**3**	**3**	**10**	**9**	**10**	**08**	63	**1**7.5
F	4	**10**	7	**5**	**5**	**19**	**2**	**4**	**20**	76	21.1
TOTA	40 **;**	40	40	40	40	40	40	40	40	360	100

Source: Field Survey Questionnaire 2017

The opinions and responses of the staff of responding banks as revealed in Table 4.5 above indicates that 5.65% answered very true (VT) to the aforementioned ICT related problems, 27.5% answered true (T) to same problems while 28.3% responded by declaring somehow true (SHT) to the problems. 17.5% were not sure (NS) if the ICT related problems actually affects the performance of the banks while 21.1% opined that it is totally false (F).

Table 4:6 Summary of responses of respondents (Bank customers)

	ICT Prob 01	ICT Prob 02	ICT Prob 03	ICT Prob 04	ICT Prob 05	TOTAL	PERCENTAGE (%)
VT	25	27	20	21	19	112	56%
T	12	8	10	9	11	50	25%
SHT	3	5	3	4	9	24	12%
NS	0	0	2	5	0	7	3.5%
F	0	0	5	1	1	7	3.5%
TOTAL	40	40	40	40	40	200	100%

The opined responses of the bank customers of the sampled banks under study as revealed in Table 4.6 above indicates that 56% answered very true (VT) to the aforesaid ICT related problems, 25% answered true (T) to the existence and the effect of the same problems while 12% responded by declaring somehow true (SHT) to the problems. -3.5% were not sure (NS) if the ICT related problems actually affects the performance of the banks and 3.5% admitted that it is totally false (F). The bank customers' responses in contrast to the responses of the bank staffs shows a high concentration of the opinion that the ICT related problems are existent and that it assuredly affects the efficient operation of the technologies and by implication, the performance of the banks.

4.3 DISCUSSIONS OF THE FINDINGS AND ENGLISH

Having created a background to the understanding of the major enquiries of this study in the preceding sections, it is apt that this section provides detailed analyses of the major relationships the study investigated.

In order to aid the study in establishing these relationships, it posed two major hypotheses in chapter one. The first of these hypotheses is tested in this section with the aid of multiple regression analysis while the other hypothesis is tested using Chi-square. in testing the former hypothesis with regression analysis, we reported the coefficients, Variable Inflation Factor, R test, R square test, Durbin Watson and ANOVA. The variable inflation factor tests co-linearity, it shows whether the unexplained variable is correlating with some of the independent variables. R test measures the strength/ degree of relationship between dependent and independent variables. R square test on the other hand is the coefficient of determination that measures the proportion of variation that is explained by the independent variables of the regression model. Durbin Watson shows whether or not there is auto correlation between the independent variables, while ANOVA test whether there is regression at all.

The first major relationship the study tries to establish is whether or not ICT investments significantly contribute to the performance of Nigerian banks. In order words, the study determines whether or not ICT applications and investments significantly impact the profitability of Nigerian banks.

Impact of ICT investments on the performance of Nigerian Ranks Hypothesis One: ICT applications and investments do not contribute significantly to the profitability of Nigerian banks.

We have equally represented this hypothesis with a regression equation. This is done in order to help us use regression analysis appropriately. Thus, the following regression equation is used to test hypothesis one:

Model: Netlncome = /Annual ICT investment, Annual Operating Cost, Annual Investment on other Assets)

$Netincomt \sim a + f\}_t\text{-}Annuictvestt + fhAnnuOpercosti + psAnmivestossett + e.,\text{-}$

Where:

a - Intercept

Netincomt = Corporate performance at time t measured by Net income.

Annuictvest = Annual ICT Investment Annual Opercost = Annual Operating Costs Annuvestosset = AnnuaL Investment on other Assets e_t — Error level

Table 4.7 Regression results on ICT contribution to Banks performance

	Unstandardize Coefficients		Standar Coeffici	T	Sig.	Collinearity	
Model	B	Std.	Beta	Toler	VIF	B	Std.
1 (Constant)	1533 6463	1048 5283		1.463	.194		
ICTI	1.520	1.643	.259	.925	.390	.316	3.160
O.l	1.325	.516	.704	2.570	.042	.330	3.029
OP.C	-.586	1.463	-.066	-.401	.702	.905	1.105

Source: SPSS 15.0 Data Output

The-following tables represent the results of the regression equation.

The information on Table 4.7 presents a picture of ICT contribution to bank performance in Nigeria. In general, it is apparent that ICX investments have some contributions to banks performance. The significance level for ICT from table 4.7 above is 39%. By implication, we accept the null hypothesis and reject the alternative hypothesis, thereby implying that Information and Communication Technology (ICT) investments has no significant contribution to the profitability of Nigerian banks.

The significant level is 39% as against 5% level chosen.

The results equally revealed that at 5% significant level, the significant level of other investments on net income is 4.2% .Since this is less than the 5% level chosen, it implies that, investments in other assets (i.e. other than ICT) have significant contribution to the performance of Nigerian banks.

Also, at 5% level of significance chosen, the operating costs as regressed on net income showed a significance of 70.2%. This is higher than 5% chosen, implying that operating costs has no significant contribution to the performance of Nigerian banks, measured in terms of profitability (i.e. income).

The Variable Inflation Factor as revealed in Table 4.7 is 19.4%, meaning that there is co linearity between the unexplained variable and some of the independent

Table 4.8 Regression results on R, R square and Durbin - Watson Tests

	R	R Squa	Adju sted	Std. Error			Change Statistics			Durbin-Watson	
Mode l	R Squa re	F Chan ge	Df 1	df2	Sig. F Change	R Squa re	F Chan ge	df 1	Df2 S	g. F Change	
	.923(a)	,851	.777	122424 1879,0	.851	11.4 54	3	6	.007	1.982	

Source: SPSS 15.0 Data Output

variables.

The information on Table 4.8 represents the results of R, R square and Durbin Watson tests. R Test shows a result of 0.92 implying a strong correlation between dependent variable and independent variable, R“test revealed that 0.851 of the changes in net income is as a result of ICT investments, other investments and operating costs. Durbin Watson test result is 1.982 (approximately 2) signifying that there is no auto correlation.

Table 4.9 Regression results on ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1. Regression	514996087931416000 00.000	3	17166536264380550000.00	11.454	.007(a)
Residual	899260907045261000 0.000	6	14987681784 08768000.00		
Total	604922178635942000 00.000	9			

Source: SPSS 15.0 Data Output

ANOVA test whether there is regression at all. The result in table 4.9 above shows a significant level of 0.007 or 0.7%, implying that there is regression.

A. **Relationship between ICT related problems and the performance of Nigerian banks**

Hypothesis Two: Information and Communication Technology related problems do not have significant relationship with the performance of Nigerian Banks.

To aid the study in determining this relationship we refer to the frequency of

responses of bank staff and customers on questionnaires on ICT related problems as reflected in Table 4.5 and Table 4.6 above. Based on this information we can compute the Chi-square value as follows:

o	E	o-e	$(o-e)^2$	$(o-e)^2/e$
2	2.22	-0.22	0.0484	0.02180
4	2.22	1.78	3.1684	1.42720
3	2.22	0.78	0.6084	0.27405
2	2.22	-0.22	0.0484	0.02180
3	2.22	0.78	0.6084	0.27405
2	2.22	-0.22	0.0484	0.02180
1	2.22	-1.22	1.4884	0.67045
1	2.22	-1.22	1.4884	0.67045
2	2.22	-0.22	0.0484	0.02180
10	11	-1	1	0.09090
1	11	-10	100	9.09090
20	11	9	81	7.36363
20	11	9	81	7.36363
10	11	-1	1	0.09090
0	11	-11	121	11
20	11	9	81	7,36363
19	11	8	64	5.81818
0	11	-11	121	11
20	11.33	8.67	75.1689	6.63450
10	11.33	-1.33	1.7689	0.15612
10	11,33	-1.33	1.7689	0.15612
10	11.33	-1.33	1.7689	0.15612
19	11.33	7.67	58.8289	5.19231
9	11.33	-2.33	5.4289	0.47916
8	11.33	-3.33	11.0889	0.97872
6	11.33	-5.33	28.4089	2.50740
10	11.33	-1.33	1.7689	0.15612
4	7	-3	9	1.28571

16	7	9	81	11.5714
0	7	-7	49	7
3	7	-4	16	2.28571
3	7	-4	16	2.28571
10	7	3	9	1.28571
9	7	2	4	0.57142
10	7	3	9	1.28571
8	7	1	1	0.14285
4	8.44	-4.44	19.7136	2.33573
10	8.44	1.56	2.4336	0.28834
7	8.44	-1.44	2.0736	0.24568
5	8.44	-3.44	11.8336	1.40208
5	8.44	-3.44	11.8336	1.40208
19	8.44	10.56	111.513	13.2125
2	8.44	-6.44	41.4736	4.91393
4	8.44	-4.44	19.7136	2.33573
20	8.44	11.56	133.633	15.8333
				148.685

Table 4.10: Chi Square result of the relationship between ICT related problems and the performance of Nigerian banks (Bank Staff)

X^2 calculated is 148.6856 and X^2 0.05 = 43.77 at (5-1) (9-1) = 32 degree of freedom. Therefore, we accept H^1 and reject Ho and conclude that Information and

Communication Technology related problems have a significant relationship with the performance of Nigerian Banks.

Table 4.11: Chi Square result of the relationship between ICT related problems and the performance of Nigerian banks (Bank Customers)

	E	o-e	(o-e)'	(o-
25	22.4	2.6	6.76	0.30178
27	22.4	4.6	21.16	0.94464
20	22.4	-2.4	5.76	0.25714
21	22.4	-1.4	1.96	0.0875
19	22.4	-3.4	11.56	0.51607
12	10	2	4	0.4
8	10	-2	4	0.4
10	10	0	0	0
9	10	-1	1	0.1
11	10	1	1	0.1
3	4.8	-1.8	3.24	0.675
5	4.8	0.2	0.04	0.00833
3	4.8	-1.8	3.24	0.675
4	4.8	-0.8	0.64	0.13333
9	4.8	4.2	17.64	3.675
0	1.4	-1.4	1.96	1.4
0	1.4	-1.4	1.96	1.4
2	1.4	0.6	0.36	0.25714
5	1.4	3.6	12.96	9.25714
0	1.4	-1.4	1.96	1.4
0	1.4	-1.4	1.96	1.4
0	1.4	-1.4	1.96	1.4
5	1.4	3.6	12.96	9.25714
1	1.4	-0.4	0.16	0.11428
1	1.4	-0.4	0.16	0.11428
				34.2738

Source: Computed values from Data collected

X^2 calculated is 34.27381 and X^2 0.05 = 26.30 at (5-1) (5-1) = 16 degree of freedom. Therefore, we accept H^1 and reject Ho and conclude that Information and Communication Technology related problems have significant relationship with the

performance of Nigerian Banks.

CHAPTER FIVE

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FUNDINGS

This section discusses the findings of this study and conclusions based on the findings. The following are the findings of the study:

A. discovered that ICT investments and applications do not contribute significantly banks' performance in Nigeria. The types of ICT applications that were designed to contribute to performance are front office applications. These type include telecommunications, online banking, electronic fund transfer, smart cards, telephone banking, home banking, and ATMs, among others. These types of ICT applications are directed at improving bank-customer relationships. However, the study revealed that ICT related problems affects the ability of Nigerian banks from taking full advantage of these ICT facilities.

B. It was discovered by the study that ICT applications such as , data processing from computer terminal, computer terminal access, facsimile systems, electronic filling system and computer with voice dictation input do not contribute significantly to banks' performance, because proper synchronization has not been made between these various ICT facilities and the potentials in them.

C. It was discovered that other investments, which include: short-terms funds, short-terms investments, loans and leases, cash and interest bearing deposits with other banks, contributes significantly to the profitability of Nigerian banks.

D. Investment on non ICT labour and other related costs have been found not to

have significant impact on banks performance. This is because the huge sums of money invested were not commensurate with the returns, thereby reducing profitability.

E. Automated Teller Machine (ATM) - related problems have also been found by the study to have significant relationship with banks profitability. This shows that ICT related problems have not been efficiently handled by Miuerian banks. The seven most pressing ICT related problems in Nigerian banks include: Lack of investment capital; Lack of maintenance culture in the public network; Security threats; Inadequate ICT internal maintenance culture; Lack of encouragement from the government on indigenous development of ICT facilities; lack of ICT management knowledge and inadequate basic infrastructure. The reason for the problems border on the fact that ICT usage by banks was not motivated internally through internal dynamics of national ICT infrastructural development in the country rather an externally induced process. For instance infrastructural facilities were not laid when ICT adoption became popular among banks in the 90s. Nigeria did not have ICT policy until the year 2000 and the country's telecommunication network was dominated by N1TEL until the late 1990s when telecommunication sector was deregulated.

5.2 CONCLUSION

Based on the findings above, the following conclusions emerge:

Nigerian banks currently use ICT as source of competitive advantage and not as strategic necessity to improve profitability. This stems from the fact that they are yet to derive maximum benefits from the use of ICT. Secondly, ICT use in Nigerian banks is significantly constrained by ICT related problems and lastly, the effective usage of ICT to significantly improve performance requires a complementary investment in Business process re engineering (BPR). Thirdly, as resulted from the hypotheses tested, ICT related problems have a significant relationship with the performance of Nigerian-Banks but ICT applications and investments have no significant contribution to the profitability of Nigerian banks.

5.3 RECOMMENDATIONS

i. The Nigerian banks need to integrate all types of ICT into the main stream of banking operations to maximally experience a positive impact on their performance. This can be done by banks executives' commitment to understanding how ICT management can be developed internally. The current reliance on front office applications alone will translate into serious problems in the future if proper synergy is not made between the front office and other applications.

ii. In order to obviate the problem relating to effective use of ICT as a performance improvement strategy, there is need for mergers and consolidations among Nigerian banks. The current mergers, acquisitions and consolidations as a result of the twenty five billion (25b) naira recapitalization in the Nigerian banking environment may help only to the extent that it is done within the compass of seeing ICT as an effective source of competitive and performance advantage in the future banking in Nigeria. Consolidation that does not take cognisance of the strategy imperative of

ICT as a source of performance and competitive advantage only reduces the scope of banking in the future. If properly considered, a maximum of twenty banks in Nigeria is sufficient in order to take advantage of ICT effectively. Twenty mega banks certainly will have the wherewithal to completely leverage the use of ICT. This is because their large asset base will guarantee the ability to overcome most, if not all of the ICT related problems. In addition, they will be able to acquire latest ICT applications as well as the knowledge to manage ICT effectively. The cumulative effect is that Nigerian banks will be placed at the level of international standard in terms of both ICT applications and the use of ICT as a source of improving performance. Appendix IV contains pictures of latest ICT technologies currently operational in developed countries that have been developed to handle ICT related problems efficiently. Nigerian banks should invest on these technologies as this will not only tackle the problems of security threats and system downtimes but make Nigerian banks be at par with other banks in developed economy.

iii. The government needs to encourage indigenous development and manufacture of computer hardware, software and other ICT applications in order to reduce the cost of importing these applications. Policies should be made to control importation of ICT equipments so that the indigenous manufacturers will have the opportunity to use innovative and creative skills to develop ICT facilities that will be cost effective as well as perfect quality of indigenous ICT applications. This will help stimulate domestic competition in the manufacture of ICT applications and equipments and as such will not only obviate the high cost associated with the importation of these equipment's but will also lead to improvement in the quality of domestic manufacture. This will go a long way in reducing the pressure on our foreign exchange and will generally improve our balance of trade problems and

other related macroeconomic problems.

iv. Infrastructural facilities are imperative for banks to take advantage of ICT. The current state of infrastructural facilities in Nigeria is appalling. Though government has made efforts in improving Electricity and Telecommunications services in Nigeria, the efforts have not yielded any significant positive results. For instance, N1TEL has been commercialized yet its services are far from being effective. In addition, PHCN is under management contract but no significant improvement in power supply, though government promised 6,000 megawatts by end of December, 2009. while man; banks have resulted to the use of VSAT and alternative power supply, these alternatives only add to the mounting cost of banking operations and by extension affecting the profits of the banks. In addition, the lack of these infrastructural facilities discourages the use of credit cards in the banking sectors of the Nigerian economy. This is because the use of credit cards where as on very stable power supply and dependable network. For the country to have a proper and functional cashless economy there must be concurrent use of both debit and credit cards and the only way this can be realised is through the improvement in the infrastructural facilities of the network and power supply. This will not only improve the use of ICT by banks but it will lead to complete cashless economy with externalities of reduced bank robberies among others.

v. Banks need to train staff in the maintenance of ICT applications internally. High cost of regular maintenance coming from outside would be reduced drastically if there is very good internal maintenance culture. This will go a Ions way in saving the profits of the banks being eroded as a result of high cost of maintenance of ICT applications externally.

vi. Nigerian banks should be aware that without complimentary investment on

business process reengineering, the opportunity currently made available by ICT applications may change infrastructures in order to reengineer the business processes and stabilize and support the positive contribution of ICT in profibality

vii. Nigerian banks should implement security measures that make use of biometrics. Biometric security is a fast growing area of computer security. These are security measures provided by computer devices that measure that make each individual unique. These include, voice finger prints, hand geometry, signature dynamics, keystroke retina scanning, face recognition and genetic pattern analysis. control devices use special purpose sensors to measure and digitize c - ; metric profile of an individual's fingerprints, voice or other physical traits. Tine digitized signal is processed and compared with a previously profile of individual stored on magnetic disc. If the profiles match, the individual is allowed entry into a computer network and given access to secure system resources; and which could equally reduce fraudulent act by the staff and customers.

5.3 PROPOSAL FOR FURTHER STUDYING

Enquiries into the impact of ICT on corporate performance have been a ceaseless academic endeavor in many countries. It started in America in the early 1970s when early ICT applications started making some impacts on corporate performance and when a lot of corporate organizations have started investing in ICT. These enquiries spread from America to Europe, Asia, and Latin America and to other paits of the world.

These enquiries have been, directed at discovering the impact of ICT in many areas; at firm, or industry Levels: specific ICT application or many ICT applications. The present study, falls is the category of many ICT applications and at the firm level. Therefore, further research can be focused on the impact of specific ICT application

at either the firm the industry level or both. Again further research can be directed at tire implication ICT applications at the industry level.

The present study is on the impact of ICT investments on the performance of Nigerian banks performance measure, being profitability. Thus, the study looked at returns via investments. Further research can be directed at the specific returns from ICT towards the overall profitability of Nigerian banks.

Finally, while this present study looked at ICT applications and investments to profitability of financial institutions, speed and velocity in the application of ICT were not considered. This is a good area for further research.

REFERENCES

Adewole, S. F. (2002) *E-business for improved customer satisfaction in the Banking Industry:* a project submitted to the Department of Business Administration, Ahmadu Bello University, Zaria.

Ahmad S. (2008) Impact of information technology on productivity, a Master thesis submitted to Tarbiat Modares University, Iran

Ajayi G. O., Salawu,R. I. and Raji T. I. (2004) A century of telecommunications development in Nigeria- what next? July 15, 2008 www.vii.org/papers/nigeria

Babalola, F. A. (1989). Assessment of Bank Performance in Nigeria – comparative situation bullion, Central Bank of Nigeria, Vol. 13 No. 2

Banjoko, S. A. & Matanmi, O. (1996) "Identifying the Research Problems" in Imsoili I. C. (ed),Social research methods for Nigerian Student, Lagos: Malthoue Press Ltd.

Brynjolfsson, E. (2003) "The information and communication Technology productivity gap". *Journal of Economic Performance Perspectives,* Vol 5. 112-122

Davamanirajan, P., Mukhopadhyaya, T. and Kreibel, C. H. (2002) Assessment the Business Value of information Technology in Global wholsale Banking: the Case of Trade Service, *Journal of Organizational computing and Electronic commerce,* Vol.12, No. 1, pp.5-16

Denny, S. (2000): The Electronic Commerce Challenge, *Journal of internet Banking and Commerce,* November, Vol 3, No. 3, www.arraydev.com/commerce/JIBC/articles.htm

Deyoung, R. (2001): The Financial Performance of Pure Play internet Banks Economic Perspective, Vol. XXV, Issue 1, Federal Reserve Bank of Chicago

Doyle, P (1994): "Setting business objectives and measuring performance" Journal of General Management, 20 (2), 1-9

Fryxell, G. E. and S. L. Barton (1990): "Temporal and Contextual change in the Measurement structure of financial performance: Implications for Strategy Research", *Journal of Management, 16, 553-569*

Grover, V. Kirk D. Fielder & James, T. D. (1994) "Business Process Reengineering Charting a strategic path for information age": IEE Transaction on engineering management.

Guitnand, J. P and Donnelly, J. H (1983): "The use of product portfolio Analysis in Bank Marketing Planning", in shanmugan and Burke, (eds) Management Issues for financial Institutions

Hales, H. L. & Savoie, B. J. (1994) "Building a foundation for successful business process reengineering" *journal of industrial engineering,* USA, 5(2)

Hewith, F. (1995): Business Process Innovation in the Mid-1990s: Integrated Int'l Journal of Flexible Manufacturing Systems, 2(5)

Humphreys, K, (1998), Security first network Bank, Banking and Finance on the Internet, John Wiley and Sons Inc; New Yok

Idowu, P. A. Alu, A. O. and Adagunnodo, E. R. (2002): The Effect of information Technology on the growth of the banking industry in Nigeria. The Electronic Journal on Information Systems in Developing Countries 10(2) pp.1-8

Jeevan, M. T. (2000): Only Banks - No Bricks, Voice and Data November 11th www.voicendata.com/content/convergence/trends/100111102.asp

Jim, O, (2006) Development of the Nigerian Financial Market, Paper presentation at National workshop, Financial Services Registration co-ordinating committee, Abuja

Kaplan, R. S. and Norton D. P. (1992) "The Balanced scorecard - measures that drive performance". Harvard Business Review, Jan-Feb, 71-79

Kayode, (2005): Business Information and Communication Systems: 2nd Edition, Jos-Nigeria

Kobu, B. (2002) "Modelling and Analysis of business process reengineering" *Industrial Journal of production Research 2 (1)*

Latest Banking Solutions (2009), National conference on Biometric Technology, organized by tagged technologies limited and RCG, Abuja

McGuire, J. & Jones (1986): "An Analysis of Alnative Measures of Strategic performance". *Advances in Stretegic management* 4, 127-154

Meyer, M. W. and V. Gupta (1994): "The Performance Paradox", in B. M. Staw and L. L. Cummings (eds) Research in Organizational Behaviour, 309-369, Greenwich: JAI Press.

Milgrom, P & Roberts J. (1992) "*Economics Organization and Management"* Prentice Hall, Englewood Cliffs, NJ.

Mooney, J. Gurbaxani, V. & Kraemer, (1996): "A Process oriented framework for assessing the business value of information and communication technology" *Advances in information systems journal.* Nigeria.

NPC productivity report (2003): "Total Factor Productivity and its Determinants"

Nwachukwu, O. (2002): Information and Communication Technology in a Developing Economy, Uyo, Africana Frist Publisher Ltd.

Nworgu, B. C. (1991): Educational Research and Methodology: "Basic Issues University Press Ibadan.

O'Connell, B. (1996) Australian Banking on the internet – Fact or Fiction?", The Australian banker

Oyeyinka, B. O. (1996): Information Technology in the Finance Sector: Adoption of Computers in Nigeria banks. NISER Monograph series, No.3

Parsons, D., Gotlieb, C.C & Denny, M. (1990) "Productivity and Computers in Canadian Banking" in Griliches, Z. and Maresse, J. (Eds) productivity issues in service at the micro level, Klumer, Boston.

Pratt, N. (2000): New Kid on the Block Grow Up, *BT online*

Preston, L.E. and Sapienza, H.J. (1990): "stakeholder Management and corporate Performance". *The journal of Behavioral Economics,* 19 (4), 361-375

Reichheld, F. & Sasser, W.E. (1990): "Zero defection quality comes to service ": Harvard Business Review, 68, 95-102

Sathye, M. (1998): Internet Banking in Australia, *Journal of interact Banking and commerce,* 2 (4), July 15, 2008, www.arraydev.com/commerce/JIBC/articles.htm

Saundera, A. and L. Schumacher (2000): The Determinants of Bank interact Rate Margins: An Int'l Study, Journal of Int'l Money and Finance 19, 813 – 832

Tam (1998): The Impact of ICT Investment on Business Performance in Asia, Hong Kong

Uchendu, O.A (1995) Monetary Policy and the Performance of Commercial Banks in Nigeria; Economic and Financial Review, Vol. 33 No. 2

Unnithan, C.R. and Paula, M.C. (2001): E-business Adaptation – A Comparison of Australian and Indian Experiences in internet Banking" 14th Bled Electronic Commerce Cone fence Bled, Slovenia

Venkatraman, N. and V. Ramanujam (1986): "Measurement of business Performance in strategy Research: A Comparison of Approaches" *Academy of management Review,* 11(4), 811- 814

Wall, L.D. (1987): Commercial Bank Profitabilty: Some Disturbing Trends Economic Review, Federal Reserve Bank of Atlanta