

**EFFECT OF COMPUTERIZATION IN THE  
MANAGEMENT OF COMMERCIAL BANKS  
(CASE STUDY OF HABIB NIGEIA BANK  
LIMITED MINNA)**

*BY*

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**Submitted in partial fulfillment of the requirement for the  
award of PGD of Technology**

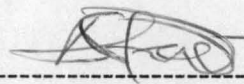
**In Business Management, of the Federal University  
of Technology, Minna,**

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## DECLARATION

I Saidu Ahmed Yahaya of the department of general studies, school of post graduate, Federal University of Technology, Minna, here by declare that this project is the reports of the research conducted by me under close supervision of D. Hakimi (Lecturer in the Department of Mathematics and Computer, Federal University of Technology, Minna).

The works has not been presented either wholly or partially by anybody for any degree anywhere all references are duly acknowledged.



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## CERTIFICATION

This is to certify that this research project was carried out under my strict supervision and has been approved for submission to the Department of General Studies School of Science and Science Education. In partial fulfillment of the requirement for the award of Post Graduate Diploma (PGD) in Business Management Technology.

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## DEDICATION

This project is dedicated to Almighty Allah who makes it possible for me to reach this time. Thank you Allah (Al-Hamdu lillah).

I also want to dedicate it to my parents Alhaji and Hajiya Yahaya Bawa and my entire family members.



## ACKNOWLEDGEMENT

This project was successfully completed with support of many people therefore, I wish to acknowledge with profound gratitude, the contributions of everybody, by various means directly or indirectly, toward the successful completion of this work.

First of all, I must paramountly be grateful to my father, mother and brother for their forbearance with me. Dad, words are short and imagination is inaudible. I wish you longer life.

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## ABSTRACT

Computerization of banking Operations based on the rapid development taking place in banking industries is an important practice which should be incorporated in the banking activities.

It is in the light of this, that the proposed project was carried out to tackle the problem of computerization in banking industries.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the study

Despite the distress position of most commercial banks, computerization of banking operations based on the rapid development taking place in banking industries is an important practice which should be incorporated in the banking activities, if there should be need for survival of banking industry from the eroding economic quagmire.

At its early stage of development, computers are mainly used for scientific and research applications. With time it became applicable to banking and in recent times, computers are used in almost every aspect of banking activities. This growth in number of computer applications in banking has created a massive demand for bankers to be computer literate.

Most banking organizations looked at concept of computerization to be a simple venture but its importance in the banking industry cannot be over emphasized it is not often fully understood and appreciated by management not until recently coupled with the last fifth generation of computers, which have electronic computer and at lower cost.

The introduction of computers has also improved banking activities in many cases, as well as providing tools of immense potential in several areas. The use of computers in the various banking operations has brought about some development in the developed countries.

The banks use of computers has steadily grown as one of the largest users of computers now given banks a way to electronically transfer funds from one account to another without the need for paper. By transferring money electronically the delay involved in processing cheque and the risk of accepting bad cheque is eliminated. This computerization system is rapidly eliminating the need for acsh and checks in our commercial banks and our society at large.

It therefore becomes necessary that this trend of computing offers our commercial bank mangers a greater opportunity to improving efficiency, decision making and extending their services to a new area of computer related banking activities.

## **1.2 Statement of Problem**

Computerization in commercial banks have provided a strong financial service 8increating a unique international bank focus and has created an efficient solutions to customers business problem back up by absolute commitment to quality.

The problem however is that most commercial banks are involve in total computerization of banking industry what extend has the computerization aid the efficiency and effectiveness of banking operation. What practical steps are the banks taking to ensure the realization of business objectives? The research project shall be designed to provide insight into these and other related problems.

## **1.3 Aim of the Study**

Generally the objective of this study is to access the effect of computerization in the management of commercial banks. The study is specially set out to: -

- i. Examine the value of computer application in Habib Nigeria Bank Limited, towards enhancing customers' satisfaction?

- ii. Ascertain the effect of computerization in Habib Nigeria bank Ltd.
- iii. Identify benefit derived by Habib Nigeria bank through its computer banking operation.
- iv. Point out number of reason that make computer necessary in the management of Habib Nigeria bank Ltd.
- v. Determine the efficiency and effectiveness of management of Habib Nigeria Bank via computerization of its banking systems.

#### **1.4 Research Question**

The study will attempt to provide answers to the following research questions.

- i. What is the kind of computer application system put in place by Habib Nigeria towards customers' satisfaction?
- ii. How does computerization affect Habib Nigeria Bank Limited. Banking operations?
- iii. Does Habib Nigeria Bank derive any benefit from computerization of its operation.
- iv. What reasons make computer necessary in the management of Habib Nigeria Bank?
- v. How efficient and effective is the management of Habib Nigeria Bank Limited in computer application?
- vi. What problems were encountered at the introduction of computer and during utilization?



## 1.8 Definition of Operational Terms.

**Data:** - Is the name given to BASIC concrete facts or symbols such as numbers, names or values etc.

**Information:** - Is a processed DATA that are useful and intelligible.

**Hardware:** - Consist of the physical (mechanical and electrical) components that make up a computer system such as integrated circuit (IC's) Micro computers, disk drive and the peripherals.

**Software:** - This consists of the various program executable on a computer system together with their associated documentations.

**Crime:** - Violation of the law, especially a serious one.

**Fraud:** - Criminal deception carried out with the intention of gaining advantage; or something that constitutes a criminal deception.

**Computer crime:** - the use of computer system to carryout crime.

**Computer security:** - is the putting in place a reliable security measure to protect both the physical and logical assets of the bank.

**Physical Security:** - Refers to the security of the hardware facilities, magnetic disk and tapes and any other gadget that can be accessed illegally stolen or destroyed.

**Logical security:** -this involves building software checks/control into software to disallow unauthorized personnel gaining access into the software. This is achieved through the use of passwords and authorization codes.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.1 Brief History of Habib Nigerian Bank

Habib Nigeria Bank Limited was incorporated as a private limited liability company in November, 1982 and commenced operation on 16<sup>th</sup> may of the same year.

**Ownership:** The stakeholders ratio is 40% to Habib Bank Limited Pakistan and 60% to Nigerians, in 1986 however, and in compliance with the Nigerian enterprises promotion act of 1977 the Nigerian position of the venture relinquish 10% of their share to Nigerian employers for acquisition under the staff equity participation scheme.

**Objective:** The objectives of the venture have been to introduce and maintain a banking style with a different in Nigerian and develop a sound banking with branch net work in all states of the federation and the Federal capital territory Abuja.

Provide financial and technical assistance to the public and private sector organization within the frame work of the government of Nigeria plan and policies Mobilize deposits by encouraging saving through the introduction of effective banking services tailored to t he needs of all categories of customers, emphasizing services and professionalism with a difference.

The board is presently composed of seven Nigerians and 5 Pakistains, with Mr. I. K. Abiola as the chairman while Mr. Akim Kekére. Ekun OFR, is the Managing Director and chief executive officer. As an acknowledgement of the quality of service the bank provides, it has continued to feature among the leading financial institution in rating carried out by various financial journals.

**Branch Net Works:** The bank started operation in may 1983 with two branches and by the following year the number of branches had grown to four with the addition of Kano and Tafawa Balewa square, Lagos. The rapid expansion of branch net work was maintained such that by the end of 2003, the number of branched 59 in 35 states and the federal capital territory.

## **2.2 Origin and Growth of Computers**

According to Nmdu J.N (1998), the origin and growth of computing devices dated back to the earliest time of human civilization various devices were developed in consonance with the level of technology at that time.

One of the earliest forms of calculating device was the abacus. It is estimated to be as old as 5000BC. This era resulted in the development of abacus counting frames of beads by the Chinese, arithmetic calculation were performed by manipulating the beads and it calculate faster than a clerk using desk calculator.

Blaise Pascal adding machine (1642) produced the first mechanical calculating machine capable of performing addition and subtraction, of numbers, though it was difficult to repair, as one of its demerits.

The origin of modern computer started with Charles Babbage (1822) produce the first different engine and design analytical engine digital calculating machine. This machine can add and generate successful value of simple algebraic function using FINTE difference and also having a complete arithmetic units store punched card for input.



A tabulating machine was developed by Herman Holerith (1887), this machine was a modification of Charles Babbage's analytical engine this machine was capable of tabulating and sorting of numbers use for data processing for population census.

Electronic numeric integrated and computer (ENIAC) was the first completed electronic computers to be built in 1946 by Dr. John W. Manchly. This machine could store 20 numbers; it has 200 micro second speeds for addition, 300 for multiplication, 600 for division respectively.

However, the major short coming of ENIAC was its ability to store program along with data to be process.

Computing devices and their approximate age as contained in the computer appreciation and operation by Nmadu (1998) is in tabular form below.

S/N	NAMES	AGE	DEvised BY
1	Abacus	5000BC	Abacus
2	Greek computer	100BC	n.a
3	Napier bones	+1600	John Napier
4	Calculating device	1642	Blaise Pascal
5	Leibnitz calculating machine	1672	Gottfried Wilhelm Leibnitz
6	Falcons loom	1728	Falcon
7	Jagu and loom	1801	Josh Marie jacquard
8	Different engine	1822	Charles Babbage
9	Analytical engine	n.a	Charles Babbage
10	Cash register		
11	Tabulating machine		

12	W.S. Burroughs	1888	W.S. Burroughs
13.	Mark I	1937	Howard H. Aiken
14	Ahamasoft berry computer	1942	JOHN v. Ahamasofy
15	ENIAC	1946	Dr. John W. and J. Presper
16	EDSAC	1949	Dr. M. V. Wikes
S/N	NAME	AGE	DEvised BY
17	INhir/wind	1950	n.a
18	EDVAC	1952	Dr. John von Nevmar.

Source: adopted from Nmadu J.n computer appreciation and operation Akan communications (1988) page 3.

### 2.3 Meaning of Computer

- i. Nmadu (1998), defined computer as a device capable of solving problems or manipulating data by accepting it, performing desired operations on the data, store the data and supplies the results their operations whenever required.
- ii. Berkeley et al (1956) had defined a computer as any device which is capable of accepting data applying reasonable process (arithmetic and logical) to the data and supplying information from such data.
- iii. D. Hakimi (2004), defined computer as mechanical/Electrical device that works under the central of a detailed stored instructions (program) written in a specific high level language (HCL0 to accept, store, process data and produce results in a form required by the user.

- iv. A reckoned scientist, Anderson (1974), defined a computer as a machine which accept data from an input devices perform arithmetic and logic functions on it in accordance with predefined program.

Generally a computer is an electronic, electromechanical, and magnetic device capable of accepting data as input, processes the data following sequences of instructions and produce output which is either stored in a computer or an auxiliary storage unit as soft copy or printed out on paper as a hard copy.

### **2.3 Generation of Computers;**

According to Hutchison and sawyers (1990), defined generation of computer as the set of interrelated and mutually stipulated special features and characteristics which were used to construct the machine.

Nmadu J.N (1998), says the concept of generation of computer was caused by rapid growth of the new fields and methods of computer application which needed more efficient, cheaper and more dependable machine. Also the concept of generation of computers form the basis of classifying the computers.

Basically computer technology has evolved through five distinct generations. Each generation has affected Data processing because it has and will still continue to have effect on mans job and the entire society.

The first generation of computers started with the development of the universal automatic computer 1 (Univac 1). This device was developed by Ecker and Mauchly (1946), the machine of this generation of computer uses vacuum tubes or termonic vibes. These generation marks the beginning of programs and programming language, although must of the programming were done in machine language which consists of series of ones



and zeros (acting in switch like manner). One of the first program translators was developed by Dr. Grace hopper who stopped the operation of computer and from then on, a computer problem or programming mistake was called a bug and the process of removing the bug is called debugging. The computer of this generation has no memory retentiveness dissipate/generate a lot of heats and it also breaks dawn frequently. The first generation of computers terminated in 1956.

The second generation was initiated in 1956, with the use of transistors instead of vacuum tubes. Transistors were smaller, faster and more reliable and produce less heat during operation. The use of magnetic tapes and disks for permanent storage replaced computer cards. Input and output devices improved. Better printers, terminals, card renders were developed. Hardware devices were also made modular which reduced problem of maintenance. During the second generation high level programming language were developed. They include FORTRAN (1957), COBOL (1961), BASIC (1964), etc.

There were also improvements on system software that makes the computer systems run more efficiently and effectively. Operating system replaced the functions by human operator.

Computer were also developed to programmes for sorting, margin and transferring data files from one location to the other were developed thus making real time processing of data possible. There was a remarkable shift of emphasis from hardware to software development. The concept of computerized management information systems was born during this period. The second generation terminated in 1965.

With the replacement of transistor with integrated and miniaturized circuits and subsequent introduction of IBM 360 in 1965, the third generation was born. And since then computers development has been so rapid with many improvements in all aspects of the computer systems. Infact, the line of demarcation between subsequent generations has become very difficult to draw from third generation. Nmadu (1998), put dawn some of the remarkable improvement during the period:

1. increased processing speed
2. increase accuracy
3. Integration of hardware and software.
4. the ability to perform several operations simultaneously
5. data communication advances
6. Improved performance to price ratio.

It must also be noted at this juncture that with advances in computers, the size of a computer machine tends to reduce.

In the fourth generation of computer, although the line of demarcation is now thinner, this generation of computer was marked with the use of large scale integration (LSI) instead of circuit and the introducing of micro processors and Microsystems or personal computer (PCS). There has been advances also in systems software, operating systems, computerize, package software, net working etc. this generation was initiated in 1970.

Although, the fourth generation is just about two decades old, work on the fifth generation computer systems has reached an advanced stage. This effort is being led Japan and the U.S

According to Nmadu (1998), the fifth generation of computers are being tested already. The remarkable characteristics of fifth generation of computers are the use of a very large scale integration (VLSI).

Artificial intelligence, expert programming languages such as PROLOG are other features which are expected of these computers. Computers of this generation (although have not been completely accomplished). Will be more human like in judgment and expertise. In other words these computers are supposed to be able to understand human language, thus enabling human being to interact directly with computer without the use of an input device, and should have their innate intelligent.

- By artificial intelligent it implies that the computer should have the ability to exhibit behaviour like an intelligent person.
- Expert system, this is the application program that have the capacity of making judgment and decision like and expert person in a particular field.
- Speech processing:- this is an interactive system that put users through question answer session to clarify issues and make recommendations.

#### **2.4 Overview of Computer Architecture.**

Computer Architecture, in computer science, a general term referring to the structure of all or part of a computer system. The term also covers the design of system software, such as the operating system, as well as referring to the combination of hardware and basic software that links the machines on a computer network. Computer architecture refers to an entire structure and to the details needed to make it functional. Thus, computer architecture covers computer systems, chips, circuits, and system



programme but typically does not refer to applications, which are required to perform a task but not to make the system run

#### **2.4.1 Hardware**

William et al (1988), looked at hardware as the most visible part of any micro computer system. Hardware is the tangible equipment: they come in pieces that are connected together.

According to Freaches (1982), hardware is the computer and its associated equipment in other words, hardware are physical equipment use for data processing. Data processing machine that can perform data output, data manipulating and control data output, example micro processors drip, RSM drip etc.

Capron (1995) says to function a computer system requires four main areas of data handling, input processing's, output and storage. Therefore, the Hardware is responsible for these four areas of operations as follows:

a) Input devices: this accepts data in a form that the computer can use and send the data to the computer processing unit. These devices allow us to get data into the computer.

Some of the common ways of feeding input data into the system are by;

- i. Entering on a keyboard:- the computer respond to what we enter that is, it talkback to us by displaying on the screen what we type
- ii. Moving a mouse over a flat surface:- as the ball on its under side rotates, the mouse movement causes corresponding movement on the computer screen, so the user can use the mouse to point to commends on the screen. Buttons on the mouse let the user invoke command.

- iii. Reading with a wand reader: - wand reader can read data directly from the source such as price tag into the computer. In essence they are used to scan the special letters and numbers.
- iv. Moving a product over a bar code reader:-they are used to scan bar code, they collect data at the source reducing error and cost.
- v. Keyboard: - they are used to type in data into the computer system.

b) The central processing unit (CPU):- this is the computers centre of activity. The central processing unit consists of electronic circuit that interprets and executes program instructions as well as communicates with the input and output and the storage devices. Memory is associated with the central processing unit memory consist of electronic circuitry that temporary stores the data and instructions (program) needed by the central processing unit.

According to Capron, (1995), the central processing unit (CPU) is made up of:-

- i. The control unit (CU):- this co-ordinates, direct and control the operations of the entire computer system for instance it tells the tape drive when to read data and the printer when to print.
- ii. Arithmetic and logic unit (ALU):- this unit performs all the arithmetic operations as well as moving shifting and comparing of data.

c) Output device: - this show you the processed data or information in a form that is useful to you in other words, they are raw input that has been processes by the computer into relevant information. Some ingenious forms of output have been devised, such as music and synthetic speech, but the most common form is words, numbers and graphics.

The two common output devices are:-

- i. Screen: - this shows line of text, a numerical display or colour graphics.
- ii. Printers: - this are machines that produces printed document at the instruction of a computer program.
- iii. The secondary storage: - device such as disk drive can store additional data and program permanently. These device, which may or may not be physically attached to the computer, supplement the computer memory.

The two main secondary storage are magnetic disk and magnetic tape.

#### 2.4.2 Software

software are basically programs, programs simply put consist of sequences of instructions needed to be performed. to accomplish a well defined task it is the software that enables the hardware to be put into effective use. It has been some time said that "Computer without a program is an electronic idiot" because it can do nothing constructive or profitable. Capron (1995) categorizes computer software as;

1) System Software: - the group of programs that control and co-ordinate the resources and operation of a computer system are known collectively as the system software. The system software control basic computer operations and co-ordinate the activities of the other type of software. The system software has many task related to the operation and control of the computer resources, but its primary role for computer user is related to file management and the control of the device attached to the computer for example user will use one or more systems control programs to copy or delete files to check the status and content of storage devices.

System software also called operating system is the underlying software found on all computers. Operating system in other words, is the collection of program module



which forms an interface between the computer hardware and the user, its function is to ensure judicious and efficient management of all system resources ( such as processors memory peripherals etc.) as well as providing programming convenience for the user.

Operating system has a number of methods by which it accomplish its functions example are DOS (disk operating system) AOS ( Advance operating system) PC- DOS, MS DOS, UNIX – etc.

ii) Application software: - in the words of Warford (1991), instruction or collection of related programs designed to be carried out by a computer to satisfy a user's specification are application software.

Capron (1995) sees application software as a software that is applied or put to use, to solve a particular problem or perform a particular task he says application software may be either custom or Packaged.

- Custom Software: - this is software that is specifically tailored to their needs.
- Packaged Software: - also called commercial software. The software that is literally package in a container of some sort, usually a box or folder and sold in store or catalog.
- Task Oriented Software: - Most users, whether at home or in business are drawn to task oriented software, some time called productivity software that can make their work faster and their live easier. The collective set of business task is limited, and the manner of general paths toward performing these tasks is limited too. According to Capron (1995), the task and the software solution fall, for the most part, into just a few categories that can be found in most business environment..

These major categories are:-

- a) Word Processing: - this software let us create, edit format store and print text.

Desktop Publishing: - users in this regard employ software and high quality printer to produce printed materials that combine graphic with text.

- b) Database Management: - A variation on old fashioned record keeping is the management of a collection of interested facts. The software can store data, up date it, manipulate it and create reports in a variety of form. Database management system is software that helps us organize data in a way that allows fast access to the data, in essence the program acts as an efficient and an elaborate file system. With a data base program we can enter, modify, store and retrieve data in a variety of ways.

- c) Graphics: - maps charts and other graphics help people to compare data, spot trend easily and make decisions quickly.

- d) Communications: - from the view point of a worker with a personnel computer, data communication means in simple terms that he or she can link up the computer with the phone system or some other communication link and send data to or receive data from a computer in another location. Business users and memos, exchange project data, leave message send data to the head quarters offices, access stock quotes and on and on. Home users send greetings to friends and family who have computer, transfer bank funds, buy stocks make air line reservations, access data banks, such as encyclopedias and even other products.

### 2.4.3 Programming Language

According to Freaches (1982), programming language is used to carry out a specialized task that is crucial to the use of computers and creation of computer programs. Software packages in this category are development systems that are used by computer programmers to create the entire computer programme we use. Programming language used to formulate and store the complex instructions that are to dictate computer task.

Semeon (1993), see programming language in many ways much like the language we use to communicate with each other. But while a natural language like English is used to convey information between individual humans that understand that particular language, a programming language provide a specialized set of rules and a vocabulary that have to do with computer operation. Therefore, communication with a computer can be established, the rules and specialized vocabulary of programming language must be known to both computer and the users.

Olafatula (1993), is of the view that over the year's computer programming method, evolves through the development of successive generations of programming languages with each new generation bringing new function ability and ease of use.

- a) Machine language: - This is referred to as low level language. They are language understandable by the computer. Each instruction in the machine language in set, is represented in binary form and is designed to trigger one specific capacity of a particular processor. Machine languages are developed at the early days of computing they are often referred to as first generation language. Sloan (1980) sees machine language as instruction consisting of two parts the operation code



which tells the computer what action to perform and an operand which specified the location of the data to be operated upon.

- b) Assembly language:- Olafatula (1983), looked at the assembly language as meaningful code word to symbolize a machine instruction. They are some what easier to use. Sloan (1980), assembly language is a language in which statement produces exactly one machine instruction. There is one to one correspondence between machine instruction and statement in the assembly program.
- c) High level language: A high level language was developed in 1950s. High level language uses English like vocabularies that are considerable easier to use than either machine language or assembly language and programmes written using a high level language can often be used on different type of computers with a few modifications while each instruction in assembling language is equivalent to one machine language instruction. Each instruction in high level language may be equivalent to many machine language instructions. High level languages are now referred to as third generation languages.

## **2.5 Classifications of Computers**

Hutchison/sawyer(1990), classified computer depending on size, cost, processing power and speed.

### **2.5.1 Classification of Computers Depending on Size, Design.**

- i. Micro computers: - this is the smallest computer: it is the single user and a single tasking oriented system that supports a wide range of application. It consists of micro processors and an associated storage and input and output units.

- ii. Mini computers: - also known as midsize or low end mainframe is a small compute but it is multi-tasking and multi-user oriented system that allows more sophisticated application.
- iii. Mainframe computers: - these are multi user and multi-tasking oriented that support full range of programming languages used for both commercial and scientific purpose. They are the early set of computers produced and of course with large component parts, it is generally more powerful interns of processing speed, storage capacity etc. than typical mini computer e.g. IBM 370, NRC 8000 and CDC cube 72
- iv. Super computers: - This is the largest fastest and the most expensive computer super computer can be seen as an improvement technologically on mainframe computers. Beside these computers are super micro computers (an improvement on micro computers) example IBM PS/Z mode 80 and IBM 370.
- v. Small Business Computer (SBC):- These are small computers specifically tailored to the requirement of the small commercial oriented users. They are useful in the organization that is too small to justify the use of mini computers or mainframe computers SBC are built around mini computers with additional business oriented peripherals and software packages to handle general applications like payroll, accounting stock keeping and invoicing etc.

Capron (1995), classifies laptop computers as one of the type of computer that will fall in this categories of computers that falls depending on size, speed and processing power. He is at the view than an answer to the following question provided a meaning to laptop computers Viz:-

A computer that is found in a briefcase? A computer that weigh less than a new born baby? A computer we don't have to plug? A computer to use on your lap on air plane? Yes to all these questions.

Laptop computers also called note book. Computers are wonderful portable and functional which is popular with travelers who need a computer that can go with them. To move data from one computer to another. Laptops are not as expensive as their size might suggest, many carry a price tag equivalent to full size personal computer for business.

Nmadu (1998), classifies computer according to mode of data presentation viz:-

- i. Digital computers:- these are computers represent data in a discrete and discontinuous manner using binary system. A digital watch is an example of digital device. These types of computers are commonly found in business environment because of their high arithmetic speed, ease of programming, versatility and accuracy. Examples are desk calculate, adding machine etc.
- ii. Analogue computers: - these are computer that represent data in a continuous, smoothing changing manners using physical variables such as pressure and temperature. Example analogue watch and thermometer. Their outputs are usually represented in form of graph for which information can be read. They are less accurate than the digital output since the accuracy depends on the use.
- iii. Hybrid computers: - these computers combine the feature of both the digital and analogue computers. Their output could be inform of discrete or continues valve or combination of both example is an electronic calculating scale.



## **2.6 Review of Central Bank Guideline for Electronic Banking**

The Central Bank of Nigeria has proposed a detailed guideline for the Electronic Banking in Nigeria. The following is a critical review of the guideline. Specifically, the review focuses on the Information and Communications Technology sections of the guideline, and it will attempt to reveal weaknesses in the CBN's proposal guideline. Where possible, alternative recommendations will be defined. In issuing this review, a key factor that underlies some of the alternative recommendations, is the corrupt business environment. Information technology risk are assumed to be higher, hence Information security controls must meet these risks

### **2.6.1 Technology and Security Standards Review**

The CBN has proposed an approval process for all technological investments that exceeds 10% of free funds. The 10% factor is arbitrary. Rather than proposing a 10% percentile, CBN ought to define in clear terms, a definitive methodology for evaluating tangible and intangible mid to large-scale technological asset acquisitions pursued by Banks. As written, an investment that stands at 9.99% of free funds is not subject to CBN approval. A clearer approval process, might involve, a methodology for the assessment of technological investments, in lieu of tangible and intangible return on specific technological investments. The entire process of technological asset acquisition might need to be reevaluated. A 10% of free fund criteria ought not to be the only criteria for stipulating an approval process for key technological acquisition.

In addition to the above suggestions, the proposal also recommends that the core technological and security standards include the following:

- A. A guideline for criminal background checks for Banking Information Technology Employees. Such background check might include psychological profile examinations, and general character assessment tests.
- B. A guideline for Criminal background checks for banking business associates that will participate in the implementation of core Information technology architecture. Vendors must certify their business reputation.
- C. Guideline for new employee hiring and termination. Strict guidelines must address the issue of disgruntled employees. Information technology assets belonging to the banks must be recovered at the point of termination.

#### **2.6.2 Standards for Computer Networks and Internet Review**

The proposed guideline addresses controls for banking data communications, and specifies specific technologies, such as proxy type firewalls to implement Security measures for data communications. It specifies controls for external devices, connecting to a larger Network. However, the review falls short of key Network Security criteria. An initial technology environment, and risk assessment of each individual Financial Institution is not required.

In the opinion of this review, the CBN ought to recommend a standard that allows the Banks to examine potential threats that may already be existing in each individual Financial Institution's current Network. The local Intranet facility must not be assumed to be secured. Furthermore, each external device permanently connected or otherwise connecting, to the Banking Network ought to implement the connection in a layered and trusted basis. All devices are not equals. Each device ought to have its own access control label that allows it only to a specified layer of access.

### **2.6.3 Standards on Protocols**

The CBN's guideline calls for steps to ensure access to data is defined by clear access control measures. In addition, Banks should be encouraged to define clear standards for classifying data. Data sensitivity classification allows access control of the data to be more cost effective. Banks should be encouraged to implement Data sensitivity schemes into their Information Security Framework. Also, besides human access to data, Computer Applications also have access to data. The point here is that, access control lists should not be limited to human operators, but also to include Computer processes. In addition, allowing access to Network protocols that are only needed is not enough, this review proposes that only secured ports should be open. For example SSH rather than FTP, and HTTPS, rather than HTTP protocol.

### **2.6.4 Standards on Applications and System Software Review**

This section of the guideline offers a proposal for architectural implementation, Banking application interface, data communications, software support, physical security, and the segregation of IT security personnel from the IT personnel within a financial division. It is the opinion of this review, that the guideline provided for Application and System Software, is at the very least, inadequate. In general, most security vulnerabilities occur in Application and System Software level. The CBN ought to elaborate more on Security issues associated with the deployment of Applications and Systems Software. Banks must implement policies and procedures that hold their Systems Personnel accountable for implementing application, and Systems Software level Security. System Software Security patches must be applied timely. Banks must review the historic security reputation of potential Vendor Software application, and implement appropriate



steps to address shortfalls in vendor proprietary Software security issues. Programs developed in-house, must be subjected to security quality review. Anti Virus and Intrusion detection Software updates needs to be applied timely. A three-tier architecture needs to be considered for implementing the technological infrastructure.

Lastly, Banks should implement directives for Application Change Management schemes, and provide an effective quality assurance over Applications and System Software implementation.

### **2.6.5 Standards on Delivery Channels**

The delivery channel, is the Communication path between the Banks, it's business associates, and it's customers. The guideline defines a standard for data confidentiality, integrity and non-repudiation. Clearly, it is the goal of the CBN, to implement a process for data security and integrity as the data travels from source to destination. In the view of this paper, the CBN should recommend data transmission security expectations beginning from the origin of the data transmission, the delivery path, and the end point. The point of data origination, must implement security controls, likewise the transmission path, and the endpoint. Also, since each transmission path might face varying security challenges, the CBN might want to specify varying security controls, for the different data transmission Networks.

In a very general sense, transmission Networks and their security recommendations might be classified as follows:

A) Security recommendations for data transmission that occurs using the highly vulnerable Public data Transmission network. EG, Dial UP.

B) Security recommendations for data transmission that occur through a more secured point to point private Network.

C) Security recommendations for data transmission that occurs through wireless data transmission. Specific delivery path needs different security requirements to make the transmission secured. For example, data transmission that occurs via the public network might be expected to enhance its Security by using VPN, while Fiber Optics point to point might not. Also, audit trails expectations needs to be clearly defined. Specific audit trail attributes needs to be clearly identified by the CBN. Specific data items that needs to be captured, needs to be defined by the CBN.

#### **2.6.6 Automatic Teller Machine**

The guideline for ATM primarily focuses on physical and transactional security. The CBN emphasizes Customer security and gives recommendation for the careful location of ATM devices. However, it fails to recommend a standard for total number of simultaneous connections to the ATM network. As a condition of Service, CBN should define acceptable ATM Network saturation point. What is the acceptable level of simultaneous connection?

#### **2.6.7 Internet Banking Review.**

The CBN guideline requires that only authorized staff should be able to change information on the Banks Web Site, the CBN must also specify, that Banks must put processes in place, to ensure that only authorized computing processes are allowed to make changes to the Web Site.

The CBN requires that when hosting services are outsourced by the Banks to ISP's, the ISP must ensure that firewalls are configured properly by the ISP. In the opinion of

this review, the ISP must not be allowed to have any technical administrative controls whatsoever, to any security device protecting the Banks Information asset. Even when outsource, Banks must make sure that any gatekeeper technology remains solely in their control. Allowing Firewalls and similar devices to be managed by non-banking employees might open the door for unprecedented security breaches.

In addition, the following Web security measures are also recommended:

- a) All Web Pages displaying customer information must be encrypted. Banks might want to consider using the Https encryption to secure it's web pages Customer Browsers must also support a higher level encryption bit.
- b) The CBN might opt to own a centralized digital Certificate issuing Server, specifically for Banks. This gives the Digital certificate issuing authority, centralized advantages, of managing issuance, expirations, and renewal of these digital certificates. Alternately, Banks can form a centralized body that performs the same digital certificate issuance function.
- c) Banks must implement Web Site change management controls.
- d) Banks web sites must contain mechanism that makes the customer session expire, after some set period of inactivity. Logins sessions to Web Sites must not be permanent.
- e) Policies should be made to address the response time of processing transactions on a Banks web site

#### **2.6.8 Switches**

In addition to recommendations in this section of the guideline, the CBN must also encourage switching companies to implement a structured security incident reporting policy, which submits it's formal findings directly to the CBN.



### **2.6.9 Standards on Security and Privacy Review.**

The standard for security and privacy does not particularly recommend any guideline for privacy. The CBN must outline specific standards for how Banks manage customer information held by Banking Systems. There must be clear provision for Customer data confidentiality. Specific outlines must be provided in the following areas:

- A) Access of customer banking records by governmental agencies.
- B) Access of customer banking records by external business associates of the Banks.
- C) Marketing of customer banking records.

### **2.6.10 Backup recovery and business continuity review.**

This section needs to specify data aging criteria. How long archived data should be kept? Clear criteria should be defined for transactional processing data, and detailed records. It must specify the acceptable length of time for which, these records must be stored in archive.

## **2.7 Applications of Computers in Habib Nigerian Bank Limited**

As contained in the in-house journal Habib Nigeria bank (1997), application package are already made program or set of programs with associated documentation used for a particular types of problems or a variety of similar problems. Some of the course package currently in used in Habib Nigeria bank limited and other corporate organizations are:-

- i. Complete computerization: - this is where all the simple are well defined and repetitive can be completely computerized e.g. the basic classified function.
- ii. Partial computerization: - this is when the computer take over routine control but may be monitored by humans, who may also deal with exceptional cases.

Example is banking operation where all other routine works are computerized except the signature verification.

- iii. Computer aided application: - this is where the computer can be used in many applications to aid management decision by the provision of accurate results or information.

## **2.8 Effect of Computerization in the Management of Habib Nigerian Bank Limited.**

The computerization of Habib Nigeria bank limited. Has gone a long way to assisting the bank in so many ways through the unit as contained in the in house journal Habib Nigeria bank news (1997) such units are:-

- i. The customer service units (CSU):- in this unit so many services are carried out to the customers such service are:-
  - a. The cash teller services: - this is where cashiers cash and cheques for deposits for customers.
  - b. Fund transfer: - under this unit various funds are transfer to designated areas.
  - c. Clearing of cheques: - customers who pay in either Habib Nigeria bank cheques or cheques from other banks are cleared and certified their reliability.

2) **Internal basic system (IBS):-** under this system internal transfer of cheques and cash are carried out between the various branches of the bank nation wide.

- a. In house transactions:- this is a situation where a customer comes into the bank with Habib Nigeria bank cheques, where the account is being operated by customers him or her self be verified, after verification of the necessary

signatures and the availability of money in the customers account, after which the customer will be paid immediately.

- b. **Draft unit:-** the idea of customers carrying large sum of money during business trip or other functions are being carried out in this unit other functions are being carried out in this unit what is expected of a customer is to quote his account number with the necessary identification.
- 3) **Accuracy:** - the need for high degree of accuracy can not be over emphasized but computer can be relied upon for accuracy once given the correct data for processing.
- 4) **Need for timely information:** - the fast pace of modern activities makes new demand on management for accurate rapid response to changing conditions. Effective control of large services to customers requires that management planning monitoring and evaluation of office should annually or biannually report on customer's service.
- 5) **Accuracy:** - the need for high degree of accuracy cannot be over emphasized but computers can be relied upon for accuracy once given the correct data for processing.
- 6) **Value of data:** - with the growth of banking transactions, the bank excessive number of errors can be made which may lead the bank to encounter some losses, but with the introduction of computer large amount of data's are handled by the computer to reduce errors.



- 7) **Reduction in clerical cost:** - the rising cost of personal home made computer application a better alternative is out in customer's services. This became all majority of the clerical works presently can now be handled by a single computer.
- 8) **Reliability:** - computers are reliable in all its activities, provides accurate figures or data as fed into the computer data input as expected as the output. In addition to these points summarized above Capron (1995) views computerization in the management of banking sectors in the following ways.
- a) **Decision making:** - because of expanding technology, communication and inter dependent of people, we suffer from an information deluge. This overload is in part brought. By the computer, but the computer will also help solve it. To make essential business and governmental decisions, managers need to take into account a variety of financial, geographical, logical and other factors using problem solving technique originally developed by humans. The computer helps decision maker sort through and organizes this vast amount of information and make better choice.
- b) **Speed:** - we all appreciate fast service whether we are waiting in line in the bank, more often than not, the computer is a key element in providing fast services. So unless we are prepared to do a lot more waiting. For pay cheques bank balances and many other things we need the split. Second processing of large amount of data, as in accounting system and other banking operations.
- c) **Storage capacity:** - computer system is able to store tremendous amount of data which can then be retrieved quickly and efficiently. This storage capacity is especially important in an information age

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **Introduction:**

This chapter describes methods and procedures used in conducting this research work. The description of the procedure is done under the following headings:

#### **3.1 Research Design:**

The survey method of gathering information was basically the method used to collect needed information.

Personal interview was conducted on some management staff, staff of the bank and customers. Structured questions were used. Other elements of the research design used include sampling arrangement and the data analysis techniques.

#### **3.2 Population and Sample:**

All the staff of Habib Nigeria bank Limited constituted the population for this study. Simple random sampling techniques were used in selecting management staff, staff and customers of Habib Nigeria bank Limited Minna branch.

The manager assistant, the computer operator, and as well as one (1) staff each drawn from the various department, that is advance department, entry's department, treasury department. Record and management system were all interviewed.

Ten (10) customers of Habib Nigeria bank Ltd Minna were also randomly interviewed forming a total sample size of sixteen (16). This population size is however ideal for the problem under study because it comprises of all the sections and department that is needed in any commercial bank in Nigeria.

### **3.3 Research Instrument.**

The instrument used for this study was oral interviewed. Both structured and unstructured interviewed drafts were used on both staff and customers of Habib Nigeria bank Limited Minna branch in order elicit information to answer the research questions.

In order to maximize the reliability of the instrument the questions were formulated in a simple and clear language so as to avoid ambiguity.

### **3.4 Methods of Data Collection**

To achieve a fair level of representation, two major sources were used to collect data for this study. The primary and secondary sources.

The primary sources were the oral interview personally held within the offices and premises of Habib Nigeria bank Ltd Minna branch. Information's were elicited from the views of the manager assistant the accountant, computer operator and ten (10) customers of Habib Nigeria bank Limited Minna branch.

The secondary source' of data was from published works, journals and seminar collection related to the study.

Personal observation was also not an exception to this study. The researcher uses this method to achieve the means of studying the overt behavior of the staff, management and as well as customers of Habib Nigeria bank, when exposed to services that are carried out by computers. This enables the researcher to record staff and customer's reaction to computerization system.

### **3.5 Methods of Data Analysis**

The data collected from the respondent through oral interview was edited and summarized into a state that can easily be used.



The data collected were identified by way of recognition, definition and collation. The data were there after analyzed and finalized by implementation.

### **3.6 Limitation of the Study.**

The fear of espionage of the management and staff of Habib Nigeria bank not wanting to release current data on the nature of their computerization which they considered a top secret because of competition is a limitation in carrying out this research work.

Another constraint to this study is that the bias nature of the respondent might affect their responses.

## **CHAPTER FOUR**

### **PRESENTATION, INTERPRETATION AND ANALYSIS OF DATA**

#### **Introduction**

This chapter is devoted to the presentation analysis and interpretation of data obtained through interviews conducted, personal interview and documentation.

For the purpose of this study the data's are presented in a pattern to make them more attractive, readable and eye catchy. For clarity and coherence in differentiating the type of respondents to be studied, the researcher categorized the respondents into three groups, this includes the customers, the staff and as well as the management of Habib Nigeria bank limited Minna branch.

#### **4.1 Presentation and Analysis of Data.**

From the personal interview conducted, the responses of the respondent were helpful in the resolution of the problem of study. The questions asked were derived from the research questions of study as well as the hypothesis formulated.

With references to the structured questions asked during the interview session (see appendix for the questions). The respondents view are presented and analyzed there off:

#### **4.1.2 reasons for the introduction of computers in Habib Nigeria Bank limited:**

From the view of a management staff. When Habib Nigeria Bank limited started it full commercial banking its operation were manual like every other bank in the country, but as time goes on a space of about two years the Bank have so many customers that manual operation cannot give them the necessary quick service without them (customer's) waiting for the time more than expected.

However, the idea to computerize the banking operation was brought forth by the management in one of their early board meeting. When the computer system was introduced to link other branches through out the country there was about 100% increase in profit after tax.

#### **4.1.3 Kind/Nature of Computerization in Place towards Customers Satisfaction.**

From the view of the computer operator computerization covers all the branches of Habib Nigeria Bank limited. And this is the reason why a customer who have and operate an account with this branch (Minna branch) can cash his or her money in Kano or any other branch in any where throughout the federation and even its branch at Pakistan.

He emphasized that the method is very simple, that what the customer need to do is to go to the pay cashier desk, ask for a teller fill in the amount and indicate the account number in the column provided in the teller and such will be cashed with the said sum in the account.

#### **4.1.4 Problems Encountered at the Introduction of Computer in Habib Nigeria Bank limited.**

The response to this question asks regarding the problems encountered at the introduction of Habib was thrown to a management staff and the computer operator their views are summarized below:

Sincerely speaking not much problems are encountered during the introduction of the computer because the bank established a system where staffs (particularly computer operators) are sent on periodic training to introduce to them the knowledge of and operation of computer.



The problems encountered are not much but the financial ability of the bank to make every necessary facility such as:

- a. Steady power supply.
- b. Changing from the manual to the computer.
- c. The telecommunication link.
- d. The manpower.

#### **4.1.5 Problems Encountered During Utilization While Carrying Out Banking Operation.**

Analysis of the respondents view is summarized below: -

The first problem is computer waste and mistake. Have been made by the bank and this has cause the lost of millions of naira for example if a bank modify a program incorrectly with result in million waste of money will be paid. If a missing hyphen is left of one computer program can cause agenda rocket aborted.

Other related problem is crime and fraud this fraud can be committed in a matter of seconds with a computer system. some of the common method of committing fraud are to change input to the computer system avert or misuse valid output from the computer system.

#### **4.1.6 Avoiding The Problems Associated With Computers In Banking Operation.**

The computer operator has this to say:

The bank has a standard procedure for the acquisition and use of computer for the purpose of avoiding the waste and mistake. Realizes the good policy and good computer management that save the banks thousands of naira.

In addition, the issue of crime and fraud, the bank has procedures and specialized hardware and software to protect them from crime and fraud. Many of these procedures and special purpose devices are carefully guarded secrets.

#### **4.1.7 Benefits Derived From Computerization.**

The respondents view as to the benefit of computer in Habib Nigeria Bank limited A lot of benefits were derived from the three different categories: -

Firstly, the customers have this to say: we don't wait for a long time any longer during report and withdrawal of cash when compare to day's of to be use of manual operation, also the problem of carrying cash along with you during business trips are curtailed. You don't even need a bank draft, the only thing you do is to go to your business destination provided there is Nigeria Bank limited bank branch there, and you will cash your money with ease.

To the staff most of the manual work are carried out by the computer, thus relieving them of fatigue and other unwanted pressure of work, and this enhances there productivity.

To the management, there is increase in the financial base of the bank and of course the profit position the bank is forced to be reckoned with in forms of banking operations.

Nevertheless, computers also have a tremendous benefit in terms of labour cost preferred to human.

In addition there are other internal services in which computers tend to be beneficial such internal services are:

- a. **Payroll:** - Here it enables the management of the bank to smoothly pay employees salaries and wages. This aspect of the computer, it helped the bank in the rapid processing of the large number of the routine calculation necessary to determine net pay. This makes the factor which complicates the issue of employee's salary easy.
- b. **Annual turn over:** - The bank turn over can be observed without much stress because of the computerization process. The management of bank can analyze and have access to necessary information they needed to increase turn over.
- c. **Account receivable:** - Computers help the bank to keep records of the amount which are owed debtors, through long term loans and short term loans like over drafts to finance their help in collecting outstanding debts. Also there will be control on the types of borrowing that the bank can embark upon.

Apart from the functions performed by the computer in relation to customers account such as in the areas of cash teller services, clearing of cheques and fund transfers, are there any other functions performed using computer in your bank?

Answer : - Actually these are other functions performed with a computer in the bank such pay roll filling of book keeping and other administrative functions such as keeping of staff records.

#### **4.1.8 Efficiency and Effectiveness of Nigeria Bank limited in Computer Application.**

The respondent view as summarized below:

Within the financial segment, program was evident in capital market development with growth in market capitalization and volume of trading activities these are all achieved with the computerization of most of the banking activities.



Reforms in the payment system and improved supervisory surveillance through network have enhanced regulatory enforcements and have imposed greater market discipline in the money market.

We are also please to inform you that with the trends in computerization (network) activities the bank has recorded superior operational performance in the year ended December 2003 in spite of increasing competitiveness within the banking industry

#### **4.2 Testing of Hypothesis.**

##### **Hypothesis I**

H<sub>0</sub>: Computer application in commercial banks has no effect on customer's satisfaction.

H<sub>1</sub>: Computer application in commercial bank has effect on customer's satisfaction

Based on the finding from response to question 2 and 6 on appendix (1) in relation to customers the view that customers who have and operate accounts with Nigeria Bank limited can call their money in Kano or else where.

Another area of customer's satisfaction as viewed by the respondent on answer to question 6 on the appendix. Was that the customers' long wait during deposit and withdrawal of cash and at the same time problems of carrying cash along during business trips are curtailed.

In the light of the above responses the null hypothesis is rejected and alternative (H<sub>1</sub>) accepted which implies that computers application in commercial bank has effect on customers satisfaction.

## **Hypothesis II**

H<sub>0</sub>: Computerization do not result in efficient and effectiveness of management of Habib Nigeria Bank limited

H<sub>1</sub>: Computerization result in efficiency of management of Nigeria Bank limited

For the purpose of testing these hypothesis responses to question on e and eight on the appendix were employed.

As reflected on answer to question one indicated that computerization has given the necessary quick services to the customers irrespective of their large number without waiting for time more expected.

In addition to this respondent view to question eight an appendix also affirmed that efficiency and effectiveness of management was evident in capital market capitalization and volume of trading activities and the bank has recorded a superior operational performance in years ended December 2003.

In the light of the above responses the alternative hypothesis is upheld this concludes that computerization results in efficiency of management of Nigeria Bank limited.

## **Hypothesis III**

The use of computers in banking operation has affect the ways in which banking operations are performed.

From the analysis as contained in the suggested solution to question three by the respondent, are not much but the financial ability of the bank to make every necessary facilities available such as : -

- a. Steady power supply
- b. Changing from manual to computer.
- c. The telecommunication link.
- d. The manpower.

Other problems brought forth by the respondents are computer waste and mistake crime and fraud.

#### **4.3 Findings and Discussion:**

From the data presentations in this chapter, the following can be drawn.

1. The reasons that led to the introduction of computer in the banking operation of Habib Nigeria limited stems from the growing number of customers where manual operations alone cannot contend with all the necessary quick services required to effectively render their services.
2. The kind of computer operation of Habib Nigeria bank limited covers all the states of the federation. That a customer from the bank can withdraw its money in any of the branches nation wide.
3. the likely problems faced while carryout the banking operations with computers stem from unsteady power supply telecommunications link the man power need, other related problems includes crime and fraud that is altering of data files, fraudulently operate computer system or misuse valid output from the computer system.
4. Another finding also revealed that these problems of crime and fraud can be avoided through a programmed standard procedure for the acquisition and use of the computer. Policies and good computer management. And as well as computer securities both physical and logical measures.



5. Another finding of the study is that numbers of benefits were derived from the computerization such as time saving for customers in the deposit and withdrawal of cash and the problems of carrying large sum of money about is also curtailed. To the staff it reduces fatigue and other pressures of work. It also enhances productivity. To the management efficiency and effectiveness is achieved. It also increases the financial base that profit position of the bank.
6. And that other functions perform by the bank through computer are payroll, filling book keeping and keeping of staff records.
7. Both the two hypothesis that computer application in commercial banks has no effect and the other which states that computerization do not result in efficiency and effectiveness of management of Habib Nigeria bank limited is invalidated.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.1 Summary**

As previously stated the general objective of this study is to justify the effect of computerization in the management of commercial bank (Habib Nigeria limited Minna branch), prove the nature and effect of computer and to unfold the relevance of its application to the management of commercial banks.

Results of the findings indicates that computer application have enormous benefit such as quick service delivery to customers' electronic banking such that the customers can withdraw or deposit money in all the branch of the bank nation wide. The efficiency and effectiveness of staff is also enhanced resulting in an increased capital base (profit position).

In the application of computer to banking operations a lot of problems were encountered stemming from power failure, telecommunication and manpower. Above all computer waste, and mistake, crime and fraud.

It is against this background that standard procedure for the acquisition and use of computer, computer securities such as both logical and physical measures were employed to curb the problems of computer waste and mistakes, crime and fraud.

#### **5.2 Conclusion**

Having interpreted the findings and going by the facts high lighted in the course of this research work it has become evident that with computers, prompt effective and efficient banking services are rendered to the public. It is clear that other computerized banks. Afri bank and lots of others are achieving their set out objectives. Although this

success depends on the maturity honesty and dedication of the staff which Habib Nigeria bank limited is not left out.

### **5.3 Recommendations**

In the light of the discoveries in this study the following recommendations are made with the aim of enhancing the commercial banking objectives:

1. The banks should fully computerize their operation this if done, the problem of time wasting in the bank would be a thing of the past this will be backed up by efficient and prudent management. It is therefore recommended that banks where operations are run manually should be computerized as this is the only viable option if they have to survive the 21<sup>st</sup> century banking competitions.
2. in carrying out the computerization process, the following issues need to be addressed, the organizations goal and as well as hardware and soft ware package are such that can be properly maintained, this is because prolonged break dawn is inevitable where adequate maintenance program is not avoidable.
- 3 The management should eschew subjective attitude towards computerization, by always going for the services of qualified and competent personnel to man the computer department,
4. Regular training program in the form of work shops and seminars should be carried out as and when necessary to evolve qualitative and unique banking services.
5. For security and confidential matters there should be adequate restrictions to the computer operators. Those that are not supposed to be in charge of the computer operations should no be allow access to it.



6. The management of the banks should ensure that there should be segregation of duties in computerization so that no single person start and complete a single job solely.
7. The computer systems should be subjected to constant review so as to reflect the realities of the social environment.

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## APPENDIX

### Sample of questions asked during the interview session

1. What reasons calls for the introduction of computerization in your bank?
2. What are the kind/nature of computerization in Nigeria Bank limited?
3. Does the bank encounter any problem at the introduction of computers to carry out its operation?
4. What are the problems faced while in operation?
5. Is there any practical steps taken to avoid these problems?
6. Does the bank derive any benefit from the computerization?
7. What functions do the computers play in carrying out banking operation?
8. How efficient and effective are the management of Nigeria Bank limited since the introduction of computer in it operations?