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COMPUTERISED MANAGEMENT INFORMATION SYSTEM

A CASE STUDY OF PERSONNEL DEPARTMENT

NITEL PLC MINNA NIGER STATE.

BY

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CERTIFICATION

This is to certify that this project ~~was~~ carried out by Miss Okpalaoka Ijeoma meets the requirement for the award of a post graduate Diploma in Computer Science of Federal University of Technology, Minna, Niger State.

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DEDICATION

This project is dedicated to the Almighty God for his provision and protection throughout the duration of my study.

And to my beloved parents Sir, S. C. C. Okpalaoka and Lady M. Okpalaoka.

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Finally, I pay tribute to all my colleagues in this course.

ABSTRACT

This study is aimed at solving the Personnel Department Management Information System problem of Nitel Plc, Minna Niger State.

Considering the importance of the study, several approaches were adopted, these include investigating the present system (manual) alternative to the proposed system.

Consequently, the survey favoured a replacement of the manual personnel information system with a computerised system. In this respect a system software was developed to the specification of the survey report.

The software was developed in Database 111 +, a database management package, in which case data can be input at intervals to update information.

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CHAPTER ONE

1.0 GENERAL INTRODUCTION

1.1 PREAMBLE

A Management Information System is an organized collection of people, procedures, databases, and devices used to provide routine information to managers and decision makers.

In Management Information System, data is collected organized and processed, and made conveniently accessible to the manager so that the information will be of assistance in the manager's daily operations. Much of this information is often in the form of reports that are posted according to a predetermined schedule, Example include payroll and sales reports generated on a weekly or monthly basis or monthly inventory reports.

Such reports enable the company to maintain control and also serve to provide a communication system that links the various units or departments of an organization so that managerial actions are made in consent.

1. The aim of Management Information System is to ensure that the information provided should be relevant to the individual decision maker hence, the information described as data should be relevant.

ii. In terms of accuracy, data that enters into the system must be validated to ensure that decisions are made with information obtained from accurate data. And also the information reflects the current situation not from briefings that is out dated.

iii. To give the Manager critical factors he requires to control the organizational success to be highlighted.

iv. The information needed should reach the man at the time it is most needed.

v. The system should be capable of being redesigned conveniently so that it responses to changes to the need of people.

Presently, at Nitel Personnel Department PLC, Minna, the Personnel Information Management System which is responsible for the production of useful staff information is not computerised. Hence staff information are kept on paper and fixed into file jackets. This job is done by the personnel department of the Nitel PLC Minna.

But the problem this exposed is that, this system is not well secured and therefore staff information can easily be seen or revealed to the general public. Also, this most at times calls for duplication of information which had earlier been supplied by the staff.

Therefore there is need for a computerised management information system for Nitel Personnel Department PLC Minna. With computerisation data will be stored more on computer files and data bank than on paper as earlier specified.

It will also provide the organization with means to improve the speedy and efficiency of the collection, manipulation, storage and reporting of data. This does not really imply that without computer the MIS cannot work, but what we are trying to see is the pace, efficiency and effectiveness of this information system.

Infact, without a human, being able to operate a computer, it is a useless box, computers allow one to be fast and powerful that is to rapidly treat a large and complex set of data. Therefore it can be said to be an extension of human beings ability to store, retrieve data, manipulate data and make decisions.

1.2 WHY COMPUTER

A computer is an electronic machine which is capable of processing data in a wide variety of ways with an extremely high degree of speed and accuracy.

Initially, the computer was designed as a tool to manipulate numbers and solve arithmetic problems. This original use is understandable, since most of the early designers and users were mathematicians, scientists and engineers.

However, people began to realize that the computer could process symbols (e.g. alphabets symbols) as well as numbers. Indeed, the computer can read input data, transfer or move data, store and retrieve data, test data by logical operation and generate output results.

Things that actually brought about the use of computers are:

a) To help in making an easier, accurate and reliable logical comparison between things.

b) Computer was thought and developed to reduce the complex calculations into smaller forms.

c) To ease the cumbersome of inflow and outflow of data and information respectively.

d) To further help in efficiently storing, filing and processing of data and information.

In view of the fact that its functions are broader than just computing, the computer is sometimes more descriptively called an electronic data processor (EDP) or an automatic data processor (ADP).

Today, because of the invention of computers, they are active in almost all divisions of science and technology, and are doing their jobs efficiently. Apart from pure computational work, they control production processes, handle statistical work, do economic planning gather and process information and solve logic and other problems.

Computer can be classified into two main types depending on the way they represent and process information.

They are:

i. Analogous

ii. Digital and Hybrid Computers.

Analogous computer perform its operation by measuring and comparing or relating physical phenomena or changes and variables in the form of mathematical equation in some notable quantities. Analog Computer processes data that vary continuously such as variation temperature and speed etc. It is also used for a wide variety of industrial and scientific applications that requires the processing of data that are measured continuously. It does not contain memory since it measures or compare data/value.

Digital Computer performs arithmetic operations and access logical decisions according to instructions coded to it in advance. Here numbers and letters are represented as digits, personal computer and mainframe are digital computers.

Hybrid computer combines the capabilities of analog and digital computer system in one. They are powerful computing devices and are mostly used to solve rather sophisticated problem such as those from the studies of process control and optimization, any physical process described by a set of physical simultaneous ordinary or positive differentiation.

In turn, it can also be subdivided into special purpose and general purpose computers.

A special purpose computer is designed for only one purpose. It is designed to carry out specific tasks. The computer used for guiding Nasa's space shuttles are example of special purpose computers which cannot be used for other purposes.

A general purpose computer can be used for many purposes. They are designed not specifically for specific jobs. It may be used for playing games, for handling payroll computations, to use graphics to design buildings or to solve complex mathematical problems.

1.3 COMPARISON OF COMPUTERS AND HUMAN IN PERFORMING DATA PROCESSING TASKS

BASIS FOR COMPARISON	CLERK	COMPUTER
Speed of Execution	Relatively slow	Extremely fast
Ability to continue processing over an extended period.	Poor	Very Good
Ability to remember or retrieve information	Relatively accurate	Accurate
Accuracy of work	Makes errors	Makes virtually no error
Ability to consistently follow instructions	Imperfect	Perfect
Ability in new situation	Fairly good	Lacking
Ability to learn by trial and error.	Fairly good	Lacking

1.4 AIMS AND OBJECTIVES

The objectives of this project is to design and implement an interactive, user friendly database management system for the personnel department of Nitel PLC Minna, Niger State.

The recent improvement in the application of computers in solving human problem calls for the critical study of the problems created in the personnel department of Nitel PLC. Minna or the inadequacy of manual system of keeping personnel records in the department.

Therefore the main aims and objectives of this project are as follows:

a) To study in details the personnel management information system in Nitel Personnel Department its problems and prospects and to offer some useful suggestions for possible improvement.

b) Design an application software required for effective use, which will then take care of all problems associated with personnel information.

c) Design means and strategies required to effect computerisation of personnel management information system on theoretical basis so that in the near future, this can be used for the same project and

d) Laying foundation and foresight for other developments that would follow later in the years ahead.

It could be quite frustrating when information is required about a particular staff, and half of his or her files have been eaten-up by rats or other destructive insects. But with the use of computer and the software that will be developed, the above mentioned problems will be solved. All the numerous piled up files will be replaced by small simple easy to handle computer diskettes.

1.5 RELEVANCE OF THE STUDY

Management Information System is a system specifically designed to channel large quantities and numerous types of information through an organization. In Management Information System (MIS), data is collected, organised and processed, and made conveniently accessible to the manager so that the information will be of assistance in the managers daily operations. However, the importance of this study is to:

a) Design means and strategies require to effect computerisation of personnel management information system on theoretical basis so that in the near future, this can be used for the same project.

b) It will set the tune for other similar projects of practical importance in the office.

c) It will become part and parcel of a reference material for other future endeavour similar to this one but not necessary under the same setting.

d) Computerisation will lead to improvement in efficiency and enhance effectiveness.

e) To minimize cost benefit. Example, easy retrieval and access to data, reduction in duplication and time wasting and better management etc.

1.6 METHODOLOGY

The study is designed to computerise management information system of personnel department, Nitel PLC. Minna, Niger State. There are several investigative techniques. They include observation, record searching, special purpose records, sampling, questionnaires and interviewing.

However, the methods of gathering information for this study will include observation and interview method.

OBSERVATION:- This involves watching an operation for a period to see for oneself exactly what happens. The technique is particularly good for training bottleneck checking facts that have already been noted and generally, apply a "seeing eye to the job".

ORAL INTERVIEWING:- This involves asking questions to gather information needed. Interview is by far the most common and most satisfactory way of obtaining information, particularly to obtain information about objectives, allocation of duties and problems and failures in the existing system.

DOCUMENT REVIEW:- This involves the examination of the organisational chart of the personnel department as well as operating procedures and functions of various divisions, departments and individual officers. The result of the study shows how these components relate to one another.

1.7 SCOPE AND LIMITATION

The proposed computerised Management Information System of personnel department Nitel PLC. Minna, Niger State will form the basis of the project since presently the activities engendered by this project is not government inspired but rather purely an academic exercise.

In view of contending for time the project will be limited in coverage to the computerisation of the personnel management information system of the personnel department Nitel, Minna.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 PREAMBLE

A Management Information System is an organised collection of people, procedures, database, and devices used to provide routine information to managers and decision makers.

The operational efficiency or effectiveness of the personnel department depends on quality of information generated, hence other functional areas are typically supported by management information system.

According to William Bernard in his book titled "Human Resources and Personnel Management". Management Information System provides information but Decision Support System shapes that information to managers. Decision Support System allows decision maker to ask questions about the data by using models to solve problems involving the data. That is to know if the decision is highly structured and if it can be made using set policies.

William Bernard has the view that personnel department requires large amount of detailed information and that increasing the quality of the personnel department's contribution depends on the quality of its information. And that many personnel activities and much effort by personnel professionals are devoted to obtaining and refining the departments information base. He also had it that the information requirements of a full service department is only hinted at such questions as:

* What are the duties and responsibilities of every job in the organization?
* What are the skill possessed by every employee?

* What are the organizations future human resources need?

* How are external constraints affecting the organization?

* What are the current trends in Wilkinson compensation of employees? etc.

According to Joseph Wilkinson in his book titled "Accounting and Information System" (1991), the most important information system in a firm, other than the accounting information system, is the management information system. Its purpose is to provide decision - making, and attention directing information to managers via personnel department for effective management and efficiency. To him many managers are recognizing that they need more relevant and timely information for decision making.

According to Everard - Burrow in his book "Business Principles and Management" (1984), all business transactions involve data, and data are converted to information for the purpose of making decisions. That most organization generate huge amount of data, yet decision makers often have complaints, because there may be too much of the wrong kind of data, or requested information may arrive too late to be useful. In some cases, information needed in personnel department may be available in another department and not readily available where needed, or not in form needed.

Everard - Burrow had it that management information system is an organised way to capture, process, store, retrieve, and distribute information throughout an entire organisation. He stated that each department should be given different kinds of equipment. For example, the office manager usually need word processing equipment whereas the accounting department will need data processing equipment. And that the system if in operation should be reviewed on a regular basis to determine whether to maintain or to revise the system.

Steiss in his book titled "Financial Management in Public Organization" (1989), stated that the timely flow of information is vital to effective cost management and that management information systems often make use of computer to store and retrieve vast amount of data. And also many management problems are relatively short lived, however, and traditional methods of building large management information systems may result in the delivery of "too much, too late information". That the attributes of good decision making by providing quality of information rather than quantity of data should be enhanced.

And finally to managers, the management information system is the very computer based information system that support all their decisions. Within the management information system there are four subsystems that carry out specialized information roles which cannot be overlooked. They are:-

1) The Management Support System (MSS)

2) The decision Support System (DSS)

3) Office Information System (OIS)

4) Functional Information System (FIS)

2.2 SUBSYSTEMS OF MANAGEMENT INFORMATION SYSTEM

The examples of management information system are as follows:

i) Decision Support System (DSS)

ii) Expert System (ES)

iii) Office Information System (OIS)

2.2.1 DECISION SUPPORT SYSTEM

A decision support system allows decision maker to ask "What IF"? questions about the data by using models to solve problems involving the data. A decision support system is used when decisions cannot be made using clearly defined policies, then the models and graphics supplied by a decision support system is used. They support decisions that are so different each time that would be hard to develop a standard set of procedures for programming them. A decision support system should enable the decision maker to apply the right decision rules to a problem, rather than using standard rules that may not apply because of changing conditions. For example, it would be ineffective to apply an inventory reorder model designed for slow moving items to a problem situation involving fast moving items. A decision support system provides the decision maker with the flexibility to explore alternative by using appropriate data and models.

The design of a decision support system most take into account the characteristics of decision makers, and of the decision making process. Decision support system attempts to combine the use of models or analytic techniques with traditional data access and retrieval functions. A manager can overcome some of the problems associated with traditional information system by determining what database can be used, by defining what data analysis techniques are required, and by identifying what output are meaningful.

In building a decision support system, you first need to define your information requirements. Ideally a decision support system should provide a database that serves as a repository of data for easy access and change. Copies at database that support transaction information system are often used in decision support system, for example, an order history

database detailing customer orders over the past 18 months may provide an excellent source of data for a decision support system.

The next step in developing a decision support system is to determine the type of data access or analysis needed. Status access, personal analysis, and model based analysis are possible methods of using database.

The tools for decision support system include a variety of software supporting database query, modeling, data analysis, and display. A comprehensive tools kit for Decision Support System would include software supporting the application areas. Tools like spreadsheet program make it possible to evaluate alternative ways of allocating resources and support the design phase.

Finally, choice of the selection of an appropriate course of action, may be supported by summary statistics of the preferred at alternative.

As user learn how to develop their own information system, they need to become concerned with quality assurance data validation and testing backup and recovery.

In summary, decision support system perform the following functions:

a) Provide information on a timely basis

b) Ability to control ongoing operations.

c) To achieve a better understanding of the business.

d) To examine more alternatives.

e) To respond quickly to unexpected situations.

f) Help managers analyses the long range impact of a new marketing venture and to avoid future problems.

g) Ability to achieve to time and cost savings. If managers take hours to make a budget forecast using spreadsheet instead of 20 hours using a calculator, time effectiveness improve.

2.2.2 EXPERT SYSTEM

Expert system is a type of information systems that is being used more and more to support managerial decision making. In expert system, knowledge is represented in form of rules or in form of frames. Rule based system consist of sets of rules that describe how knowledge is used to reach a conclusion. Frame based systems include frames, or networks of nodes, organised in a hierarchy to represent knowledge. Depending on the nature of decision the expert system will use different rules. These rules are applied in a different order in different decisions. Each time a rule is executed, a change in the database is triggered, new questions are asked, and new rules are applied.

Expert systems are good at problems requiring diagnosis, prediction, and planning. Some diagnostic system are designed to detect system malfunctions from facts that are supplied. For example, expert systems have been developed to diagnose faults in electrical systems, electronic equipment, and automotive subsystems. Expert systems have been used extensively in medical diagnosis. For example, MYCIN was developed to assist physicians in diagnosing infectious blood diseases using knowledge of patient history, symptoms, laboratory test results and the characteristics of the infecting organisms, and recommend appropriate therapy. Another Expert System, Blue Box, help diagnose and treat various forms of clinical depression. The system uses information about the patients symptoms and medical, drug, and family histories to suggest

a plan that may include hospitalization and drug treatment. Expert system in XCON uses information on the customers order to determine necessary computer system component correctly.

As can be seen above, the description of expert system in medicine, engineering, business, and other fields. Expert system technology presents an opportunity to capture the knowledge of experts and to share it as a resource throughout the organisation.

The initial step in developing an expert system is the selection of a project in which a recognised expert can be found. This expert should be many times better than an amateur problem - solver in the particular area. The task must also be narrowly defined, so that specialised knowledge can be used.

Even though an expert system may be possible and justifiable, it may not be appropriate unless the task at hand is appropriate. The task must require a heuristic solution, that is, one which requires use of rules of thumbs to achieve a solution. Secondly, the task must be sufficiently narrow to make the problem manageable, yet broad enough to be of practical interest. Thirdly, the task must be a serious problem is able to address.

2.2.3 OFFICE INFORMATION SYSTEM

The office is often viewed in three distinctive ways : as a location at which office work is completed, as a set of function or tasks, and as an integrated system. The way the office is viewed has implications for the way office work is organised and how the productivity of office workers is measured and improved.

Office performs three functions, administrative support, document processing, and data processing. A considerable amount of office technology has been developed to address the automation of the administrative support and document processing functions. These technologies include word processing, desktop publishing, scanning equipment, computer conferencing and electronic mail systems etc.

An important means of improving office work is to integrate the various office technologies into office information system. when this is done the computerised output of one system becomes the input of another system. Thus, electronic scanners and graphics software can provide input to desktop publishing systems the output from which can provide input to computerised database and electronic mail system. Office technology provide operational level support for managers and computer technology and information systems is used to support managerial decision making.

2.3 IMPORTANCE OF MANAGEMENT INFORMATION SYSTEM AND BUSINESS ORGANISATION

Management Information System has began to explore alternative application development approaches, including software packages, user development and phototyping in system design. Automated tools for software engineering have also been introduced to speed up the application development life circle.

With the advent of computer technology in the 1950s, business organisations began to develop Management information system. These systems are in essence a complex communication network linking all parts of an organisation no matter how geographically

dispersed they may be. Such a system permits input data from any point within the organisation, data transmission, data processing, and information storage and retrieval. In effect, it is capable of gathering and processing all the data needed to provide information for planning, operating, processing, and controlling the organisation.

While the potential value of management information system as a communication channel is great, the technology appears to be far ahead of actual or effective application to date. Most organisations have not yet developed their systems to be extent possible. Infact, this is because many top level managers are reluctant to put certain data into the computer data bank for fear it will become available to unauthorised persons. There are many applications, however, where management information systems have proved worthwhile, particularly in such areas as production planning and sales forecasting.

A major benefit of the use of computer networks for communications is that the information can be transmitted directly from the operating levels of the organisation to the highest levels without having to be processed through the several hierarchical levels in between. This both saves time and reduces the chances of distortion of the information transmitted.

Infact, management information system plays lot of roles to business organisation, thus management information system through strategic planning systems provide top management with information that assist in making long range planning decisions, for business organisations. These strategic planning information system are used by top management for the setting of long term organisational goals. In other word, tactical information system provide middle managers, with the information they required to allocate resources needed to achieve organisational goals. Often these tactical systems summarize data generated from operational system. Many

organisations today are building information system to achieve a competitive end. The growth in information system involves the construction of operational, tactical and strategic planning information system to support the managers of the business.

However, the growth of data processing system involves more than technology and applications. It requires user involvement in application development, the organisation and management of management information system function, and the development of effective planning and control strategies.

In terms of financial information systems, tactical financial information system supports management decision making by providing managers with regular exception reports, and other information that helps them control their areas of responsibility and allocate their resources to pursue organisational goals.

Management information system also help managers design many computer supported tactical level information system for the financial decisions.

Management information system aid business organisations to forecast future of that particular organisation in its environments. Management information system develop hardware standard providing support and training and offering technical assistance and training program.

And finally an actual management information system provides an organisation with flexible, integrated tools for the planning and control functions of the endeavor. With the ability to respond to planned and unplanned information requirements at all managerial levels.

2.4 MANAGEMENT

Management is a course in the business social science that tends to describe the way by which materials, machines and people are co-ordinated in other to generate some goods and services required by people. It is also an act of getting things done through people.

So many definitions have been advanced for the meaning of management but the most comprehensive definition views management as an integrating process by which authorized individuals create, maintain, and operate an organization in the selection and accomplishment of its aims. This basic concept has the advantage of denoting a process being carried out continuously over time. It includes the idea of a goal oriented organization as the fundamental area of managerial action as well as the concept of persons specifically charged with managerial responsibility.

Other people have their own version of the meaning of management. According to Shubin (1957), in his book "Business Management", is the execution of the overall policies and plans determined by administration is the function of management proper division and department heads, superintendents, foremen, and sometimes, top executives (often identified as operating executives,) for company officers frequently serve in an administrative capacity for making over all policy as well as in a managerial capacity for implementing policy.

According to (Bittel) 1995 in his Encyclopedia of professional management. He has other supporting concepts, which amplifies the basic concept of management for use in practical settings as follows:

a) Management is getting things done through other people. This definition stresses teamwork, delegation, and results.

b) Management is partly an art and partly a science. This definition recognizes the presence of intuitive, subjective skills in the management process and the growing importance of verified knowledge as a guide to managerial decision and action.

c) Management is an academic and professional discipline. This implies that a tenable body of knowledge is incorporated into the curricular of schools, colleges, and technical institutions. It includes the possibilities for the development of management as a profession.

d) Management is a collective norm used to refer to the entire management group of an organization. Used in this way, the term is convenient for designating a body of managers as a whole.

e) Management is the performance of the critical functions essential to the success of an organization. This definition essentially holds that management is what managers do in performing their roles as managers.

In the conceptional of management science as seen today, the modern management involves a lot of scientific mechanics and policy analysis which must be considered in order to have a universal definition of management. Such modern definition should embrace people, materials, machines and the ideas of implementation, it should explain the communication processes between people and machines within the enterprise.

Putting the above into consideration, one may now define management as the process of getting things done, giving the best available mental and physical abilities with clearly defined communication lines for effectiveness and increase productivity.

Management is infact more or less administrative involving planning, organising, directing, controlling and evaluating etc. The co-ordinated effort of this processes give rise to the production of goods and services that are required by the society which of course is the fundamental basis of management.

In another look the purpose of management is to generate revenue sufficient to keep a particular business in a going concern.

Profit is simply defined as the gain over cost of production. It is infact the difference between the enterprise total revenue and total cost. The purpose of business therefore in this regard is to maintain a steady growth of profit making in the business so as to ensure the continuous existence of the enterprise. From the above, it is obvious that the purpose of management is to generate enough profit while at the same time maintaining standard.

It is the process of ensuring that these salient features of management are maintained, that is infact the corner stone of the purpose of management studies.

2.4.1 TYPES OF MANAGEMENT

THE NEED: Management is a complex discipline, the study of which requires a lot of careful and systematic analysis. A look at our generalized definition of management reveals that it is the interaction between materials, human resources and machines. One may still want to define the process of the interaction as found in communication. If we look at the three variables that are to be interacted, the study of management brings us into many sub-divisions. But for simplicity, we may categorise management into three broad groupings or types.

1. **INSTITUTIONAL MANAGEMENT**

This category of management is composed of the Board of Directors, Chairman and a group of executives oriented towards establishing the relationship between the sectors and their roles in the establishment. The relationships between the firms or the establishment and other institutions in the same business environment or outside environment are clearly defined from time to time.

The institutional management is the head of the overall management of an enterprise This category makes decisions or policies for the rest categories of management, members of institutional more or less stand as the mouth piece. The decision or policies combined by members of this category constitute the ruling principle on which the activities of administrative and technical staff are implemented. The institutional management presides over the management of the annual general enterprise.

2. **ADMINISTRATIVE MANAGEMENT**

It is made up of division or branches otherwise called departments with specific functions allocated to them. Administrative management involves mainly the work of co-ordination, organisation and integration of the ideas or policies already formulated by the institutional management.

It follows therefore that the administrative management is a follow up of the institutional management. The administrative management provides all the necessary processes through which the enterprise goes and objectives can be achieved. The administrative management therefore involves the different managers of the various departments assigning duties and responsibilities to their subjects or subordinate.

3. **TECHNICAL MANAGEMENT**

This is the category that provides technical and vocational advice to the line staff in a line organization. A line organization, is that in which staff or members of staff of organisation are given separate assignment with their authorities clearly defined. In line organisation, the functions of each staff does not encroach the functions of others in the hierarchy of management. In essence, technical management embraces professional advice to the line staff members of the technical management of professional for technical competence. It is geared towards producing tools and services as well as distributing the products to the departments particularly the ware housing unit of the organisation. The service of technical staff is more predominantly required in organisation that engage in secondary production and not in primary or tertiary production.

2.5 COMMUNICATION

Communication touches every sphere of human activity. It informs all of man's actions because it is occasioned by his need to interact with his fellow man. It manifests itself in symbols and verbal forms. Animals and trees also communicate, but it is man's ability to create symbols, ascribe meanings and interpret messages that elevates him above the status of the lower animals and gives form and character to his existence.

Communication also serves as an instrument of social interaction. It helps us to understand them and to predict their response to situations. It provides a means by which people in business, politics, and the profession act, and interact, exchange information, and ideas; develop plans, proposals, and policies, make decisions, and manage men and materials. It is also the lubricant that keeps the machinery of the organisation functioning, it is the means

through which roles are identified and assigned, it is the life blood of an organisation.

The communication processes within organisations are vital for the achievement of organisational goals. They are the processes that link the various components of the organisation together. They are found at all levels of the organisation, and they affect every individual working for the organisation in one way or another. The effectiveness of the communication system the way in which it is managed, has a significant impact on the ultimate effectiveness of the total organisation. Communication have a major influence on both types of organisational goals, task and maintenance with respect to task (or productivity) goals. Without some means for downward communication employees would not know what work they were expected to perform and when and how to do their work. Without adequate provision for upward communication, managers would not have the information needed to decide what to tell employees to do in the future. As organisations grow and become more complex, communication related to the organisational maintenance goal become increasingly important. Employees, including those at managerial levels, want to know how their work and their departments fit into the total operation, and they want to be informed about changes that might have some effect on their jobs or job environment. Thus, in very large organisations, the management effort involved in communications processes can, and should, be considerable.

A variety of channels are used in most organisation to transmit information. Essentially, communication is the transmission of a message from one person (referred to as the source) to one or more other persons (receivers). The vehicle for transmitting the message is called the channel. Communication Channels may be oral or written, formal or informal, and one-to-one. In the organisational context, the message may involve a directive or order to do something, it

may be a suggestion for changing a procedure, it may be an expression of approval or disapproval for the way a job has been performed and so forth.

For the successful transmission of messages, there has to be some assurance that the source and the receiver have some common basis for understanding the messages, that it means the samething to the persons sending the message as to the person or persons receiving it.

When an encoder (the person who initiates the message) decides to speak his message, he has chosen the oral medium. In business organisation or any organisational setting, the supervisor, the director, the manager can engage in conversation with one of his or her subordinates on matter concerning the organisation, such oral communication can also be sent or such information from this type of communication can be passed by with such channel as radio, telephone or face to face. It is the duty of the organisation to choose the appropriate channel that will yield effective result so long as the message is been decoded, (the receiver of the message). If, on the other hand an organisation decides that the message is better put in the written medium or channel, he may choose from any of the following:- letter, report, memo, telex or telegram. Anything which carries your message across to the receiver is a channel. Written communication is just the translation of oral messages into alphabetic symbols. These symbols are then organized together to convey ideas, messages or information between those who participate in the communication encounter. In an organisation, written communication is normally used in reports, queries (normally used to discipline erring staff), for circulars and memos, in telegrams and telex for personal and business letters and for questionnaire and forms designed for collecting information etc.

In describing the channels of communication, it is also important to look at the communication systems, because every organisation has two well established systems, the formal and the informal. The formal system is the officially recognized route for task related messages. The informal system carries unofficial information. One will now examine ways in which messages flow through the formal and informal systems.

i. **FORMAL COMMUNICATION**:- The formal communication system is used for all official messages, including directives, procedures, policies, explanatory memorandums, job instructions and so forth. In most large organisations, the formal communication system is based on a chain of command from the top of the organization down, bottom to top, left to right, or right to left. Depending on the direction of the flow, it could be as being either vertical or horizontal. Within a formal system, therefore, there is a vertical communication flow and a horizontal flow. In modern industry a semi vertical flow has emerged. Vertical communication flow refers to the flow of messages from those at the top of the hierarchy to the persons at the bottom, and from the most senior officers to the most junior workers. It also refers to the flow of messages from those at the bottom to the persons at the top. For this reason it has a downward flow and an upward flow.

The downward flow:- For example in the organogram of the personnel department of Nitel PLC Minna, the downward flow carries messages from the Territorial Manager through the Senior Personnel Manager, Personnel Manager, and Assistant personnel Manager to Officers. In educational institutions, like polytechnic and colleges of technology, downward communication refers to information from the Governing Council to the Rector through the

registrar to the Deans, to Heads of Departments, to Lecturers, to Students, and depending on the nature of the message, to the clerks and cleaners. Generally, it is the communication coming from the person with the greatest authority in the organisation to the person with the least. Originally, downward communication was considered the classical model for information flow in organisations. But things have changed. While important information on organisational policies and plans come down to other employees from the top, workers now have more say in how some policies are formulated. They have Unions which take care of their individual needs while satisfying those of the organisation. Emphasis is now placed on participative management where it is held that the affairs of the organisation must be every worker's concern. That type of thinking has spotlighted the importance of upward communication.

ii. **UPWARD COMMUNICATION**:- This describes information which is sent from those at the bottom of the organogram of the personnel department to the higher ranking officers in the organisation. It is more of a feedback device which supplies information about now people have reacted or responded to the communication passed to them by managers. Example can be seen on the organisational chart of personnel department Nitel PLC. Minna. Here information for upward communication flow from bottom, i.e. Typists/Clerks to the top, i.e. to the Territorial Manager or it might stop at Senior Personnel Manager depending on the issue at hand. As a feedback loop, it enables management feel the pulse of employees. If encouraged, it can boost the employee's confidence and morale as well as enhance productivity.

It must be noted that all messages up or down the power hierarchy, must be sent along the officially recognized channels. Every employee within the organisation is expected to observe this practice.

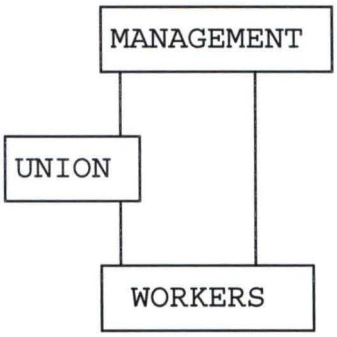
iii. **HORIZONTAL COMMUNICATION FLOW**:- This term refers to the exchange of messages, ideas and information between colleagues or workers on the same level or of the same rank, about the tasks which they perform within their organisation. This plays a coordinating role as people performing a variety of duties exchange information about activities in their respective sections. Communication would be described as horizontal when it takes place among any of the following group of officers, the managerial staff, supervisors of sections, heads of departments, deans of schools or foremen or clerks. It also takes, place among students pursing courses in different departments but who entered the school at about the same time. They normally consult each other, exchanging information pertaining to inter- departmental activities. The exchange is done through face to face interpersonal communication, meetings and committees as well as through memos. It occurs during informal contact occasions such as in canteens and clubs etc.

Horizontal communication gives a sense of oneness across the breath of the organization, by fusing workers or people of the diverse units that make up an organisation. Its importance therefore, cannot be underestimated.

iv. **SEMI-VERTICAL COMMUNICATION FLOW**:- With the advent of trade unions, a new system of formal communication has emerged. Trade Unions whether management approves of them or not, are recognized by Law as the official mouthpiece of the workers and therefore constitute a separate official communication system between management and the workers.

Members of trade unions take up matters concerning the working conditions and welfare of employees with the management after consulting with workers, when agreement is reached

on the issue being discussed, they report these directly to the workers without following the hierarchy as established by the organisational chart below.



On the other hand, if management has sensitive policy decisions that will seriously affect the employee, they might first discuss the matter with the union which eventually passes the information down to the workers. Trade Unions therefore operate the two step system of communication flow, information goes from workers to the union, then to the management or, from management to the union and down to the workers, by passing all other levels of authority within the organisation.

v. **INFORMAL COMMUNICATION**:- The informal communication system is the unofficial channel in processing official information. It is a form of communication that by-passes all official channels of authority. When there is information in the channel, it will filter its way through to the managing director or any other source by a number of means. The main channels of informal communication are rumour and the grapevine.

The grapevine is the channel, usually an oral, one to one channel, through which rumours involve are possible. Changes in company policies, production plans, or top level personnel, their effect on both productivity and organisation climate can be devastating. Because of this, the grapevine generally is viewed negatively by employees although it is often perceived as

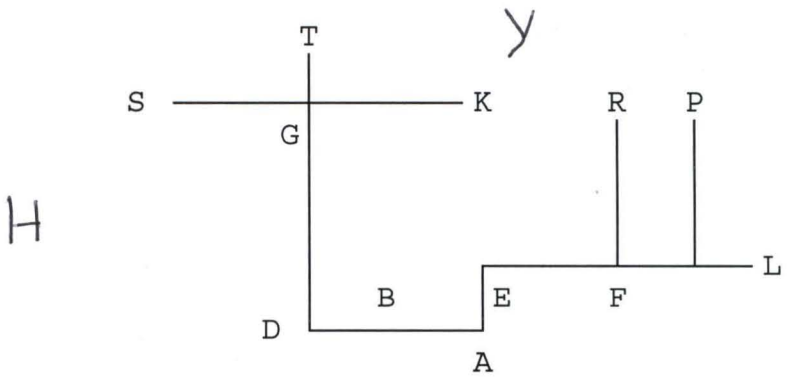
influential since rumours frequently have an element of truth to them. However, most messages transmitted through the grapevine are either groundless or distorted in some ways. Probably the most effective approach for offsetting the harmful effects of the grapevine is to make sure that formal channels are established and used for all information managers and employees need or want to know.

Research has shown that the grapevine system has four patterns.

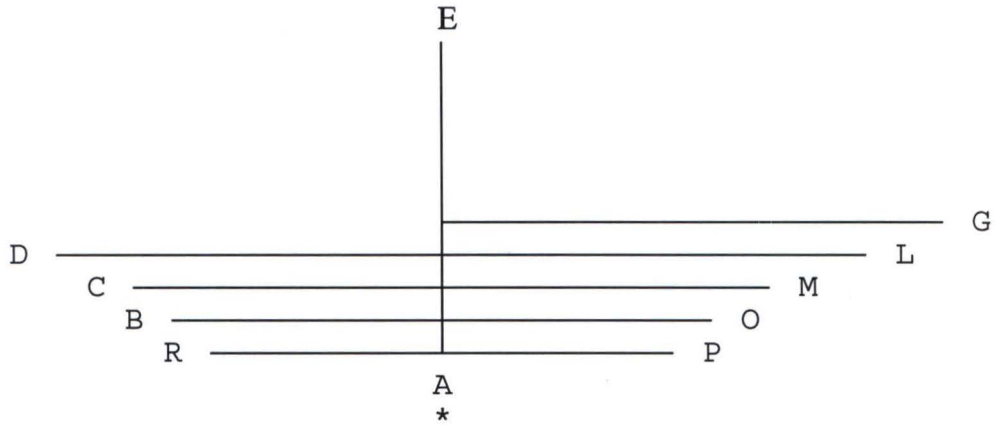
1. THE SINGLE STRAND PATTERN: This exists when the person who gets the information passes it on to someone close to him who in turn passes it on to his close friend. In other words, A passes information to B, B to C, and so on as shown below.

A ⟶ B ⟶ C ⟶ D ⟶ E

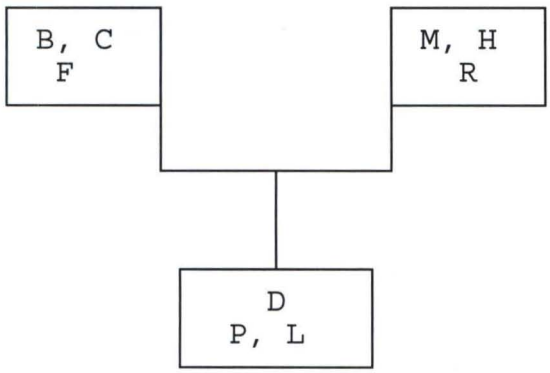
2. THE PROBABILITY PATTERN: This works on the theory that each person who receives the information is likely to pass it on to other persons with whom he is constantly in touch in an organisation. It will be noted from the diagram that those outside the probability chain are likely to be by-passed, regardless of their rank in the organisation as shown in the diagram below. A gets information and gives it to D and E. D gives to G, E gives it to F. G gives it to S, K and T. F gives it to R, P and L. H, Y and B do not get the information because they are outside the probability chain.



3. THE GOSSIP PATTERN:- This operates in the tell-tale fashion. One person A gets information and he shares that with whoever comes into contact with him. There is very little discrimination as to who has the new information.



4. THE CLUSTER PATTERN: In cluster pattern, several groups operate within an organisation and one person will be a member of many of these groups. People who work on a machine form one group. Those who go to work in the same shift may constitute another group etc. The person who happens to get the information goes round in cluster depending on the sub-groups to which members belong. This is illustrated below.



In cluster pattern information is given by person A to each of the groups to which he belongs. Each of the others will in turn spread it among their groups. There are three clusters consisting of BCF, MHR and PLD.

In conclusion, grapevine information will only be of benefit to an organisation if pettiness is avoided and management strives towards decisions that will enhance the overall efficiency of the organisation. If decision makers behave as if they are demi gods controlling the life and death of everyone in the organisation, tensions and negative attitudes will persist and grapevine information will have negative than positive effects on the organisation.

vi. **FEEDBACK:-** Feedback is a reaction to the message, it is a continuous process. When the exchange of communication continues over a period, it produces interaction as both the encoder and decoder swap roles in the process of composing messages. When the message gets to the decoder, he interprets it from the codes or symbols used. If the message is not well coded, he may have a problem understanding it. Whether he understands the message fully or not, he will, however, react in some ways. His reaction may be positive or negative depending upon his level of understanding and the effect the message has on him.

Feedback is therefore an essential part of the communication process. It helps to show whether or not:

i. Communication has taken place;

ii. The decoder of a message has understood it;

iii. The decoder is prepared and willing to partake in the communication;

iv. The encoder had adequately formulated and sent his message.

2.6 STYLES IN DECISION MAKING

Decision making is a mental process by which a manager gathers and uses data. By questioning others, shifting the answers to find relevant information and analyzing data, managers, individually and in group, manage and control information and ultimately their business environment.

There are basically two types of decisions, and each requires a different process. They are strategic decision and operational decision making.

1. STRATEGIC DECISION MAKING:

Strategic Decision Making determines what the organisation wants to be. It is the framework that guides those choices that determine the nature and direction of an organisation.

Setting strategy is a task that belongs to top management. Only senior executives have the responsibility for determining the way the organisation is to be directed, though key line and staff executives must be sure that their respective functions have a clear strategy that is in line with the overall direction of the organization. If top management is not in control of the strategic formulation process, the nature and direction of the organisation will be determined haphazardly by others inside or outside the organisation. Also Government regulations, banks competition labour unions, or middle management will in effect affect the role of senior managers. This could result into poor product and market decisions which may eventually cause serious harm to the health of the whole organisation.

Once the organisation's driving force such as (products/Market, capabilities and result), is determined a coherent strategic frame work can be defined to integrate products and markets, capabilities to support them, the organisation's growth and return targets and the allocation of its resources.

After the driving force is determined and a strategic framework is put in place, strategy must be implemented. Implementation requires communication of the strategy. Individual managers must be able to carry the organisations strategy in their heads and to make day -to-day decisions according to the strategy. Here the critical issues such as major changes, modifications, additions to the organisation's structure and systems to its capabilities and resources, and to its information needs and management that result from setting strategy must be resolved for the strategy to succeed.

ii. **OPERATIONAL DECISIONS MAKING**

Operational Decision Making determines how the organisation should get where it wants to go. It is also a framework that guides how individual managers or teams organise information, investigate situations, arrive at choices, and implement decisions. Once the strategy is set, the organisation will now determine how to carry it out. Operational decision making is equally critical to an organisation success.

Operational Decision Making involves four rational processes. The first concerns organising. Effective managers sort out situations by asking pertinent questions and setting priorities among situations. Second, in addition to their ability to organise, capable managers are good at investigating. A logical sequence is followed in other to determine what information is relevant and critical. A third rational process concerns making choices. Here effective

managers set criteria for choices, evaluate alternatives against these criteria, and consider the risks associated with their choices. The fourth process is implementing decisions. Good managers anticipate what might go wrong and take specific actions to prevent adverse consequences or to minimize their effect.

These four patterns of thinking cover all the operational decision making that managers and employees perform day to day.

2.7 TELECOMMUNICATION DEVELOPMENT IN NIGERIA

Perhaps no history of telecommunications development will be complete without mentioning and acknowledgement of the early contributions of Alexander Graham Bell, a Scottish American, contributions to the early discovery and application of the telephone and those of Guglielm O. Marconi (1874 - 1937) the Italian inventor who contributed to the development of the wireless telegraphs for which he received half of the 1909 Nobel prize for Physics. Some other inventors in the modern telecommunications theory and principles are James Clerk Maxwell who predicted the existence of electromagnetic waves and Heinrich Hertz who demonstrated the application of electromagnetic waves.

In 1894, Marconi hit the idea of communicating through radio waves and by 1895, he could ring a bell a few yards away which was quickly improved upon so that by the end of 1895, he could transmit information over a distance of one mile.

The events which followed these developments in quick succession were to later transform the nature, method, content and other aspects of telecommunications which of course, was never the same again.

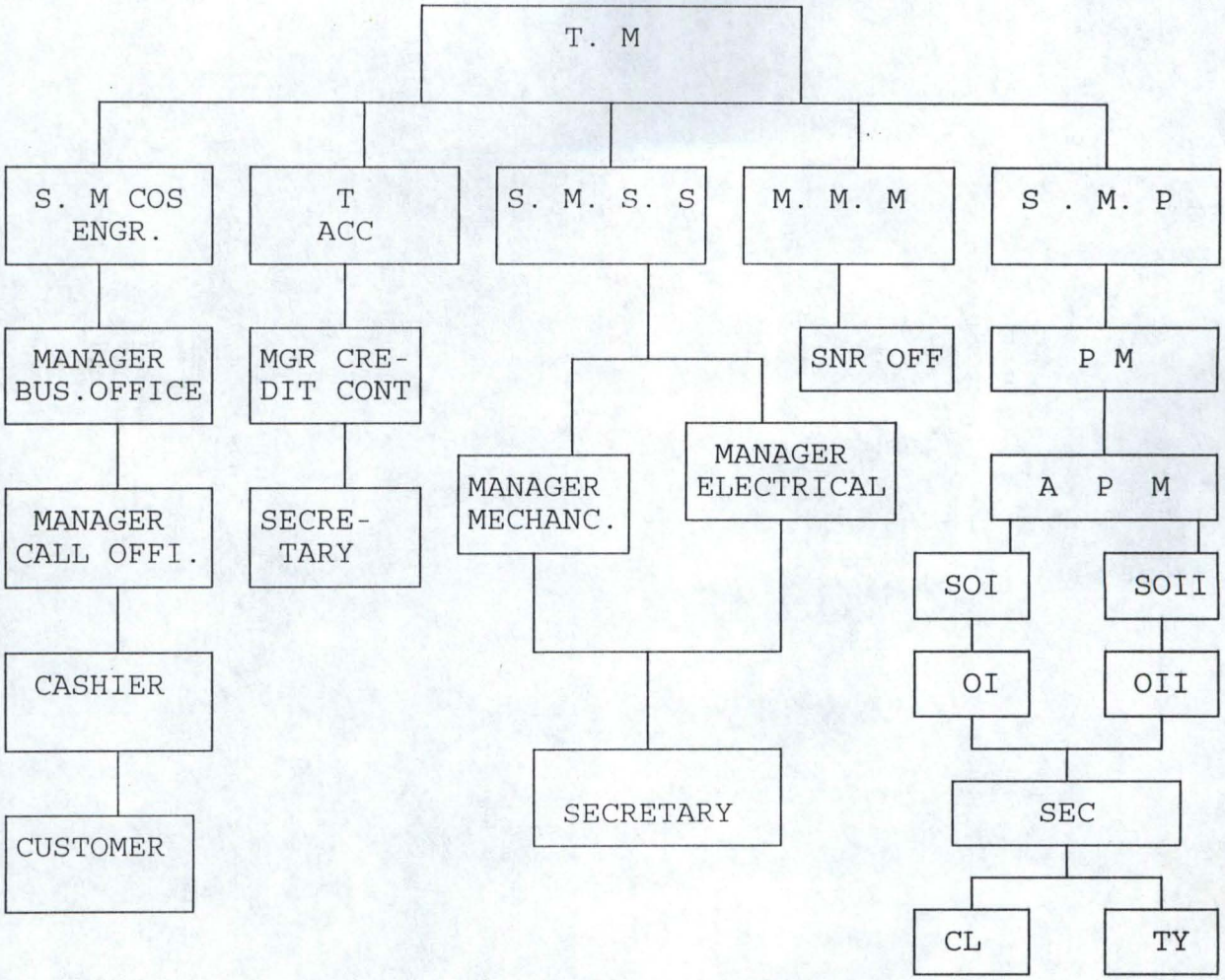
Telecommunications Development in Nigeria is tied to the history of what we know today as Nigerian Telecommunications (NITEL) PLC which started as a postal branch of the British post office in 1851 while the internal telecommunication arm was established in 1885. The key and sounder system of telecommunications was established mainly to serve the interests of colonial masters. Before independence in 1960, series of studies were carried out on the administration, operations and general efficiency of telecommunications in Nigeria. In 1966, the posts and Telecommunications (P & T),, a quasi-commercial department of the Ministry of Communications was formed and backed by Decree 22. It maintained this status and name (P & T) until 1985 when Nigerian Telecommunications Limited was formed.

External telecommunications commenced with the provisions of direct telegraph services between Nigeria and London which was made possible in 1886 by the African District Telegraph (ADT) and the cable and wireless company of London. By 1962, the equity ownership in the cable and wireless company which was registered in Nigeria changed because the Federal Government acquired 51% equity ownership in the company. This made a change in its name necessary to the Nigerian External Telecommunications (NET) Limited. Ten years later (1972), the Federal Government bought over the remaining 49% shares in the cable and wireless company of London. This transformed NET into a Federal Government wholly owned company which was to provide external telecommunications services.

Both P & T and NET existed as separate bodies until the end of 1984 when they were merged and incorporated as a Limited liability company under the companies Decree of 1968. To effect the incorporation, the telecommunications arm of P & T and NET were merged into what became known as Nigerian Telecommunications (*NITEL) Limited and was deemed to

have taken off on 1st January, 1985, a status it maintained until a tripartite contract agreement was signed on 22nd May, 1992 between NITEL, the Federal Government and the then Technical Committee on Privatisation and Commercialisation (TCPC) now known as the Bureau for Public Enterprises (BPE). This agreement was the beginning of the era of commercialisation of the telecommunications outfit and this meant a change from NITEL Limited to NITEL PLC. (Public Limited Company). It has maintained this title to date.

2.8 THE ORGANOGRAM OF PERSONNEL DEPARTMENT IN NITEL PLC MINNA



KEY

T.M	-	TERRITORIAL MANAGER
SM.COS ENGR.	-	SENIOR MANAGER COSTOMER ENGINEER
T.ACC.	-	TERRITORIAL ACCOUNTANT
SM.SS	-	SENIOR MANAGER SUPPORT SERVICE
M.MM	-	MANAGER MATERIAL MANAGEMENT
SM.P	-	SENIOR MANAGER PERSONNEL
P.M.	-	PERSONNEL MANAGER
A.P.M.	-	ASSISTANT PERSONNEL
S.O.I	-	SENIOR OFFICER I
S.O.II	-	SENIOR OFFICER II
O.I.	-	OFFICER I
O.II	-	OFFICER II
SEC.	-	SECRETARY
CL.	-	CLERK
TY.	-	TYPIST

PERSONNEL DEPARTMENT

The personnel department is one of the important functional departments in NITEL PLC Minna which was given the general administrative responsibilities along with the personnel functions when the Nitel PLC. Minna started operations.

The full range of functions of this department are many and varied. For effective performance of these functions, the personnel department of Nitel PLC. Minna is organised into various divisions with the senior manager personnel as the head and is responsible to the Territorial Manager. All other officers of this department report to the personnel manager via the Assistant manger.

The various divisions and their functions can be grouped as follows:

Senior Manager Personnel:-

a) Implementing policy guidelines on staff discipline, employee relations and maintaining and ensuring the smooth operation of staff canteen.

b) Liaising with the Federal Ministry of Employment, labour and productivity and other relevant government agencies to keep abreast with the conditions of service of the company's workers.

c) Ensuring a cordial relationship between the company and the Trade Union to ensure industrial harmony in the company.

d) Formulating and implementing policies on staff recruitment and promotions and liaising with other divisions/departments at the Headquarters.

e) Evaluating all Credentials and handling all matters relating to accreditation.

f) Supervising the documentation of new staff, the processing of staff appraisal, leave papers, and up date of staff records.

g) Monitoring activities in the registry with specific reference to:

   i. Custody and movement of all subject and personal files.

   ii. filling administration and office management.

h) Liaising with the management information services department to up date payroll records.

i) Initiating action on staff in post returns from the zones and divisions and carrying out analysis of same with the objective of establishing the manpower data of the company.

j) Generating statistics and information from Nominal Roll returns on basis of age length of service, occupational group etc. for determining manpower turnover and replacement.

k) Analysing and interpreting manpower utilization returns and collating data on manpower development for inclusion into the company's business plan.

PERSONNEL MANAGER

a) Processing papers of dismissal, termination, suspension from duties and warnings to staff when necessary, and death and terminal benefits of deceased and retired staff.

b) Carrying out investigation of cases of fraud or breach the company's rules and regulations.

c) Processing applications for staff loans, official passport and visas.

d) Initiating staff welfare policy programmes for the company and implementing same.

e) Preparing vacancy advertisement in liaison with the public relations unit and supervising the processing of offers of appointment.

f) Reviewing and establishing guidelines for evaluating and promotion exercises in the company and processing applications for study leave, transfers and deployment of staff.

g) Monitoring the documentation of new staff and ensuring that records are updated.

h) Assisting in co-ordinating staff records functions throughout the company.

i) Assisting in implementing manpower planning and development policies throughout the company.

j) Vetting staff in post (SIP) returns to ensure adherence to the requirements and proper returns.

ASSISTANT PERSONNEL MANAGER

a) Comparing Staff in post (SIP) returns with payroll list and establishing reasons for any variance observed.

b) Ensuring that data from the quarterly staff in post (SIP) returns from the Zones and Divisions are up-dated.

c) Controlling statistics on wages and salary administration throughout the company.

d) Controlling the records keeping registry and advising on the improvement of the records keeping system.

e) Preparing committee reports and approval of memo on recruitment of staff and processing offers of appointment.

f) Preparing interview notification and notices to staff appointment committee members.

g) Analysing the submissions from zones, divisions and departments on promotions.

h) Processing submission on conversion and upgrading of staff in relation to qualification, experience and vacancy and advise accordingly.

i) Assisting in carrying out periodic evaluation of the impact of welfare programmes provided by the company on staff.

j) Attending to all cases of grievances reported by the union or staff and advising on the appropriate line of action to be taken.

k) Advising staff on the out come of their complaints after they have been treated.

SENIOR OFFICER I

a) Performing the duties of Senior Officer II (Personnel) at a higher level of responsibility.

b) Collecting data on manpower wastage returns for effective planning.

c) Compiling statistics on wages and salary administration.

d) Supervising the documentation of new staff.

e) Assisting in carrying out selection and recruitment process.

f) Assisting in the general administration of discipline of staff in the division and others referred to the division.

g) Performing other related duties as may be assigned.

SENIOR OFFICER II

a) Performing the duties of officer I (personnel) at a higher level of responsibility.

b) Assisting in processing papers of discharge, suspension from duties and warning to concerned staff.

c) Liaising with the Ministry of Employment, Labour and Productivity, the Industrial Arbitration Panel, and the National Industrial Court and advising on the approved method of handling industrial disputes.

d) Assisting in evaluating all credentials.

e) Processing applicants for NYSC attachment and deployments by liaising with divisions/departments.

f) Assisting in processing offers of appointment and providing inputs for the review of guidelines on promotion and evaluating exercise in the company.

g) Supervising subordinate staff in the records registry to ensure prompt update of staff records in liaison with he management information service department.

h) Venting staff appraisal forms to identify training needs of staff in relation to their performance.

i) Performing other related duties as may be assigned.

OFFICER I

a) Performing the duties of officer II Personnel at a higher level of responsibility.

b) Preparing periodic vacancy returns and advising accordingly.

c) Collecting data on transfer, recruitment and exits to up-date staff in post returns.

d) Keeping records of all recruitment and exits in the company.

e) Keeping up-to-date statistical returns from the various zones, divisions/departments relating to staff salary and wages.

f) Assisting in processing death and terminal benefits of deceased and retired staff

g) Performing other related duties as may be assigned.

OFFICER II

a) Assisting in processing applications for staff loans, official passports and visas.

b) Processing of employment applicants.

c) Assisting in processing interview claims for candidates.

d) Handling the documentation of new staff and up-date of staff records.

e) Analysing band levels and skills/occupational groups of staff in post returns and approve staff budget.

f) Performing other related duties as may be assigned.

(PERSONNEL), CONFIDENTIAL SECRETARY II

a) Providing secretarial assistance such as taking dictation in shorthand and reproducing them in typed script.

b) Receiving visitors, answering enquiries and telephone calls.

c) Performing routine office duties

d) Typing and keeping of office documents.

e) Performing other related duties as may be assigned.

PERSONNEL SECRETARY I

a) Keeping records of office cash float.

b) Drafting and raising of short official memoranda.

c) Taking minutes at meetings

e) Performing other related duties as may be assigned.

f) Treating files and writing letters.

g) performing other related duties as may be assigned.

CHIEF CLERK (PERSONNEL):

a) Taking care of large registry in any of the company's units.

b) Rendering returns on activities in the unit.

c) Drafting of routine memo and letters for sectional head.

d) performing other related duties that may be assigned.

CLERICAL ASSISTANT

a) Performing routine clerical duties i.e. filling and documenting.

b) Assisting a clerical officer or other senior officers in carrying out assigned duties.

c) performing other related duties that may be assigned.

CLERK (PERSONNEL)

a) Registering of incoming and outgoing mails.

b) Updating of registers, books, cards and other records in the section.

c) Despatching of outgoing correspondence.

d) performing other related duties that may be assigned.

TYPIST

a) Typing manuscripts and other materials that may be assigned

b) Cutting stencils

c) Performing other related duties that may be assigned

CHAPTER THREE

3.0 SYSTEMS DESIGN AND ANALYSIS

3.1 INTRODUCTION

The analysis of details collected during system investigation had confirmed the necessity for an introduction of a new computer based personnel management information system. As such, the next line of action is the outlining of design consideration. The new system is envisaged to:-

a) Embrace the existing organisational arrangement already in place so as to support its performance.

b) Cover the entire department of personnel, as well as taking care of the personnel records needs of each department.

c) Be reliable and easy to be used by the personnel of the organisation.

d) Meet all other user's requirements.

e) provide system specification and

f) take care of the uniqueness of the individual personnel.

3.2 PROBLEM IDENTIFICATION AND DEFINITION

Usual problems of this type of manually maintained basic personnel records are:

a) Employs large number of people resulting in high wage bill.

b) Data processing is always very slow

c) Poor file handling resulting in destruction of vital documents.

d) Occupies a lot of space

e) Poor safety and security for the files

f) reported cases of missing files.

3.3 FEASIBILITY STUDY

The feasibility study was embarked upon with a view to determining whether or not the proposed computerisation is desirable. The methods used to collect data for this study are as follows:

a) Oral Interview

b) Observation

c) Document Review

a) **ORAL - INTERVIEW**: It is quite true that written documents provide information on how the system should operate, but they may not include enough details to allow decisions to be made on the project proposals nor do they present current user's views about current operations. This therefore allows the investigation to have direct discussion with the key personnel in the organisation. Attempts were also made to interact with the potential users of the proposed system.

b) **OBSERVATION**:- This method is employed because of the desire to obtain not only a first hand information about how activities are carried out, but also to actually observe how documents are processed and handled.

c) **DOCUMENT REVIEW**:- This involves the examination of the organisational chart of the personnel department as well as operating procedures, and functions of various divisions,

departments, and individual officers. The result of the study shows how these components relate to one another.

3.5 SCOPE OF THE FEASIBILITY STUDY

The scope of data collected for the feasibility study is limited to the following areas:

i. Personnel data

ii. Method of data processing

iii. Method of file organisation and storage.

iv. File movement

v. Efficiency and effectiveness

vii. Security and safety of files and

viii. Time constraint.

3.6 REPORT OF THE STUDY

During the periods of investigation a lot of informations were gathered on the operation of the existing system. In sum, the balance sheet of the report on the information generated confirmed our fear that the present personnel management information system has outlived its usefulness because of the following basic facts:-

a) The speed with which data are collected and processed is not fast enough to meet the challenges of today.

b) The existing system allows too much room for errors and information on personnel matters are not readily available and its always too late.

The report suggested a straight replacement for an existing manually maintained basic personnel record. Hence the need for a new computer based personnel management information system.

3.7 TESTING PROJECT FEASIBILITY STUDY

3.7.1 OPERATIONAL FEASIBILITY

The operational feasibility of the proposed system was conducted during which it was discovered that the new system being envisaged is operationally feasible because of the following:

i. Top management has accepted the idea of computerisation

ii. There was estacy that the department is going computerised and

iii. There was yawning need for a change.

3.7.2 TECHNICAL FEASIBILITY

It was discovered during investigation that the proposed system can be handled with the current equipment existing software technology and available personnel through the indoor training.

3.7.3 ECONOMICAL FEASIBILITY

The cost of implementing the proposed system would be quite reasonable and affordable as the required computers are available locally.

3.8 REQUIREMENTS SPECIFICATION FOR THE PROPOSED SYSTEM

It was discovered that there is the need for a complete modernisation of the existing system because of;

a) The need to increase speed so as to meet targets.

b) The desire to minimize error and

c) The readily availability of information on personnel matters.

3.9 ANALYSIS OF PROPOSED NEW SYSTEM

The proposed new system implies the application of computer in part or full to the manually maintained data processing with specific reference to personnel management information system. The proposed system will be analysed using the following method:

a) Method of data information generation

b) Method of data processing

c) Method of file organisation and storage

d) File movement/information dissemination

e) Security and safety of files.

The method of data information generation is similar to the one used by the old system since it is the same type of forms that will be used throughout for those that are not computer literate enough to operate a machine. But for those that can operate, they do not need the forms because they will be able to answer the questions the computer is going to ask them on screen

(display). In the alternative, the computer operator can call on the personnel so that while the personnel is answering questions from the operator verbally, the operator is entering them through keyboard appropriately.

The method of data processing adopted here is that each personnel is given an identification number from which he/she is uniquely identified in the database to be extracted.

Once given the identity card number all other data are supplied and attached to the identity card number of the personnel. This process is repeated several times for several personnel. So instead of having separate file for each personnel on the same type of data information, you have one single file for all. This often is referred to as the database file. After all the data information has been entered, you then sort the record accordingly.

Usual method of file organisation and storage is that a single database is created for the whole personnel with a given name to the file. This name of the file is what is required all the time to load it to the computer memory anytime a specific information is required.

To effect file movement, information dissemination can adopt two methods.

The first one is either that you have the file, view the information on the display by issuing query that will actually lead you to the specific information requirement or in the alternative, issue query as at when necessary and print the required information on paper.

The two methods of accessing can be done either remotely in a network environment without any other human involvement except the operator on the telephone line or direct cabling of terminals. In the case whereby the telephone is over a long distance, it is referred to Wide Area Network (WAN) but where the distance is short and connection are through cabling of terminals, it is Local Area Network (LAN). The second method involves the use of a single-

user computer. No resources of the computer is with any other person whatsoever. To some degree, the security and safety of file is guaranteed but open to abuse. However, because of the time constraints, the scope of this project does not cover extent of the abuse.

3.9.1 BENEFITS OF THE PROPOSED SYSTEM

The advantages of the proposed new computer based personnel management information system will include the followings:

i) Fast means of data processing and information presentation

ii) Reduction in staff numbers within the personnel functions.

iii) Reduction in time spent in processing data and information presentation.

iv) Reduction in space occupied by files and file cabinets.

v) Reduction in time spent in searching and storing data.

vi) High degree of accuracy

vii) Better Management information system and

viii) A more effective department.

3.9.2 SECURITY FACILITIES IN THE NEW SYSTEM

The new system has facility for backup files against authorised users. This allows for more than one copy of file or a program. That is files on Hard Disks are copied into floppy disk to serve as backups so that in the event of flood or other disaster, the other copies can still be used.

It has facility of logging via user's ID number. This protects your data in a network against other users, they cannot tamper with your data stored in a computer without this identity number.

There is also protection through the use of "passwords" with which to access their information from a file.

The new system also has sub-directory protection through "password" for example DR - DOS (Multi-user) provide a file and password. Exe, which prevents other users to have access to the protected sub-directory.

3.10 SYSTEM SPECIFICATIONS FOR THE NEW SYSTEM

- Intel Pentium 1OOmhz SVGA (1024 X 768 pixel)
- 8MB RAM (Expandable to 64MB)
- 1.7 GB IDE Hard Disk
- 2 Serial, I parallel ports
- 4 Free expandable slots
- 3.5 floppy Disk drive
- 8x CD - ROM Drive with multimedia facilities
- 101 enhanced keyboard
- Output Device HP laserjet 6L
- Power Supply: UPS 1.2KVA, Stabilizer 1.2KVA
- Operating software - MS-DOS 6.22.

3.11 INPUT/OUTPUT SPECIFICATIONS INPUT

The input into the program are names of employees in the various departments of Nitel PLC Minna via the standard input device keyboard.

The output from the file are names of employed staff of Nitel PLC Minna working in the above mentioned Departments. The reports could either be in a hard copy or visual on a standard output on device (Monitor).

3.12 PROGRAM USER MANUAL

The program staff PRG is written in dBASE III+ tailored towards the result from investigation of the existing system of management information system in personnel department of Nitel PLC Minna, Niger State. This program will replace the manual operation of preparation of nominal roll etc. and as well as the maintenance of the database file.

CHAPTER FOUR

4.0 SYSTEM IMPLEMENTATION

4.1 PREAMBLE

System implementation includes all activities to be carried out when converting an old system to a new one since the time the decision to computerise was taken down to the time when the new system goes on operation.

This chapter is also aimed at providing the user with the necessary information needed on how to install and run this system effectively.

4.2 PROGRAMMING LANGUAGE

In this project, dBASE III+ programming is used. The database package is an integrated software which is accessible to authorised managers and other personnel for administrative purposes and used in making decision and controlling business operation. dBASE package is so powerful and flexible that it is being used in financial, business/accounting personnel application by management etc. Database package also deals with a query language which facilitates the use of English like vocabulary.

dBASE III+ can be used in a very simple manner, using a menu facility called the Assistant. dBASE III+ also use dBASE command (called dot commands) directly without using the menu facilities provided by the Assistant. dBASE III+ offers a large number of commands for you to create and manage your database files.

4.3 FEATURES OF PROGRAMMING LANGUAGE

dBASE III+ offers a programming language that enables you to construct your own database applications. A large number of built in functions facilities makes it advantageous over other program software packages like COBOL, GWBASIC ETC.

i) A definitive help screen with English commands

ii) Can be made up of many database files, of which as many as 10 can be active at any time. A database file can have up to one billion records or two billion characters.

iii. dBASE package is a relational database management system with record up to 128 fields and can contain up to 4,OOO characters of information.

iv. The ultra fast and multi sort facilities is really an enhancement over other program.

v. dBASE package can be used either for basic filing or to construct quite complex applications. Its versatility is perhaps one reason why it is so popular.

dBASE III+ requires a minimum of 25KB of memory and two disc drives. However, it should be used on computers with more than 256 bytes of memory, and a hard disk is recommended.

4.4 HARDWARE AND SOFTWARE REQUIREMENTS

4.4.1 HARDWARE REQUIREMENT

- Intel Pentium 1OOMHz SVGA (1024 x 768 Pixel)
- 8mB RAM (Expandable to 64 mB)
- 1.7 GB IDE Hard Disk
- 2 serial, I parallel ports

- 4 free expandable slots
- 3.5 floppy Disk drive
- 8 x CD - Rom Drive with multi media facilities.
- 101 enhanced keyboard
- Output Device HP laserjet 6L
- Power supply: UPS 1.2KVA,

  Stabilizer 1.2 KVA.

4.4.2 SOFTWARE REQUIREMENT

System Software - MS-DOS 6.22

Application software - dBASE III+.

4.5 COST AND BENEFIT ANALYSIS

The cost of the proposed system is discussed under two categories namely; Development cost and operating cost.

1. <u>OPERATING COST</u>

   i. Program maintenance

      1 programmer at N4,500.00 per month

   ii. For 1 year ... N54,000.00

   iii Installation of Air conditioner N25,000.00

   iv. Utilities (Light) ... N11,000.00

   v. Supplies of computer papers and

      other consumables ... N22,000.00

vi. Labour cost -2 operators at

N1,5OO.OO per month per operator N36,000.00

vii. Miscellaneous expenses N20,000.00

TOTAL OPERATING COST N168,000.00

2. DEVELOPMENT COST

i. COMPUTER HARDWARE:

1 IBM Computer, 1 UPS and 1 Printer = N215,000.00

ii. Installation cost = N25,000.00

iii Personnel Training - 2 operators at N1,500.00 per month

for 6 months = N18,000.00

TOTAL DEVELOPMENT COST N258,000.00

TOTAL COST:- ... N426,000.00

4.6 GENERAL PROGRAMS DESCRIPTION AND MAIN PROCESS

The entire program is menu driven, at the running of the program a menu is displayed on the screen consisting of six options as below:

(0) Exit to Dos

(1) Add New Record

(2) Edit Old Record

(3) View Old Record

(4) Delete Old Records

(5) Report Generator

The above listed options are therefore sub-programs to the menu program which are executed when the desire option is chosen from the menu.

4.7 HOW TO RUN THE PROGRAM

a) At the DOS (Disk Operating System) prompt, change directory to DBASE directory

b) Type DBASE and press the ENTER key, wait for some few seconds, dBASE III+ will be loaded and present you with the dot prompt.

Insert your program disk in either drive A: or B: and change default to the drive where your programs reside by typing the following command at the dot prompt.

SET DEFAULT TO A: OR B:

c) At the dot prompt, type DO MENU and press the ENTER key dBASE III plus will execute the program file called MENU.PRG. During the execution, the program will clear the screen, and present the user with the main menu consisting of the listed options as presented in Appendix 1.

EXIT TO DOS

By choosing this option from the menu the program will quit and passes return to DOS prompt. All variable names used in the program will be released. The SET ON and SET TO commands used in the program will be reset back to their defaults.

ADD NEW RECORD

Choosing this option, the program will execute another procedure called ADD.PRG. This procedure will enable the user to add new records to the database. The data entries form will be presented to the user to enable him/her input some records. The entered records does not go to the database file directly in order to maintain database integrity. At the end of entering a record the program will pause and present the user with the message - 'Press "S" to SAVE or "A" To Abandon:' this will enable him/her to validate the entered record. If the user chooses "A" denoting that the entered record should not be transfered to the database file. On the other hand, if the user chooses "S" meaning that the entered record is correct, the program will then write the record from the variable field names to their corresponding fields in the database file.

EDIT OLD RECORD

This option will enable the user effect changes to the existing records in the database file. The program will display a text 'Enter EMPLOYEE STAFF NO:' and pause for the user to input Employee Staff Number, the program will then search the database file for a match with the Employee Staff Number entered. If a match is found the corresponding record to that staff number will be displayed on the screen and the cursor will be in the first field of the form to enable the user effect the desired changes. Also a text will be display asking the user if he/she wants to modify more records or not.

VIEW OLD RECORD

This option will enable the user have a glance of the existing records in the database file. The program will display a text 'Enter EMPLOYEE STAFF NO:' and pause for the user to input Employee Staff Number, the program will then search the database file for a match with

the Employee Staff Number entered. If a match is found the corresponding record to that staff number will be displayed on the screen and the cursor will be in the first field of the form to enable the user effect the desired changes.

DELETE OLD RECORD

The program to delete a record looks familiar with that of modify. At the beginning of the running of the program a text is displayed on the screen to enable the user enter the staff number to be deleted. The program search the database file for the corresponding staff number. If a match is found the record will be displayed on the screen to enable the user view the record he wanted to delete, at the same time the text "DELETE THIS RECORD (Y/N)? will be displayed at the bottom of the record. If the user chooses "N" denoting that he dose not want the record to be deleted the program will write the record back to the database file. On the other hand,if the user chooses "Y" meaning that he wants the record to be deleted, the program will permanently remove the record from the database file.

REPORT GENERATOR

The Report Generator is designed to print the content of the database file at any point. This enables us to generate the hard copy of the desired report for purpose of referencing.

4.8 SYSTEM CHANGEOVER

Changeover is the movement from the old to the new system. In this study the direct changeover system should be used. This method is the complete replacement of the old system by the new, in one move. The direct method but is potentially the least expensive because only the new is being used, unlike the parallel running where old and new system is kept alive.

Direct changeover makes operations move faster in that the movement is direct from manual to computer is done immediately the new system has been proved to the satisfaction of the system analyst and other implementation activities have been completed.

It is a bold move which should be undertaken only when everyone concerned is assured that the system is working correctly. System test and training should be comprehensive, and the changeover itself planned in detailed.

For proper effectiveness and efficiency of the organisation, for security reasons, the old system may be held in abeyance including people and equipment. In the event of a major failure of the new system the organisation would revert to the old system.

4.9 SYSTEM CONVERSION

The existing personnel would be given an in house training to enable them to have basic knowledge on how to operate computer and its peripheral devices. Emphasis would be given to data entry and other relevant staff of computer operations.

It is envisaged that the system conversion will not be done wholly, but will be done in phases so that the new system and the old system will be running side-by-side pending when the majority of personnel that will handle the new system would have been trained sufficiently enough to handle the new system.

The above planning method of system conversion allows the system to settle down and solve any bugs which may be uncovered by live running. However, it is also hoped that as each element of system goes live the old system would be dropped as soon as practicable.

4.10 INSTALLATION

It is anticipated that a well befitting environment will be made available to accommodate the Hardware, software and human ware. Before this system can be used, the database III package has to be installed in the computer. Installation procedure depends on the hard disk drive. One can load it by typing DBASE at the DOS prompt.

4.11 IMPLEMENTATION REVIEW

This is intended to check accuracy and timeless of the new system with a view to identifying any unusual situation. This will be achieved through the following approaches:

a) EVENT LOGGING:- This entails user recording unusual event that effects the new system.

b) IMPACT EVALUATION:- This determines the effect of the new system on the organisation under review.

c) ATTITUDE SURVEY:- This entails sampling the views of current users toward the new system. The views could be positive or otherwise.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY

This study has shown that the computerisation of management information system of Personnel Department of Nitel PLC, Minna, Niger States is very important, in that it will lead to improvement, efficiency, and enhance effectiveness.

It will also provide for flexibility storage and retrieval of data. It will also help in making an easier accurate and reliable logical comparison between things.

The study has also provided training need for staff to be able to handle the new system effectively. And finally the computerisation will also spread to other parts of the department in Nitel PLC Minna apart from the personnel department.

Thus this will enhance the entire organisational performance. It also shows the method of conversion to be adopted.

And finally, it shows whether this project is feasible by using tools required for testing the feasibility of any project before it can be embarked upon.

5.2 CONCLUSION

There is no doubt that proper implementation of the new system will enhance the efficient performance of personnel division of Nitel PLC, Minna. From the conservative financial analysis done it was observed that the overall benefits of installing a new system as earlier mentioned is quite encourging despite all odds. We are convinced that once the new system

is installed, the menace of ghost workers as well as problems of high monthly wage bill which has generated a lot of concern will become a thing of the past.

Besides, the new system will bring modernisation to the organisation as a whole, as well as better management information system, and a well managed department for effective, and efficiency of overall performance of the entire organisation.

5.3 RECOMMENDATIONS

1) The personnel department should provide an in-house training to their staff to enable them have basic knowledge on how to operate the computer.

2) Computer should be introduced to other departments gradually to reduce the method which still account for the bulk of clerical work in the organisation.

3) Indeed, Nitel PLC has to review its administrative structure with a view to enhancing operational efficiency and the workability of the computerised system.

4) This package is strongly recommended for other organisations/Institutions that are yet to computerise their Management Information System.

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NITEL PLC, MINNA

PERSONNEL INFORMATION SYSTEM - MAIN MENU

TASK CODE	TASK
(0)	EXIT TO DOS
(1)	ADD NEW RECORD
(2)	EDIT OLD RECORD
(3)	VIEW OLD RECORD
(4)	DELETE OLD RECORD
(5)	REPORT GENERATOR

Press a TASK CODE:

APPENDIX II

MENU.PRG

```
set talk off
set status off
set date british
set scoreboard off
do while .t.
  clea
  @0,15 to 24,64 double
  @1,30 to 3,49 double
  @4,18 to 6,61 double
  @22,16 to 22,63 double
  @2,32 say "NITEL PLC, MINNA"
  @5,20 say "PERSONNEL INFORMATION SYSTEM - MAIN MENU"
  @8,20 say 'TASK CODE' + space(15) + 'TASK'
  @9,20 to 9,28 double
  @9,44 to 9,47 double
  @10,22 say '(0)' + space(17) + 'EXIT TO DOS'
  @12,22 say '(1)' + space(17) + 'ADD NEW RECORD'
  @14,22 say '(2)' + space(17) + 'EDIT OLD RECORD'
  @16,22 say '(3)' + space(17) + 'VIEW OLD RECORD'
  @18,22 say '(4)' + space(17) + 'DELETE OLD RECORD'
  @20,22 say '(5)' + space(17) + 'REPORT GENERATOR'
  @23,30 say 'Press a TASK CODE:'
  do while .t.
    code = ' '
    @23,49 get code pict '!'
    read
    if code='0' .or. code='1' .or. code='2' .or. code='3' .or. code='4' .or. code='5'
      exit
    endif
  enddo
  do case
  case code='0'
    exit
  case code ='1'
    do add
  case code ='2'
    do edit
  case code='3'
    do view
```

```
  case code='4'
    do delete
  otherwise
    do rgen
  endcase
enddo
clear
return
```

ADD.PRG

```
use main
do while .t.
  clea
  @ 0,0 to 24,79
  @ 22,1 to 22,78
  @ 1,32 say 'NITEL PLC, MINNA'
  @ 2,32 to 2,47 doub
  @ 3,26 say 'PERSONNEL INFORMATION SYSTEM'
  @ 4,26 to 4,53 doub
  @ 5,29 say 'OPERATION: ADD RECORD'
  @ 6,29 to 6,49 doub
  go top
  vfn=spac(6)
  @ 8,3 say "Enter EMPLOYEE'S FILE NUMBER (or XXXXXX to EXIT):" get vfn pict '@!'
  read
  if vfn='XXXXX'
    exit
  endi
  loca for vfn=fn
  if found()
    @ 23,14 say 'FILE NUMBER ALREADY EXIST, Press any key to continue'
    set cons off
    wait
    set cons on
    loop
  endi
  stor spac(15) to vsname,vfname,voname,vnation,vlga,vpob,vtown
  stor spac(40) to vhaddr,vpaddr,vraddr
  stor spac(12) to vstate,vtoa
  stor ctod('  /  /  ') to vdob,vdofa
  stor spac(2) to vrcode,vgl
  stor spac(1) to vsex,vdcode
```

```
vqual=spac(25)
vpwe=spac(20)
vrel=spac(10)
vmstat=spac(8)
@ 11,6 say 'SURNAME'
@ 11,32 say 'FIRST NAME'
@ 11,59 say 'OTHER NAMES'
@ 10,3 get vsname pict '@!'
@ 10,30 get vfname pict '@!'
@ 10,57 get voname pict '@!'
@ 14,3 say 'DATE OF BIRTH'
@ 14,21 say 'PLACE OF BIRTH'
@ 14,39 say 'SEX'
@ 14,46 say 'MARITAL STATUS'
@ 14,65 say 'RELIGION'
@ 13,4 get vdob
@ 13,20 get vpob pict '@!'
@ 13,40 get vsex pict '!'
@ 13,49 get vmstat pict '@!'
@ 13,64 get vrel pict '@!'
@ 17,5 say 'NATIONALITY'
@ 17,22 say 'STATE OF ORIGIN'
@ 17,41 say 'LOCAL GOVT AREA'
@ 17,64 say 'TOWN'
@ 16,3 get vnation pict '@!'
@ 16,23 get vstate pict '@!'
@ 16,41 get vlga pict '@!'
@ 16,60 get vtown pict '@!'
@ 19,3 say "PERMANET HOME ADDRESS:" get vhaddr pict '@!'
@ 21,3 say "POSTAL ADDRESS:" get vpaddr pict '@!'
read
@ 23,27 say "press any key to continue"
set cons off
wait
set cons on
@ 23,25 say space (30)
@ 8,3 clear to 21,77
@ 8,3 say "EMPLOYEE'S FILE NUMBER:" get vfn
@ 11,6 say 'SURNAME'
@ 11,32 say 'FIRST NAME'
@ 11,59 say 'OTHER NAMES'
@ 10,3 get vsname
@ 10,30 get vfname
@ 10,57 get voname
```

```
 @ 12,1 to 12,78
 clear gets
 @ 13,3 say 'RESIDENTIAL ADDRESS:' get vraddr pict '@!'
 @ 15,3 say "DETAILS OF QUALIFICATION:" get vqual pict '@!'
 @ 17,3 say "DEPARTMENTAL CODE:" get vdcode
 @ 17,32 say "RANK CODE:" get vrcode
 @ 17,55 say "GRADE LEVEL:" get vgl
 @ 19,3 say "DATE OF FIRST APPOINTMENT:" get vdofa
 @ 19,45 say "TYPE OF APPOINTMENT :" get vtoa pict  '@!'
 @ 21,3 say "PREVIOUS WORKING EXPERIENCE:" get vpwe pict '@!'
 read
 @ 23,21 say 'Press "S" to SAVE or "A" to ABANDON:'
 do while .t.
 response =' '
 @ 23,58 get  response pict '!'
 read
 if response ='S' .or. response = 'A'
 exit
 endif
enddo
if response = 'S'
 append blank
 repl fn with vfn, sname with vsname
 repl fname with vfname, oname with voname
 repl dob with vdob, pob with vpob
 repl sex with vsex, mstat with vmstat
 repl rel with vrel, nation with vnation
 repl state with vstate, lga with vlga
 repl town with vtown, haddr with vhaddr
 repl paddr with vpaddr,raddr with vraddr
 repl dcode with vdcode, rcode with vrcode
 repl gl with vgl, dofa with vdofa, toa with vtoa
 repl pwe with vpwe, qual with vqual
endif
enddo
clear
close all
return
```

EDIT.PRG

```
use main
do while .t.
```

```
clea
@ 0,0 to 24,79
@ 22,1 to 22,78
@ 1,32 say 'NITEL PLC, MINNA'
@ 2,32 to 2,47 doub
@ 3,26 say 'PERSONNEL INFORMATION SYSTEM'
@ 4,26 to 4,53 doub
@ 5,29 say 'OPERATION: EDIT RECORD'
@ 6,29 to 6,50 doub
go top
vfn=spac(6)
@ 8,3 say "Enter EMPLOYEE'S FILE NUMBER (or XXXXXX to EXIT):" get vfn pict '@!'
read
if vfn='XXXXX'
  exit
endi
loca for vfn=fn
if .not. found()
  @ 23,13 say 'FILE NUMBER DOES NOT EXIST, Press any key to continue'
  set cons off
  wait
  set cons on
  loop
endi
vsname=sname
vfname=fname
voname=oname
vnation=nation
vlga=lga
vpob=pob
vtown=town
vhaddr=haddr
vpaddr=paddr
vraddr=raddr
vstate=state
vtoa=toa
vdob=dob
vdofa=dofa
vrcode=rcode
vgl=gl
vsex=sex
vdcode=dcode
vqual=qual
vpwe=pwe
```

```
vrel=rel
vmstat=mstat
@ 11,6 say 'SURNAME'
@ 11,32 say 'FIRST NAME'
@ 11,59 say 'OTHER NAMES'
@ 10,3 get vsname pict '@!'
@ 10,30 get vfname pict '@!'
@ 10,57 get voname pict '@!'
@ 14,3 say 'DATE OF BIRTH'
@ 14,21 say 'PLACE OF BIRTH'
@ 14,39 say 'SEX'
@ 14,46 say 'MARITAL STATUS'
@ 14,65 say 'RELIGION'
@ 13,4 get vdob
@ 13,20 get vpob pict '@!'
@ 13,40 get vsex pict '!'
@ 13,49 get vmstat pict '@!'
@ 13,64 get vrel pict '@!'
@ 17,5 say 'NATIONALITY'
@ 17,22 say 'STATE OF ORIGIN'
@ 17,41 say 'LOCAL GOVT AREA'
@ 17,64 say 'TOWN'
@ 16,3 get vnation pict '@!'
@ 16,23 get vstate pict '@!'
@ 16,41 get vlga pict '@!'
@ 16,60 get vtown pict '@!'
@ 19,3 say "PERMANET HOME ADDRESS:" get vhaddr pict '@!'
@ 21,3 say "POSTAL ADDRESS:" get vpaddr pict '@!'
read
@ 23,27 say "press any key to continue"
set cons off
wait
set cons on
@ 23,25 say space (30)
@ 8,3 clear to 21,77
@ 8,3 say "EMPLOYEE'S FILE NUMBER:" get vfn
@ 11,6 say 'SURNAME'
@ 11,32 say 'FIRST NAME'
@ 11,59 say 'OTHER NAMES'
@ 10,3 get vsname
@ 10,30 get vfname
@ 10,57 get voname
@ 12,1 to 12,78
clear gets
```

```
 @ 13,3 say 'RESIDENTIAL ADDRESS:' get vraddr pict '@!'
 @ 15,3 say "DETAILS OF QUALIFICATION:" get vqual pict '@!'
 @ 17,3 say "DEPARTMENTAL CODE:" get vdcode
 @ 17,32 say "RANK CODE:" get vrcode
 @ 17,55 say "GRADE LEVEL:" get vgl
 @ 19,3 say "DATE OF FIRST APPOINTMENT:" get vdofa
 @ 19,45 say "TYPE OF APPOINTMENT :" get vtoa pict  '@!'
 @ 21,3 say "PREVIOUS WORKING EXPERIENCE:" get vpwe pict '@!'
 read
 @ 23,21 say 'Press "S" to SAVE or "A" to ABANDON:'
 do while .t.
 response =' '
 @ 23,58 get  response pict '!'
 read
 if response ='S' .or. response = 'A'
 exit
 endif
enddo
if response = 'S'
 repl fn with vfn, sname with vsname
 repl fname with vfname, oname with voname
 repl dob with vdob, pob with vpob
 repl sex with vsex, mstat with vmstat
 repl rel with vrel, nation with vnation
 repl state with vstate, lga with vlga
 repl town with vtown, haddr with vhaddr
 repl dcode with vdcode, rcode with vrcode
 repl gl with vgl, dofa with vdofa, toa with vtoa
 repl pwe with vpwe, qual with vqual
endif
enddo
clear
close all
return
```

VIEW.PRG

```
use main
do while .t.
  clea
  @ 0,0 to 24,79
  @ 22,1 to 22,78
  @ 1,32 say 'NITEL PLC, MINNA'
```

```
@ 2,32 to 2,47 doub
@ 3,26 say 'PERSONNEL INFORMATION SYSTEM'
@ 4,26 to 4,53 doub
@ 5,29 say 'OPERATION: VIEW RECORD'
@ 6,29 to 6,50 doub
go top
vfn=spac(6)
@ 8,3 say "Enter EMPLOYEE'S FILE NUMBER (or XXXXXX to EXIT):" get vfn pict '@!'
read
if vfn='XXXXX'
  exit
endi
loca for vfn=fn
if .not. found()
  @ 23,13 say 'FILE NUMBER DOES NOT EXIST, Press any key to continue'
  set cons off
  wait
  set cons on
  loop
endi
vsname=sname
vfname=fname
voname=oname
vnation=nation
vlga=lga
vpob=pob
vtown=town
vhaddr=haddr
vpaddr=paddr
vraddr=raddr
vstate=state
vtoa=toa
vdob=dob
vdofa=dofa
vrcode=rcode
vgl=gl
vsex=sex
vdcode=dcode
vqual=qual
vpwe=pwe
vrel=rel
vmstat=mstat
@ 11,6 say 'SURNAME'
@ 11,32 say 'FIRST NAME'
```

```
@ 11,59 say 'OTHER NAMES'
@ 10,3 get vsname pict '@!'
@ 10,30 get vfname pict '@!'
@ 10,57 get voname pict '@!'
@ 14,3 say 'DATE OF BIRTH'
@ 14,21 say 'PLACE OF BIRTH'
@ 14,39 say 'SEX'
@ 14,46 say 'MARITAL STATUS'
@ 14,65 say 'RELIGION'
@ 13,4 get vdob
@ 13,20 get vpob pict '@!'
@ 13,40 get vsex pict '!'
@ 13,49 get vmstat pict '@!'
@ 13,64 get vrel pict '@!'
@ 17,5 say 'NATIONALITY'
@ 17,22 say 'STATE OF ORIGIN'
@ 17,41 say 'LOCAL GOVT AREA'
@ 17,64 say 'TOWN'
@ 16,3 get vnation pict '@!'
@ 16,23 get vstate pict '@!'
@ 16,41 get vlga pict '@!'
@ 16,60 get vtown pict '@!'
@ 19,3 say "PERMANET HOME ADDRESS:" get vhaddr pict '@!'
@ 21,3 say "POSTAL ADDRESS:" get vpaddr pict '@!'
clea gets
@ 23,27 say "press any key to continue"
set cons off
wait
set cons on
@ 23,25 say space (30)
@ 8,3 clear to 21,77
@ 8,3 say "EMPLOYEE'S FILE NUMBER:" get vfn
@ 11,6 say 'SURNAME'
@ 11,32 say 'FIRST NAME'
@ 11,59 say 'OTHER NAMES'
@ 10,3 get vsname
@ 10,30 get vfname
@ 10,57 get voname
@ 12,1 to 12,78
@ 13,3 say 'RESIDENTIAL ADDRESS:' get vraddr pict '@!'
@ 15,3 say "DETAILS OF QUALIFICATION:" get vqual pict '@!'
@ 17,3 say "DEPARTMENTAL CODE:" get vdcode
@ 17,32 say "RANK CODE:" get vrcode
@ 17,55 say "GRADE LEVEL:" get vgl
```

```
 @ 19,3 say "DATE OF FIRST APPOINTMENT:" get vdofa
 @ 19,45 say "TYPE OF APPOINTMENT :" get vtoa pict  '@!'
 @ 21,3 say "PREVIOUS WORKING EXPERIENCE:" get vpwe pict '@!'
 clea gets
 @ 23,27 say 'Press any key to continue'
 set cons off
 wait
 set cons on
enddo
clear
close all
return
```

DELETE.PRG

```
use main
do while .t.
  clea
  @ 0,0 to 24,79
  @ 22,1 to 22,78
  @ 1,32 say 'NITEL PLC, MINNA'
  @ 2,32 to 2,47 doub
  @ 3,26 say 'PERSONNEL INFORMATION SYSTEM'
  @ 4,26 to 4,53 doub
  @ 5,29 say 'OPERATION: EDIT RECORD'
  @ 6,29 to 6,50 doub
  go top
  vfn=spac(6)
  @ 8,3 say "Enter EMPLOYEE'S FILE NUMBER (or XXXXXX to EXIT):" get vfn pict '@!'
  read
  if vfn='XXXXX'
    exit
  endi
  loca for vfn=fn
  if .not. found()
    @ 23,13 say 'FILE NUMBER DOES NOT EXIST, Press any key to continue'
    set cons off
    wait
    set cons on
    loop
  endi
  vsname=sname
  vfname=fname
```

```
voname=oname
vnation=nation
vlga=lga
vpob=pob
vtown=town
vhaddr=haddr
vpaddr=paddr
vraddr=raddr
vstate=state
vtoa=toa
vdob=dob
vdofa=dofa
vrcode=rcode
vgl=gl
vsex=sex
vdcode=dcode
vqual=qual
vpwe=pwe
vrel=rel
vmstat=mstat
@ 11,6 say 'SURNAME'
@ 11,32 say 'FIRST NAME'
@ 11,59 say 'OTHER NAMES'
@ 10,3 get vsname pict '@!'
@ 10,30 get vfname pict '@!'
@ 10,57 get voname pict '@!'
@ 14,3 say 'DATE OF BIRTH'
@ 14,21 say 'PLACE OF BIRTH'
@ 14,39 say 'SEX'
@ 14,46 say 'MARITAL STATUS'
@ 14,65 say 'RELIGION'
@ 13,4 get vdob
@ 13,20 get vpob pict '@!'
@ 13,40 get vsex pict '!'
@ 13,49 get vmstat pict '@!'
@ 13,64 get vrel pict '@!'
@ 17,5 say 'NATIONALITY'
@ 17,22 say 'STATE OF ORIGIN'
@ 17,41 say 'LOCAL GOVT AREA'
@ 17,64 say 'TOWN'
@ 16,3 get vnation pict '@!'
@ 16,23 get vstate pict '@!'
@ 16,41 get vlga pict '@!'
@ 16,60 get vtown pict '@!'
```

```
 @ 19,3 say "PERMANET HOME ADDRESS:" get vhaddr pict '@!'
 @ 21,3 say "POSTAL ADDRESS:" get vpaddr pict '@!'
 clea gets
 @ 23,20 say 'Press "D" to DELETE or "A" to ABANDON:'
 do while .t.
 response =' '
 @ 23,59 get  response pict '!'
 read
 if response ='D' .or. response = 'A'
 exit
 endif
enddo
if response = 'D'
 delete
 pack
endif
enddo
clear
close all
return
```

RGEN.PRG

```
clea
@ 12,26 say "TO SCREEN OR PRINTER (S/P):"
do while .t.
  d=' '
  @ 12,54 get d pict '!'
  read
  if d='P' .or. d='S'
    exit
  endif
enddo
use main
sort on dcode to print.dbf
use
select 1
  use print
select 2
  use dept
select 3
  use rank
clear
```

```
if d ='P'
  @ 12,30 say 'PRINTING IN PROGRESS ...'
  set device to print
endif
@ 0,32 say "NITEL PLC, MINNA"
@ 1,32 say repl('=',16)
@ 2,28 say "STAFF LIST BY DEPARTMENT"
@ 3,28 say repl('=',24)
sele 1
vdcode = dcode
sele 2
locate for vdcode = dcode
vdname = dname
@ 4,0 say "DEPARTMENT: " + vdname
@ 5,0 say repl('-',80)
@ 6,1 say 'S/NO ¦ FILE NUMBER ¦'
@ 6,25 say 'NAME'
@ 6,43 say '¦'
@ 6,47 say 'RANK'
@ 6,66 say '¦  GRADE LEVEL'
@ 7,0 say repl('-',6)+'¦'+repl('-',13)+'¦'
@ 7,21 say repl('-',22)+'¦'+repl('-',22)+'¦'+repl('-',13)
row = 7
sno = 0
select 1
do while .not. eof()
  row = row + 1
  sno = sno + 1
  vfn = fn
  vsname = sname
  vfname = fname
  voname = oname
  vrcode = rcode
  vdcode = dcode
  vgl = gl
  vname = rtrim(vsname) +', '+ left(vfname,1) +'. '
  if voname< > space(15)
    vname = vname + left(voname,1) +'.'
  endif
  select 3
  go top
  locate for vrcode = rcode
  vrname = rname
  @ row,1 say sno pict '9999'
```

```
@ row,6 say '|'
@ row,10 say vfn
@ row,20 say '|'
@ row,22 say vname
@ row,43 say '|'
@ row,45 say vrname
@ row,66 say '|'
@ row,72 say vgl
select 1
skip
if eof()
  exit
endif
if row>20 .and. d='S'
  wait
  if vdcode< >dcode
    vdcode = dcode
    sele 2
    go top
    locate for vdcode = dcode
    vdname = dname
    sele 1
  endi
  row=0
  clea
  @ 0,23 say 'STAFF LIST BY DEPARTMENT Continued'
  @ 1,23 say repl('-',34)
  @ 2,0 say "DEPARTMENT: " + vdname
  @ 3,0 say repl('-',80)
  @ 4,1 say 'S/NO | FILE NUMBER |'
  @ 4,25 say 'NAME'
  @ 4,43 say '|'
  @ 4,47 say 'RANK'
  @ 4,66 say '| GRADE LEVEL'
  @ 5,0 say repl('-',6)+'|'+repl('-',13)+'|'
  @ 5,21 say repl('-',22)+'|'+repl('-',22)+'|'+repl('-',13)
  row = 5
  loop
endif
if vdcode< >dcode
  vdcode = dcode
  sele 2
  go top
  locate for vdcode = dcode
```

```
    vdname = dname
    row=row+3
    @ row,0 say "DEPARTMENT: " + vdname
    row=row+1
    @ row,0 say repl('-',80)
    row=row+1
    @ row,1 say 'S/NO | FILE NUMBER |'
    @ row,25 say 'NAME'
    @ row,43 say '|'
    @ row,47 say 'RANK'
    @ row,66 say '|  GRADE LEVEL'
    row=row+1
    @ row,0 say repl('-',6)+'|'+repl('-',13)+'|'
    @ row,21 say repl('-',22)+'|'+repl('-',22)+'|'+repl('-',13)
    sno = 0
    select 1
  endif
enddo
if d='P'
  set device to screen
  @ 14,30 say 'PRINTING IS COMPLETED'
endif
?
wait
clear
close all
return
```

NITEL PLC, MINNA

PERSONNEL INFORMATION SYSTEM

OPERATION: EDIT RECORD

Enter EMPLOYEE'S FILE NUMBER (or XXXXXX to EXIT): 6549

OKPALAOKA	IJEOMA	CHIJIOKE
SURNAME	FIRST NAME	OTHER NAMES

22/11/71	UGA	F	SINGLE	CHRISTIAN
DATE OF BIRTH	PLACE OF BIRTH	SEX	MARITAL STATUS	RELIGION

NIGERIA	ANAMBRA	AGUATA	UGA
NATIONALITY	STATE OF ORIGIN	LOCAL GOVT AREA	TOWN

PERMANET HOME ADDRESS: OKPALAOKA COMPOUND, UMUEZE UGA

POSTAL ADDRESS: P.O. BOX 49, UGA

Press "D" to DELETE or "A" to ABANDON:

NITEL PLC, MINNA

PERSONNEL INFORMATION SYSTEM

OPERATION: EDIT RECORD

Enter EMPLOYEE'S FILE NUMBER (or XXXXXX to EXIT): 6549

]KPALAOKA	IJEOMA	CHIJIOKE
SURNAME	FIRST NAME	OTHER NAMES

22/11/71	UGA	F	SINGLE	CHRISTIAN
DATE OF BIRTH	PLACE OF BIRTH	SEX	MARITAL STATUS	RELIGION

NIGERIA	ANAMBRA	AGUATA	UGA
NATIONALITY	STATE OF ORIGIN	LOCAL GOVT AREA	TOWN

PERMANET HOME ADDRESS: OKPALAOKA COMPOUND, UMUEZE UGA

POSTAL ADDRESS: P.O. BOX 49, UGA

press any key to continue

NITEL PLC, MINNA

PERSONNEL INFORMATION SYSTEM

OPERATION: EDIT RECORD

EMPLOYEE'S FILE NUMBER: 6549

]KPALAOKA	IJEOMA	CHIJIOKE
SURNAME	FIRST NAME	OTHER NAMES

RESIDENTIAL ADDRESS: NO C5, STF QTR, DELSU ABRAKA

DETAILS OF QUALIFICATION: B.SC.

DEPARTMENTAL CODE: 1 RANK CODE: 02 GRADE LEVEL: 10

DATE OF FIRST APPOINTMENT: 12/12/96 TYPE OF APPOINTMENT : TENURE

PREVIOUS WORKING EXPERIENCE:

Press "S" to SAVE or "A" to ABANDON:

NITEL PLC, MINNA

PERSONNEL INFORMATION SYSTEM

OPERATION: ADD RECORD

Enter EMPLOYEE'S FILE NUMBER (or XXXXXX to EXIT): 6549

OKPALAOKA	IJEOMA	CHIJIOKE
SURNAME	FIRST NAME	OTHER NAMES

22/11/71	UGA	F	SINGLE	CHRISTIAN
DATE OF BIRTH	PLACE OF BIRTH	SEX	MARITAL STATUS	RELIGION

NIGERIA	ANAMBRA	AGUATA	UGA
NATIONALITY	STATE OF ORIGIN	LOCAL GOVT AREA	TOWN

PERMANET HOME ADDRESS: OKPALAOKA COMPOUND, UMUEZE UGA

POSTAL ADDRESS: P.O. BOX 49, UGA

press any key to continue

NITEL PLC, MINNA

PERSONNEL INFORMATION SYSTEM

OPERATION: ADD RECORD

EMPLOYEE'S FILE NUMBER: 6549

OKPALAOKA	IJEOMA	CHIJIOKE
SURNAME	FIRST NAME	OTHER NAMES

RESIDENTIAL ADDRESS: NO C5, STF QTR, DELSU ABRAKA

DETAILS OF QUALIFICATION: B.SC.

DEPARTMENTAL CODE: 1 RANK CODE: 02 GRADE LEVEL: 10

DATE OF FIRST APPOINTMENT: 12/12/96 TYPE OF APPOINTMENT : TENURE

PREVIOUS WORKING EXPERIENCE:

Press "S" to SAVE or "A" to ABANDON:

NITEL PLC, MINNA

PERSONNEL INFORMATION SYSTEM

OPERATION: VIEW RECORD

Enter EMPLOYEE'S FILE NUMBER (or XXXXXX to EXIT): 6549

OKPALAOKA	IJEOMA	CHIJIOKE
SURNAME	FIRST NAME	OTHER NAMES

22/11/71	UGA	F	SINGLE	CHRISTIAN
DATE OF BIRTH	PLACE OF BIRTH	SEX	MARITAL STATUS	RELIGION

NIGERIA	ANAMBRA	AGUATA	UGA
NATIONALITY	STATE OF ORIGIN	LOCAL GOVT AREA	TOWN

PERMANET HOME ADDRESS: OKPALAOKA COMPOUND, UMUEZE UGA

POSTAL ADDRESS: P.O. BOX 49, UGA

press any key to continue

NITEL PLC, MINNA

PERSONNEL INFORMATION SYSTEM

OPERATION: VIEW RECORD

EMPLOYEE'S FILE NUMBER: 6549

OKPALAOKA	IJEOMA	CHIJIOKE
SURNAME	FIRST NAME	OTHER NAMES

RESIDENTIAL ADDRESS: NO C5, STF QTR, DELSU ABRAKA

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PREVIOUS WORKING EXPERIENCE:

Press any key to continue