

THE ROLE OF A COMPUTERIZED MANAGEMENT INFORMATION SYSTEM IN MANAGEMENT DECISION MAKING:

A CASE STUDY OF NITEL PLC, KADUNA

By
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MBA/G93BAP7570

A project submitted to the Department of Business Administration, Ahmadu Bello University, Zaria, in partial fulfilment of the requirements for the award of a Masters Degree in Business Administration (MBA).

September, 2000

DECLARATION

I hereby declare that this project was written by me under the supervision of Mallam Dalhatu Bashir and is a record of my own research. It has not been presented before any previous application for a Masters in Business Administration degree.

References made to published literature have been duly acknowledged.

Zfzm AMINA Z. MAJMALARI July 2000
Name and Signature of Student Date

The above declaration is
confirmed by:

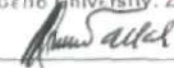
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CERTIFICATION

This research project entitled, "The Role of a Computerised Management Information System in Management Decision-Making": A case study of NITEL Plc, Kaduna; submitted by Amina Z. Maimalari, meets the regulations governing the award of Masters in Business Administration (MBA) degree of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literacy presentation in the field of management.

Mr. DALTON BASUN  4/7/2000
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Sign Date

The Dean of Post-Graduate School  13/08/02
Sign Date

DEDICATION

I dedicate this project to all members of my family, especially my mother, Maryam Zakariya Maimalari.

ACKNOWLEDGEMENT

My gratitude first goes to “The Al-Mighty Allah”, whose infinite Grace and Mercy saw me through, from the beginning to end of this work.

I wish to express my appreciation to Mallam Dalhatu Bashir, my supervisor for his guidance which made this work a reality. I also thank him for his patience and understanding.

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ABSTRACT

The role of a computerised Management Information System (MIS) in Management Decision Making was defined by investigating the functions and services which the MIS department of Nitel - Kaduna provides for managers of the organisation to enable them make functional decisions.

The MIS department deals with the Billings aspects of the Accounts department of Nitel Plc, covering the North-West Zone of the organisation. The zone comprises seven territories with headquarters in Kaduna, handling over 90,000 subscribers bills and generating bill-related reports for management use. The department uses a VAX 4000 computer system (DEC-Model), consisting of 64megabyte memory and 7.0 Gigabytes harddrive with open VMS AXPV6.1 operating system. The computer uses VAX COBOL and VAX BASIC programming languages to generate fifteen different types of reports.

The reports generated by the MIS department are:

- Summary Reports;
Territory Accounts Status Report, Performance Report.
- Generation of Related Reports;
International Call Report, Dial and Trunk Call Report, Dial Call charge report,
Digital raw meter report.
- Payment related Reports;
Payment report, Business office bill copy report, First time credit report, Credit balance report, Bank listing report, Payment and Adjustment listing report.
- Customer information related reports;
terminal/final debtors reports, Adhoc reports - could fall under any of the four categories depending on the contents of the report.

The system operated to generate the reports is a feedback system which uses; pay-in-slips, tapes and meter photographs, update forms and adjustment forms as source documents for capturing raw data.

Information contained in the reports generated for the Top level managers is condensed and unstructured, designed for making strategic, decisions. The middle management use reports containing summarised information obtained from day-to-day routine data collection, while information available to lower level managers is detailed and well structured for making operational decisions.

The reports generated by the MIS department are used by the managers to make decisions based on a variety of organised voluminous information, suited for peculiar needs of the users of each report.

The decisions made by managers concern; volume of credit of subscribers, level of debts of Exchange Area, performance measurement of territories, revenue generation analysis.

It is necessary for Nitel Plc, Kaduna to use a Wide Area Network (WAN) system in order for data to be processed uninterrupted on-line" and for information to be made available to managers on "real-time" for immediate responses by managers to enable immediate decision making.

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CHAPTER ONE

1.1 General Introduction:

In organizations' whether public businesses, private enterprises, governmental corporations and establishments, managerial roles for managers are expected, among other things to include making decisions as an important and crucial part of their responsibilities.

Whilst it may be affected by feelings and inter personal relationships, managerial decision-making tends to be rational in its approach.

Considerable time and effort may be spent in assessing problems developing alternative solutions and evaluating this consequences before arriving at an agreed decision. This rational approach to decision making arises from the common need basic to all managers; the desire to understand the purpose of the organization i.e. its policies, its programmes, its plans and its goals. This desire is fulfilled through a variety of activities; planning; organizing; motivating and controlling. The activities of managerial function is often interlinked together and do not exist independent of each other. The control function establishes standards of performance, measures performance against the appropriate standards and identifies corrective action where required. These series of activities require information of a varied nature, each piece suitable for an appropriate function.

Information is therefore the life hood of management function and hence becomes a highly valuable management resource. The information necessary to carry out these managerial functions is produced from a variety of sources and often in a variety of forms. Information can be of the most detailed kind, usually processed by computer or can be judgmental in nature, usually in a written reports.

However, the kind and form in which information is presented to a decision-maker, the task of planning, supervision and control cannot be performed satisfactorily, if the information is not adequate or of poor quality. Consequently, it may rightly be asked: Does the quality of the supplied information aid the manager in making efficient decisions crucial to making his or her tasks successful?:-“The efficiency of decisions is dependent on the quality of the reports Vis-a-vis its relevance to the types of decisions to be taken and the way the decisions are made in an organization.”

With increasing complexity of the dynamic nature of processing data into quality information required for decision-making, many organizations have devised a formal Management Information System (MIS) with which to cope with this problem. Thus, MIS is an organized collection of people, procedures, databases and devices which are used to provide information for decision-makers.

Generally, the focus of an MIS is operational efficiency; marketing, production, finance and other functional areas are typically supported by Management Information Systems and linked usually through common databases. Essentially, MIS contributes to setting of standards as well as to the measuring of performance against standards. MIS may also provide* much useful information about performance generally, enabling managers to be better informed about relative strengths and weakness of their operations.

As Nigeria grows socio-economically, so do the problems associated with planning, organizing, administration, monitoring and control of human and material resources. Thus the current dispensation appears challenging where the available data and information are unreliable, unmanageable and generally involving highly technical issues and rapid developmental advances. Furthermore,

the deregulation of the Nigerian economy, in as much as it is desirable, has so far heightened the degree of uncertainty. One positive effective of this scenario, however is the conscious attempt by the government to meaningfully involve the private sector in the decision-making process. Given that genuine private sector is expected to have long-range planning orientation, this development should augur well for the stability of governmental decisions and, hence a reduction in the severity of uncertainties in operating environment.

However, the level of development and political structure in place, uncertainty is a permanent feature in any advancing environment. Efforts are hence geared towards a significant reduction thereon with a view to minimising the incidence and severity of decision errors. The major tool for achieving this goal is information, the mode of management of which will determine the quality and hence degree of accuracy of decisions. This mode of managing information, is what "Management Information System", pursues.

1.2 **Statement of the Problem:**

There are complexities inherent in management of organizations, in particular, the level of uncertainty in organisations' environment and degrees of risk involved are key factors in this complexity. At the core of the complex variables existing, is the problem of paucity of information as well as poor capacity for information management.

1.3 **Aims and Objectives of the Study:**

This study aims at investigating the functions and operations of the MIS department of Nitel Plc, Kaduna and examining the output of the MIS department with the view to achieving the following objectives:

- Ascertaining the relationship between the MIS department of Nitel-Kaduna and the organizations' management function of decision-making.
- Reflecting importance of a computerised MIS as a means of aiding the managers in the execution of the task of decision-making.

1.4 **Significance of the Study:**

It is essential for managers to understand that MIS is an integral part of management process and is therefore inseparable from its environment.

This study is imperative also because, there is need for managers to appreciate the importance of appropriate, adequate and timely information for decision making. While it may be obvious in some cases to appreciate the need for quality information, it maybe lost to management in some instances that; quality decisions based on quality information is indirectly dependent upon the efficiency of the information system being used; hence the importance of this study.

Another essential aspect of this study is highlighting, the relevance of an efficient *information system, that is designed to meet the organizations managerial information requirements*; because a "good" piece of information, if irrelevant would only succeed in wasting valuable time and will expose the manager to the dangers of missing important relevant information resulting in wrong interpretation and decisions.

1.5 **Scope of the study:**

This study focuses on the functional area of Accounts. The emphasis is on the "Billings" aspect of the Account's department. The project concentrates on the information generated by a computerised MIS in the form of the different types of

reports used by the management for making important decisions in order to achieve operational efficiency.

The MIS department being investigated is limited to the subsystem – Functional Information System (FIS), which sends reports on Billings to the organizations functional areas of Finance and Accounts. This study is also limited to the North West Zone of Nitel Plc, incorporating seven territories including, Kaduna, Kebbi, Kano, Katsina, Zamfara, Jigawa and Sokoto.

1.6 **Limitations of the Study:**

This study has not been without certain limitations, some of which are peculiar to NITEL Plc, while others are the usual limitations associated with conducting researches.

The following constraints constituted limiting factors to this study:

- The confidentiality incumbent upon the personnel of Nitel Plc not to divulge information about their organisation. This is peculiar to most government establishments. At certain instances, during the course of conducting this research, there was some reluctance in submitting certain information by the persons interviewed.
- There was not much time available due to the busy schedules of the respondents to enable continuous uninterrupted detailed discussions on the subject matter.

- There was limited access to certain units of the Management Information System department and some documents. This restrictions were due to what the respondents termed “industrial secrets”, because of the competition prevailing in the telecommunication industry in the country.
- The funds available to cover expenses incurred during the course of the research was limited. This also constituted a major constraint.

CHAPTER TWO

LITERATURE REVIEW

2.1 History of Nitel:

The Nigerian Telecommunication PLC (NITEL) is a Federal Government-owned company that provides public telecommunication services in Nigeria.

Set up in 1985 as an amalgam of the Telecommunications Division of the defunct P&T Department and the Nigerian External Telecommunication Limited (NET), Nitel Plc has a staff strength of over 14,000.

It operates a three-tier organisational structure i.e. Corporate Headquarters, 6 Zonal and 39 Territorial Administrations, a system that enhances decentralisation.

Each state of the federation and the Federal Capital represents a Territory. Lagos is however structured into 3 territories.

NITEL has well over 700,000 Telephone lines and over 13,000 Telex lines in the network. The digital system was introduced in 1990. Over half a million lines of the existing capacity are digital lines.

The range of services provided by the company includes the following:

Telephone Services:

- Local Telephone Services
- Telephone with International Direct Dialing (IDD) Facility
- Public Pay Phone
- Call Office and Public Counter Services
- Operator Information Services

- Emergency Services e.g. (Police and Fire)

Telex Services:

- Domestic Telex
- International Telex
- Registered Telegraphic Address

Specialised Services:

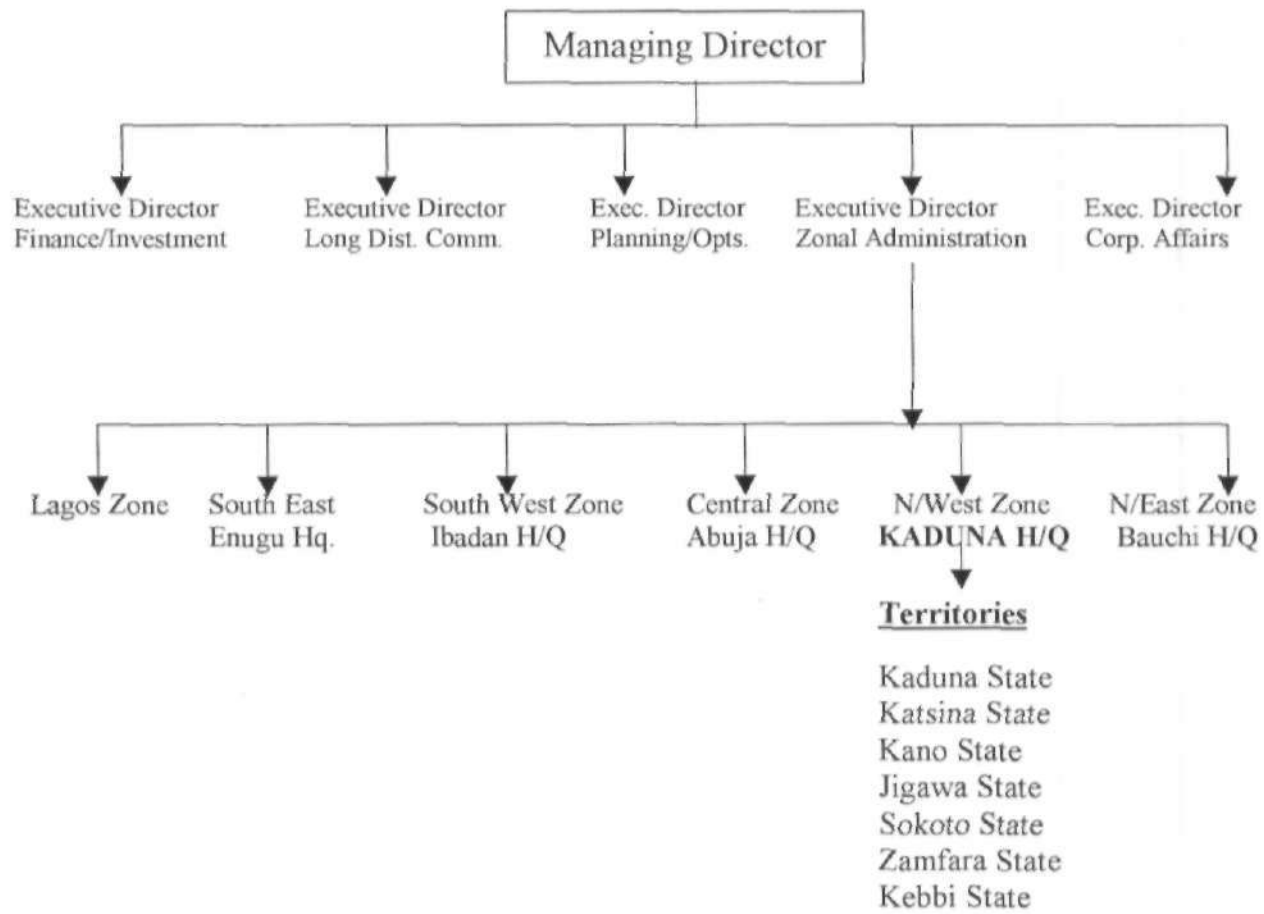
- Leased Circuits
- Private wire
- Alternative Voice Data Circuit
- Transmission and Reception of Real Time Television for Network Programmes.

Other Services:

- Voice Cast and Press Reception
- NIFAX Service (Public Facsimile)
- Training of Telex and PBX Operators
- Pal-Secam Tape Conversion
- International Maritime Satellite Service

Other relatively new services provided by the company are the INMARSAT services and the Computer Orientation Switch for International Telegraph (COSIT) service, Network Paging Service and Audio Mart Service, and Internet related Services

2.2 Organizational Structure for NITEL:



(Nigerian Telecommunications Plc – Corporate Diary/Profile – 1998)

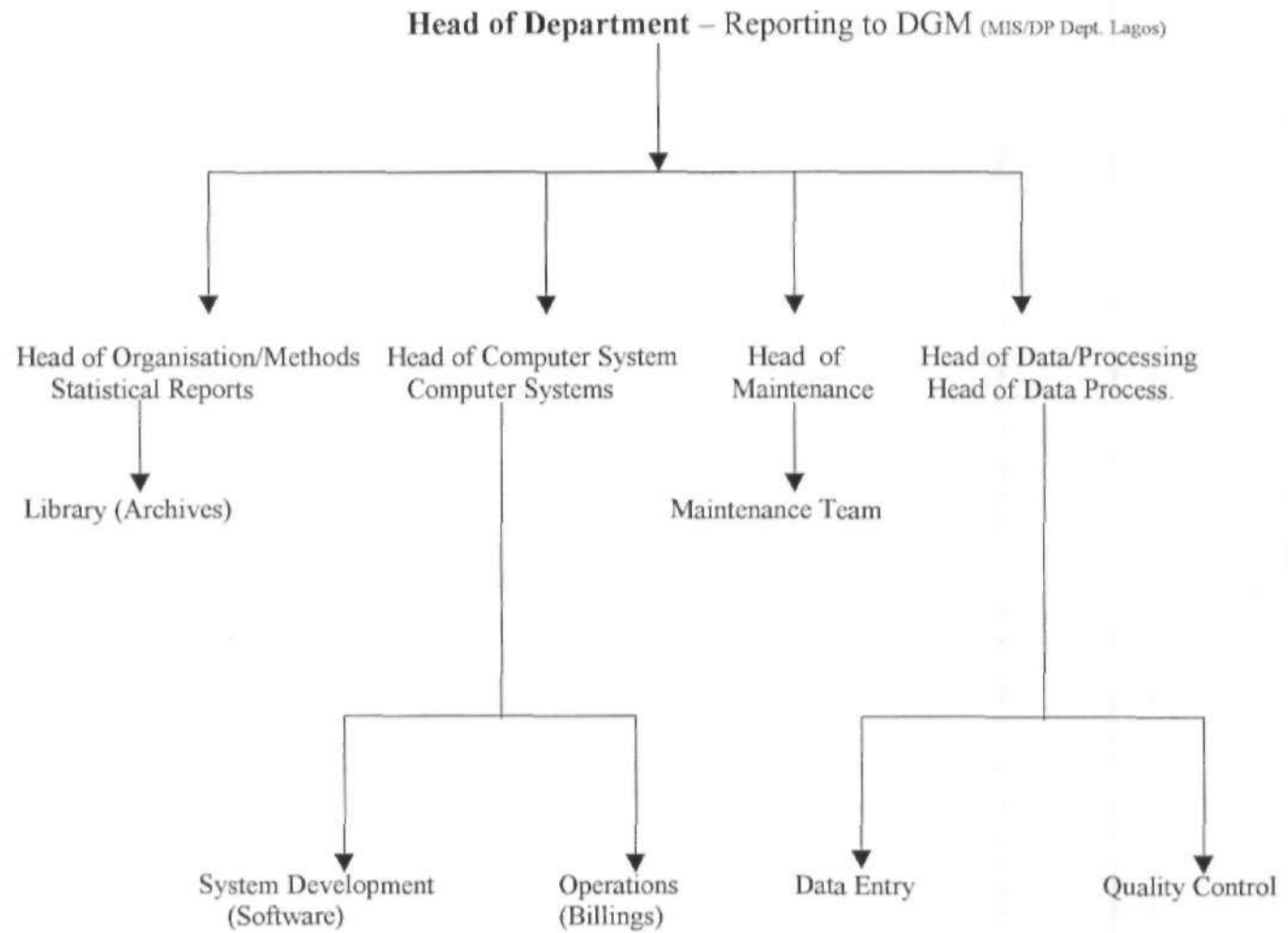
2.3 History of Management Information System (MIS) Department:

This department of Nitel Plc, Kaduna was set up in 1985 when the Telecommunication department of P&T was amalgamated with the Nigerian External Telecommunication Ltd. into Nitel, Plc. At the time of establishment, the department was processing data manually into information for management use. Automated processing of inputs to produce subscriber bills did not commence

until 1987. Before the commencement of the automation, hand written bills were issued. The department handles over 90,000 subscriber bills and generates fifteen different types of reports for management use. All services rendered by the department concern Billings.

2.4 **Structure of MIS Department:**

MIS/DATA Processing Center – NITEL Kaduna:



(MIS department NITEL-Kaduna, Archives 1998)

2.5 Nature of Decision Making:

A decision is the selection of alternative course of action from available alternatives in order to achieve a given objective. A decision is a choice aimed at achieving optimum result in a given situations. Decisions aim at making things happen in order to achieve an objective. (Nwachukwu, 1988)

According to Stoner and Freeman (1989), decision-making is an important part of the problem solving process and managers make different types of decisions under different circumstances. They further stated that, the amount of information available to the decision maker varies and managers have to vary in their approach to decision-making, depending on the particular situation.

There are two types of Decision-Making situations:

- (i) Programmed Decisions: - These decisions are made in accordance with some habit, rule or procedure. Every organisation has written or unwritten policies that simplify decision making in recurring situations by limiting or excluding alternatives. To some extent, programmed decisions are limiting because the organisation, rather the individual decides what to do.
- (ii) Non-Programmed Decision: These decisions deal with unusual or exceptional problems. If a problem has not come up often enough to be covered by a policy or is so important that it deserves special treatment, it must be handled by a non programmed decision. As one moves up the organisational hierarchy, the ability to make unprogrammed decisions becomes more important because progressively more of the decisions are non-programmed. (Stoner and Freeman – 1989)

According to Cole (1990), decisions can range from those of a vital, once-for-all nature to those of a routine and relatively trivial nature. He further stated that, decisions can be immediate in their effect or can be delayed.

The decision that managers are required to make may also be categorised in terms of the degree of certainty that exists in a situation. In a perfect, theoretical world, managers would always have all the information and knowledge needed to resolve any situation. But managers do not function in a perfect world – they function with the reality that many things are not known. Therefore decision-making situations falls into one of the four categories that exist along a certainty continuum: (i) Certainty (ii) Risk (iii) Uncertainty (iv) ambiguity. (Burton and Thakur – 1995)

2.6 Decision – Making Process:

The process of making decisions is a cycle of events that includes the identification and diagnosis of difficulty, the reflective development of a plan to alleviate the difficulty, the limitation of the plan and the evaluation of its success, as such decision-making processes involve a series of complex interaction of events according to Musa'azi (1982).

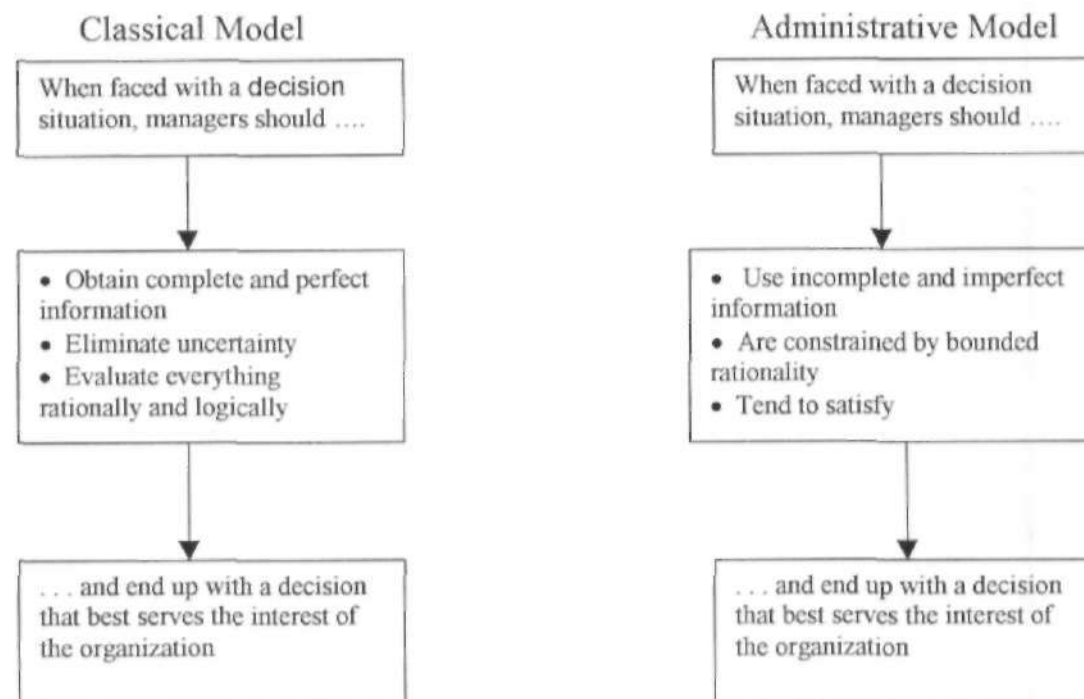
Musa'azi (1982), also stated that these interactions involve:

- (i) Studying carefully the existing situation in order to get acquainted with the situation to enable detection of problems or difficulties.
- (ii) Recognising and defining the problem in order to think about rectifying the situation
- (iii) Examination of the detailed make-up of the problem in the existing situation to ascertain the degree of difficulties involved.
- (iv) Deciding on the criteria for resolving the problem.
- (v) Developing a plan of action

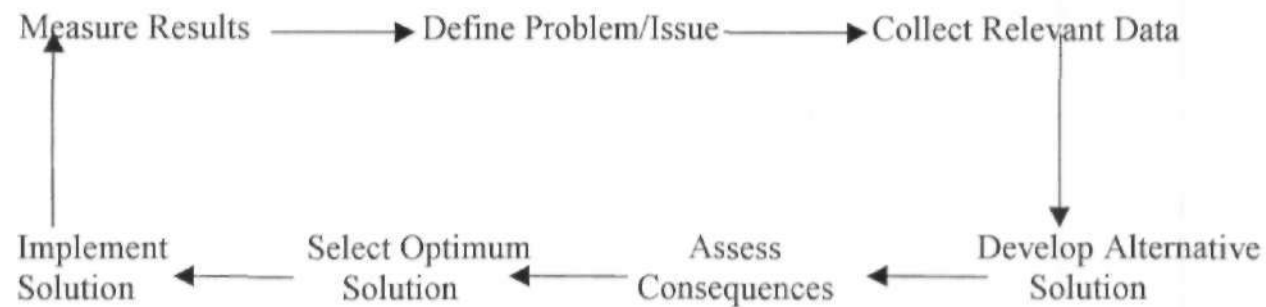
(vi) Limiting the plan of action

According to Burton and Thakur (1995), the Decision-making process has been explained by two basic theories; the “normative theory” that specifies how decisions ought to be made in order to accomplish desired outcomes and the “descriptive theory” which attempts to explain only how decisions are made, without attempts to formulate behavioural guidelines.

Cole (1990), that the “normative theory” is manifested in the classical model of Decision making, while the “descriptive theory” is embodied in the administrative model decision making as illustrated below:



Decision-making pre-supposes the existence of alternatives. From these alternatives, the decision maker selects the one that will yield the desired result. This entails the existence of some criteria for measuring or comparing the desirability of the alternatives in relation to the purpose, (Cole 1990). According to Cole (1990), an analysis of the way decisions are made in organizations results in the sequence of events shown below:-



2.7 Importance of Decision-making in Management:

Management consists, to a great deal, the making of decisions. The decision making more often than not is synonymous with management. At every turn in the management process, the manager must make a lot of diverse decisions. Making good decisions is not only important but also essential to managerial success. (Burton and Thakur – 1995).

Objective for the manager cannot be realised without the essential ingredient of decision-making. Nwachukwu (1988), stated that the necessity to decide is the everyday pre-occupation of management in all types of organisations whether small enterprises or multinational corporations.

According to Cole (1990), management can be seen as having three principal areas of concentration; Strategic, Operations and Administration. He further stated that these functional areas are managed through crucial decisions relevant to efficient functioning.

Cole (1990), elaborated the following as key decision areas;

- (i) Strategic Decision:- these are basic, long term decisions which settle the organisations relationship with its environment, notably in terms of its product or service and its markets. These are decisions which set the principal goals and objectives of the organisations. Such

decisions tend to be non-routine and non-repetitive. They are usually complex, especially in terms of the numbers of variables which have to be considered before final choices are made.

- (ii) Operational Decisions:- These are the short-term decisions, which settle issues such as output levels, pricing inventory levels. Fewer variables are involved in the decision-making process, and the decision themselves are routine and repetitive by nature. Operating decisions tend to receive priority over others because of the sheer weight of their volume plus their ability to show results in the short term.
- (iii) Administrative Decisions:- These decisions arise from, and are subject to, the conflicting demands of strategic and operational problems. They are essentially concerned with settling the organisation's structure by establishing lines of authority and communication.

Problems arise when an actual state of affairs differs from desired state of affairs. In solving a particular problem, many decisions have to be made and sometimes the solutions will require an entire chain of decisions. Large problem or small, it is usually the managers who must confront it and decide what action to take. Manager's decisions provide the framework within which other organisational members make their own decisions and act. (Stoner and Freeman – 1989).

According to Stoner and Freeman (1989), planning involves the most significant and far-reaching decisions a manager can make. They further stated that, the entire planning process involves

managers in a continual series of decision – making situations and therefore the quality of their decisions plays a large role in determining how effective their plans will be.

2.8 **MIS-Definition:**

According to Stoner and Freeman (1989), MIS is a formal method of making available to management the accurate and timely information necessary to facilitate the decision-making process and to enable the organisation's planning, control and operational functions to be carried out effectively. The Information system, they further stated, provides information on the past, present and projected future and on relevant events inside and outside the organisation.

The raw data are the basic facts and figures of the operational life, such as output figures, hours worked, invoice values, part numbers. These data may be stored on manual or computer systems. Taken together and assembled into relevant groupings, they become information, which is basically data that has been analysed, summarised and interpreted for the benefit of the potential user, in this case a manager. This entire set-up defines Management Information System(Cole,1970).

A Management Information System (MIS) is used to transform data into useful *information as needed to support managerial decision-making with structured decisions* i.e. Decisions based on predictable patterns of activity (Burton and Thakur – 1995).

Unlike other assets in management, information can be physically managed and controlled at will to serve the objectives of the management enterprise. According to Nwankwo (1985), MIS implies both technique, the process, as well as the

structure concerned with systematic, accurate and speedy organisation and control of relevant signals, data or messages from different parts and environments of an activity unit, through appropriate collection, editing, analysis, display, storage and retrieval of such signals or messages in manners that would be useful for managerial decision-making.

A Management Information System can also be defined as a computer system, integrating equipment, procedures and personnel, that develops and provides information used by management for decision-making purposes, according to Orilia – 1979. He further stated that, the key requirement for the proper functioning of an MIS is an effective combination of personnel, equipment and the supporting computer system to provide useful information – any single factor is not sufficient to carry out the entire system.

There is little agreement concerning what a total or management information system is suppose to be. However, according to Fuori (1977), it is possible to define MIS in terms of what it should accomplish. In this context, he stated that MIS could be described as an information system that can provide all levels of management with information essential to running the organisation.

According to Fuori (1977), a MIS should accomplish the following tasks:

- (i) A database which is constantly kept current and accessible.
- (ii) Automatic issuance of periodic information and reports in sufficient detail so as to allow management to take sufficient action.
- (iii) Capable of producing special reports on demand.
- (iv) Capability of accepting and answering real-time inquiries for information in greater scope or depth than issued in periodic reports.

- (v) An efficient output communication network capable of disseminating management commands and decisions to appropriate output stations.
- (vi) A self-checking feature to indicate a system failure or break down.
- (vii) A built-in warning system to immediately inform the appropriate criteria and the automatic issuance of corresponding action, instructions as per predefined policy limits.

Organisations have always had some kind of management information system, even if it was not recognised as such. In the past, these systems were of highly informal nature in their set-up and utilisation. Not, until the advent of computers, with their ability to process and condense large quantities of data, did the design of management information systems become a formal process and field of study (Mandell, 1982).

Ariyo (1985) says that an information system deals with management of database. He further stated that, an objective of any information system is to keep track of all processes involved in an organisation.

2.9 **The Elements and Nature of MIS:**

According to Nwankwo (1985), MIS provides each manager or user with information which he needs for decisions; when he needs it and; in the form which aids understanding and stimulates actions. The MIS processes involves various procedures and methods that convert data into useful information for management to base important organisation's decisions. Quality information is that which accurately represents reality. It is the quality or accuracy of information that makes the information system function properly. The accuracy of information can

thus be reviewed as the degree to which it is error free. Accurate information must be precise, clear and ready for application of the problem at hand.

Burton and Thakur (1995), have suggested that, the value of information depends on four factors: its quality, timeliness, quantity, and relevance to management's ability to take action.

The more accurate the information, the higher its quality and the more securely managers can rely on it when making decisions. For effective control, corrective action must be applied before too great a deviation from the plan or standard has taken place. Thus, the information provided by an information system must be available to the right person at the right time for appropriate action to take place. Managers can hardly make accurate and timely decisions without sufficient information. If they receive more information than they can productively use, they may overlook information on serious problems. Similarly, the information that managers receive must have relevance to their responsibilities and tasks. (Fouri, 1977)

It is possible to identify different types of formal MIS which are useful to management. According to Cole (1990), four of such types of MIS include:

- (i) Control systems, which monitor the organisation's activities and report on them.
- (ii) Databases systems which, process and store information which can be drawn upon as a kind of organisational memory bank.
- (iii) Enquiry systems, based on either internal or external databases for carrying out investigations into the performance of departments, products lines, competitors and the like.

- (iv) Decision support systems; providing computer-based facilities for conducting analyses, simulations etc.

Burton and Thakur (1995) stated that, the contents of the various elements of information systems may include; data entry and presentation devices, data storage devices, telecommunications equipment, data/information, terminal information devices, procedure, programs, methods and documentation. According to Fuori (1977), Information systems can be classified according to system response time, or elapsed time, data input or inquiry to the out of usable information. Some classifications of information system include:

- Off-line
- On-line
- On-line, real-time
- Multiprogramming
- Multiprocessing
- Time sharing
- Integrated
- Management

A system can be defined according to Nwankwo (1985) as “a series of interrelated and interdependent parts, such that the interaction of any part or sub-system affects the whole system”. Nwankwo (1985) further stated that systems have input and outputs; events in a cyclical manner, a tendency towards differentiation or multiplication (growth and development); and an inherent mechanism for self preservation or perpetuation, all systems have boundaries.

Another vital characteristic of MIS according to Nwankwo (1985), is its propensity to have subsystems. Each subsystems operates separately but not independent of the mother system, and the other sub-systems in the unit.

The integration, which is the coordination and unification of the sub-system activities is very vital to MIS. Where there is no integration among subsystems, the whole system will fail to operate equifinally. According to Nwankwo (1985) there are three common types of information integration:

- Vertical integration, whereby a single administrative unit is overall responsible for all stages of information management.
- Horizontal integration, whereby different stages are concentrated at different points in the organisation.
- Longitudinal Integration, in this case each unit is responsible for all aspects of collection, processing and dissemination of one type of information while other units are responsible for all aspects of other forms of information. This form of integration is the most common type although, it is not ideal for computerised MIS because it would be expensive to have full computerised MIS in each unit within the organisation.

2.10 **Significance of MIS as an aid to Management Decision-Making:**

As organisations become larger and more complex, the men at the top depend less and less on first hand experience, more and more on heavily “processed” data. Before getting to managers, the raw data have been sampled, screened, condensed, compiled, coded, expressed in statistical forms, spurn into generalised and crystallised into recommendations (Gardner 1965).

No single person according to Wiernmum (1970), can run a modern organisation who is not extraordinary gifted in handling the end products of a modern information processing system.

Information gives the possessor power and influence over and above the authority, he may be legally vested with. In any organisation, power, that is the ability to get things done-flows into the hands of those who have the most as well as up-to-date information. People are more likely to be guided by those who know more and better. Thus a first principle in achieving managerial effectiveness is to have access to the most reliable and up-to-date information. (UNESCO, 1980).

Orilia (1979), stated that information systems deals with management of databank. He further stated that, the objective of an information systems is to keep track of all the processes in an organisation. It provides assistance to the management in decision-making. Management decision system he added, are aimed at the direct support of managers responsibility for decision-making in the organisation.

Although management decision systems do not tell the manager how to make a decision, they assist in by providing; important information as input to the decision making process, to scan the transaction processing system database and to present concise, meaningful report of management activities, particularly control activities. (Fouri 1977)

The MIS largely provides external information for top management strategic considerations. It provides tactical information to middle management, and it provides internal information or first line operations control. From this standpoint, quality, accurate, timely, complex, and relevant information are expected through routine performance reports, exception report, on-demand reports and predictive reports. (Mandell, 1982)

According to Rajaraman (1991), reports are generally offered by an MIS to the user organisation as a wide range of possible services for all levels and for all functional areas. The information needed by managers to make decisions and solve problems varies in accordance with managerial level. Managers at the top level of the organisations hierarchy, according to Burton and Thakur (1995), have a unique need for information related to the formation of strategy, policies, long range plans and long-term objectives while middle managers tend to have greater need for information required to formulate tactical and operation plans and objectives, to implement strategy and to make operational decision; first-level managers have unique need for information that will help them implement operational plans, make-short-term decisions and conduct day-to-day business.

MIS typically provides pre-planned reports generated with data and information from the transaction processing system. To managers, the MIS is the very computer-based information system that supports all of their decision-making (Burton and Thakur, 1995).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction:

Man by nature is an inquisitive being. All human beings do ask questions about everyday occurrences for which answers are expected. The administrative quest in man is the need to provide the answers or to seek solutions to problems, which has given rise to research.

A distinction should be drawn between research and everyday sessions. It should be noted that the normal everyday question and answer sessions do not go as easy as expected because they are not as deliberate and structured as what we consider research activity. Although research and everyday question and answer session have common roots, it should be stated that research differs significantly in its scientific approach to finding answers or solutions to questions or problems.

Research can be defined as a scholarly or scientific, as well as diligent investigation or inquiry in seeking in facts or principles; it is a systematic approach for providing answers to questions.

3.2 Research Methodology:

Research Methodology is what was done and how it was done. If other researchers are to follow up the work or replicate it, they must know details of the methods and techniques employed.

Many different methods can be used in exploring a problem situation, helping solve a problem or establishing acceptability or otherwise or hypothesis. Some of these methods complement each other.

There are different types of research designs:

1) Historical Research:

It is sometimes impossible to analyse data exactly at the same time as it is collected, and interpretation is based on the past. The historical approach is concerned with being able to understand and explain the present and predict the future, through an evaluation of available records of past events. It may be concerned with a problem in management or it may be a historical approach to a current management problem.

The problem can be looked at in one or two ways:

- a) Cross-Sectional Study: where the researcher collects data and describe the field at a point in time.
- b) Longitudinal historical: in which the researcher can describe the development of the managerial problem over a period of time.

2) Case Study:

The term "Case Study" refers to a fairly intensive examination of a single unit, such as a person, a small group of people or indeed a single organisation or company. Case study involves measuring and studying what is there and how it got there. The case study maybe unique in results, findings and therefore not representative of other instances. Case studies maybe used for explanatory studies or testing of hypothesis.

3) Survey Method:

This is the most widely used method in the social sciences. Survey consists of methods of gathering data from usually a large number of respondents who themselves constitute a sample. This is done through self-administered questionnaires. Survey maybe used for descriptive, explanatory and

exploratory purposes. They are chiefly used in studies that have individual people as units of analysis.

4) **Experimental Method:**

The classical method of physical sciences is the experiment. Most physical sciences researchers aim to set up a situation in which all the variables can be controlled or varied at will. Experiments are also used in non-scientific inquiry. Social scientific researchers typically select a group of subjects, do something to them, and observe the effect of what was done. Experiments are especially suited to research projects involving relatively limited and well-defined concepts and propositions.

3.3 **Data Collection:**

Recorded observations are known as data observation, which is a method of getting information about the world around us. This could involve conducting experiments, sometimes interviewing people or just visiting and watching those you are interested in.

Observation Methods:

Observations could be direct or indirect.

a) **Direct Observation:**

Here the researcher witnesses or experiences event or phenomenon at first hand. This could be controlled or uncontrolled. Controlled observation property assumes external or independent checks upon one's findings.

b) **Indirect Observations:**

In this mode, the observer does not actually perceive the given social phenomena but rather depends upon persons who are directly observed or have experienced these observations, to reconstruct them. This method of indirect observation is the most popular in the social sciences.

Interviews:

Interviews as data collection techniques are meetings in which the investigator direct questions at the subject and records the obtained responses. The structure of interviews depends of the questions asked by the interviewer and the responses.

a) Structured Interviews:

The prime function of this method is standardisation of the interview process by means of a questionnaire schedule. The structured interview is used primarily to verify existing theories and hypothesis derived therefrom. Structured interviews offers in terms, efficiency in time saving, labour and money by eliminating needless questions. However, structured interviews have there own draw back:

b) Unstructured Interview:

The term “unstructured” does not imply lacking in structure. Unlike structured interviews, unstructured interviews assume a variety of forms which offers a considerable freedom on the questioning procedure. At times the question and answer sessions tend to be informal. Interest areas are identified and set, the interviewer has the freedom of framing and asking questions.

Questionnaire Method:

The questionnaire is a device for obtaining answers to research-relevant questions from a sample of respondents by using a form which the respondents fills. The questionnaire questions are presented with exactly the same wording, and in the same order, to all respondents. The aim is to ensure that all respondents' reply to same questions and thus helps to get the same type of information from a large number of respondents.

Open-ended questions are designed to permit a free response from the respondent rather than one limited to stated alternatives, while close-ended questions are ones in which the response of the subject are limited to stated alternatives.

Documentary Sources:

Documents – both published and unpublished are vital sources of data for a researcher.

A review of related literature like books, journals, serials, official reports, economic indicators, official gazettes, digest of statistics sharpens the researchers understanding of the research problem and formulation of hypothesis while being a vital source of data.

However much there is to Documentary sources of data, the greatest problem associated with this method of data collection is accessibility to information source.

3.4 Research Method Used in the study:

In carrying out this research two methods were employed.

(i) Unstructured Interviews:

This involved holding discussions and interviews with the Assistant Manager of the MIS department and the Territorial Accountant. The discussions held were instructed with questions which reflected identified interest areas. The responses of the persons interviewed were further elaborated by asking follow-up questions.

(ii) Reliability and validity of findings and observations were established through further in-depth study and consultations of books and journals.

3.5 Justification of methods used in the study:

The essential qualities and properties inherent in the topic of this research was responsible for the methods used to conduct the research. The role of a computerised MIS in management decision-making was clearly defined through interviewing the operators of MIS and users of the reports generated by MIS department of Nitel Plc., Kaduna.

The discussions held with the resource personnel of Nitel Plc, Kaduna were fruitful because of the accessibility of the interviewer to the respondents through direct communication and contact.

Because of the wide nature of information required by management of Nitel Plc-Kaduna and the complexity of the systems employed to provide quality information for decision-making, it became necessary to use the opportunity of unstructured interviewing which enabled; reframing of questions during consultations, clarifying questions for respondents and obtaining better responses.

The unstructured interviews kept the respondents focused on the areas of interest. Certain details of research findings were easy to obtain because, the unstructured questions allowed for follow-up questions to be asked, in order to further clarify answers given by the respondents.

The wide range of books, journals and serials consulted provided better understanding of the research findings and credible basis for analysis of the findings.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS:

Introduction:

This chapter deals with Data Presentation and Analysis of the research findings.

In the beginning part of the chapter (4.1 and 4.2), the functions and some operational aspects of the MIS department is presented. This includes, the type of hardware and software that are used in operating the information system. Data presented here was obtained from the interviews held with the Assistant Manager of the MIS department.

The next part of the chapter (4.3) deals with the various type of inputs required for operating the system. The inputs and details about them were obtained from the course of the discussions held with the Assistant Manager of the MIS department.

In 4.4, the information system is discussed and the analysis highlights the features that makes the system suitable for producing the organisations' desired output. The general system outline and operations were obtained from the interviews and discussions held with the Assistant Manager of the MIS department, while the books and journals consulted aided in the analysis of the data obtained.

The output of the system is discussed in 4.5 and the data was gathered from discussions held with the Assistant Manager of the MIS department.

The last part of the chapter, (4.6) deals with elaborating the importance of the information contained in the reports generated by the MIS department to the management function of decision-making. The data obtained was from the

interviews and discussions held with Territorial Accountant and the analysis was supported by consultations of various books and journals.

4.1 **System Functions:**

The operations of MIS department of NITEL Plc Kaduna is mainly concerned with generation of reports associated with Billings for the seven territories under the Kaduna Zone.

The functions performed by the MIS department are enumerated below: -

- (i) Compiling functional data from territories
- (ii) Provision of Database of subscribers in the territories
- (iii) Provision of customer information:- customer updates, new subscribers, change of subscriber address, change of ownership, defaulting customers.
- (iv) Make adjustments that are related to errors in billings, which could be credits or debits in subscribers' account.
- (v) Produce ad-hoc reports upon request from functional managers.

4.2 **Systems Hardware and Software:**

The Hardware that are used in the operations of MIS department include:

- VAX 4000 Computer System: Model type – DEC
- The computer has 64 megabyte memory
- Twenty-user license.
- 7.0 Gigabytes Hard disk
- 2 Tape Cartridges

- 2 Magnetic Tape Drives
- 2 x 1200 lines per minutes dot matrix printers
- 1 x 600 lines per minute dot matrix printer
- 20 terminals
- Ethernet and LAN Kit for Network connection
- Uninterruptible Power Supply (UPS)
- Stabilizer

The computer uses the following software for processing raw data into organised information for managerial use:

- The Operating System is Open VMS AXP v6.1
- VAX COBOL Programming Language
- VAX BASIC Programming Language
- Various “In-house” developed programs for running the bills and for report generation.

4.3 **System Inputs:**

The system requires different types of raw data to process into useful information for managers.

The raw data are grouped under the following categories :

- (i) Payment data
- (ii) Consumption and Generation data
- (iii) Customers and subscribers updates
- (iv) Adjustments.

There are essential features that are peculiar to each data type. These features are always captured on various source documents.

The source documents containing raw data and their peculiar features are enumerated below:

- A. Payment:
 - i) Telephone numbers of the subscriber
 - ii) Payment type i.e. either cash or other forms of Bank instrument
 - iii) Payment Date
 - iv) Payment Bank
 - v) Amount Paid
- B. Consumption and Generation – Meter Readings:
 - i) Telephone Numbers
 - ii) Meter Reading – Consumption rate
- C. Customer update:
 - i) Subscriber's Name and Address
 - ii) Customers type i.e. Private, Business or Government user.
 - iii) Monthly Access Charge
 - iv) Telephone Number
 - v) Data of Update

D. Adjustments:

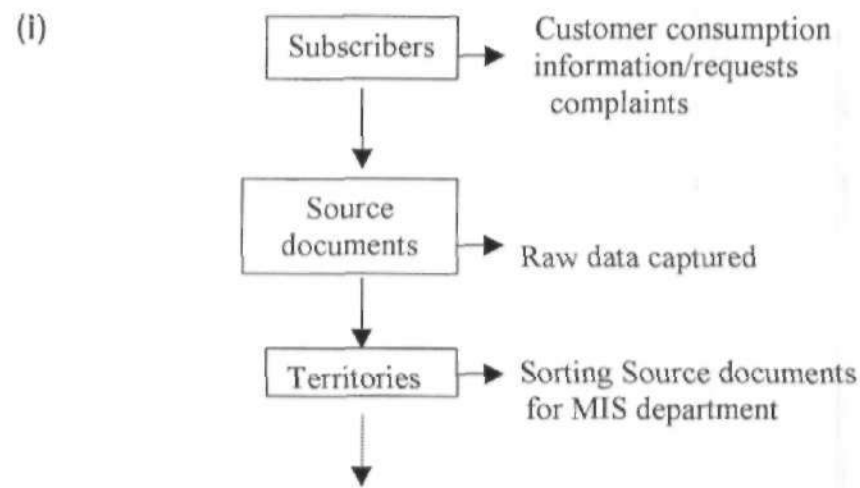
- i) Telephone Number
- ii) Type of Adjustment
- iii) Amount
- iv) Date

All the inputs submitted from the respective territories through the source documents are batched. The appropriate batch numbers are captured on them before processing.

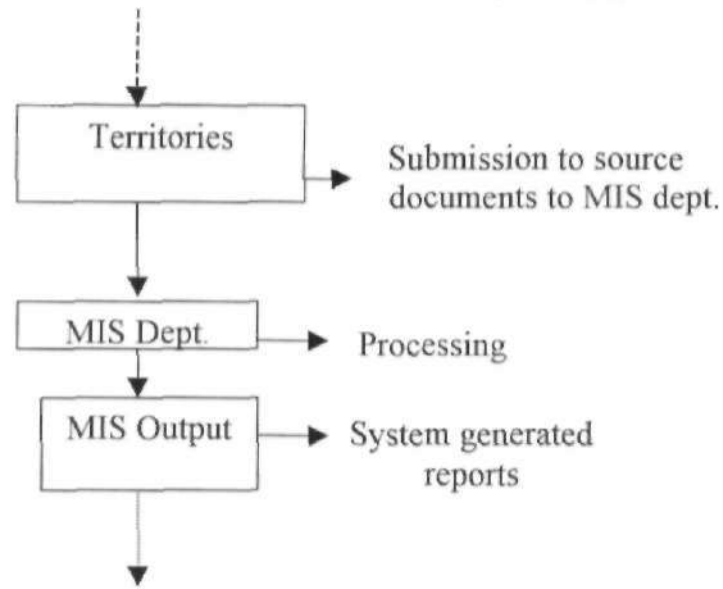
4.4 **The Information System:-**

Raw data is gathered on source documents originating from the territories and transformed through MIS processes into useful information.

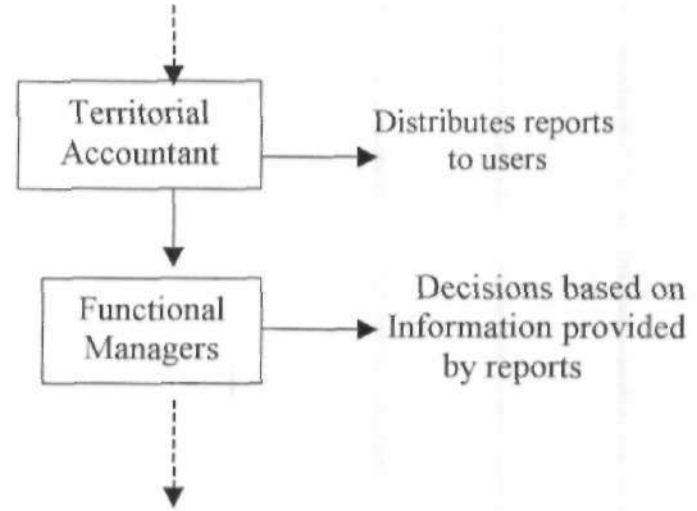
This information flow model is illustrated below:



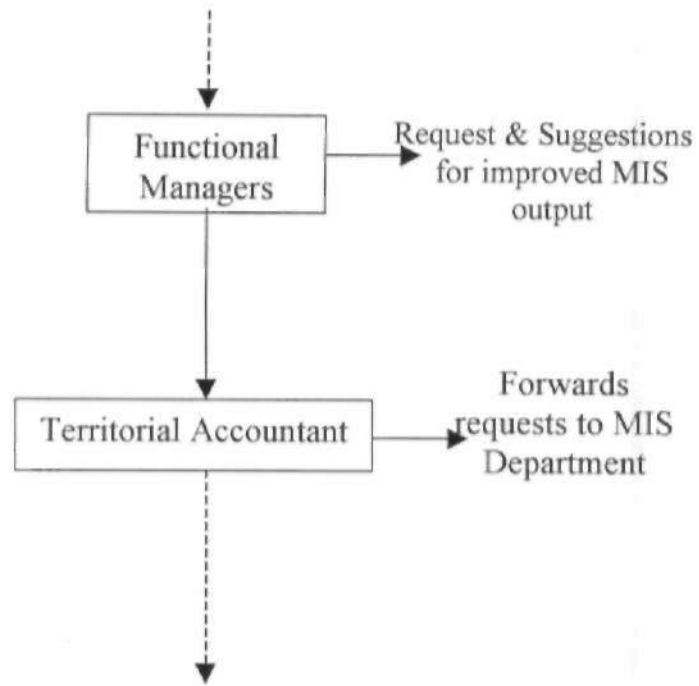
(ii)



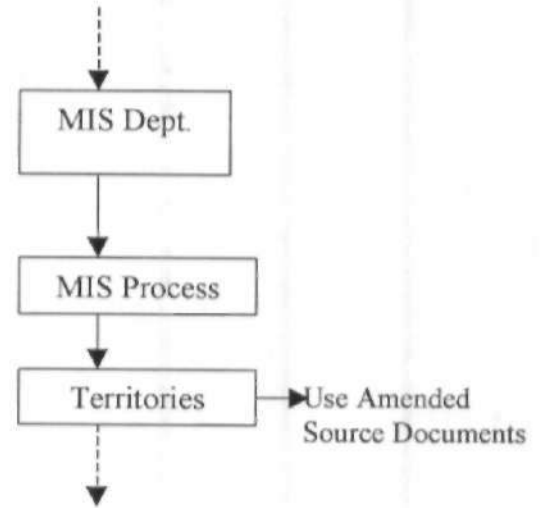
(iii)



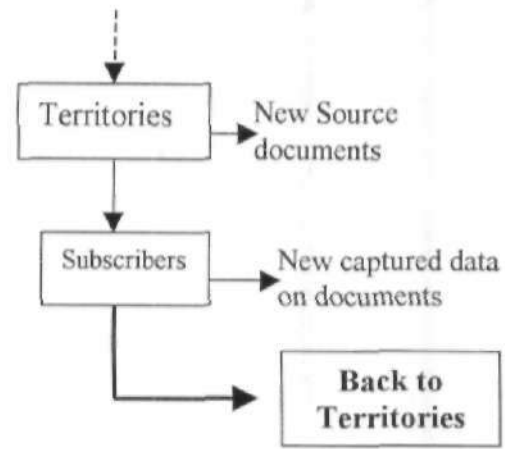
(iv)



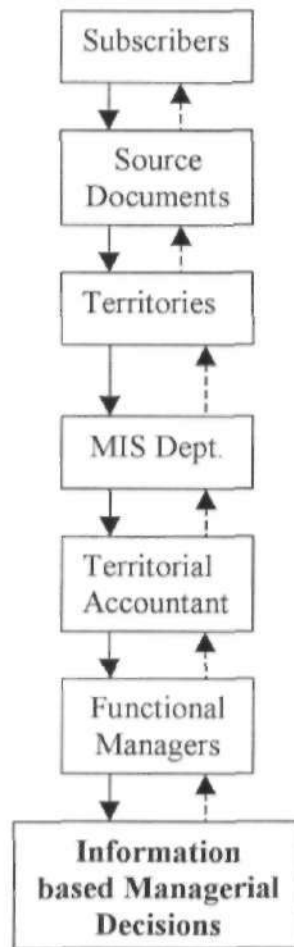
(v)



(vi)



(vii)



In order to avoid important and relevant information being over looked, certain strategies are adopted for developing the system to produce the requirements of the functional managers.

These strategies consists of: -

- i) Identification of raw data sources;
 - Payment data
 - Consumption and Generation data
 - Customer and subscriber updates
 - Adjustments
- ii) An evolved method of obtaining the raw data;
 - Subscriber pay in-slips
 - Tapes from digital exchanges
 - Meter photographs from Analogue Exchanges
 - Customer update forms
 - Adjustment forms

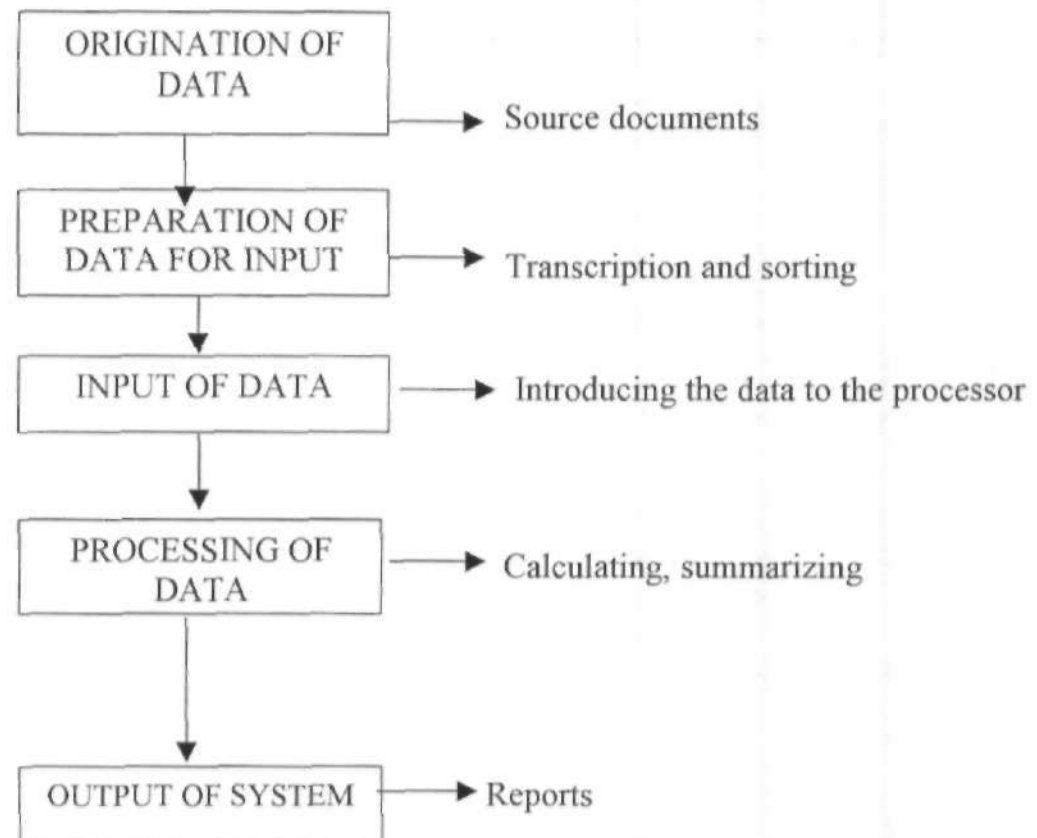
In this model, data is gathered in two different forms for processing into useful information:

- a) Quantitative Data: - which is statistical in nature such as payment data and consumption, generation data.
- b) Qualitative data - comprising, procedures, practices and customer related trends.

This model of information flow is useful in determining:-

- a) The main users of the system.
- b) Types of forms and documents to be used for capturing raw data.
- c) The types of reports to be generated by the MIS processes.
- d) The computer programs to be used for generating such reports.

The raw data collected goes through Data Processing in the following basic stages:



The system is a feed back system, which is in constant interaction with the subscriber attributes. The feed-back loop is useful to the Accounts subsystem, because the actual behaviour of the system can be compared with the expected results and the differences can be detected as positive deviations or errors.

4.5 System Outputs:

The system operated by the MIS department mainly generates billing reports with a few other reports solely used for internal control in the department. The internal reports used for control are useful to the operators of the Information System to enable effective running of the system, maintenance and for quality control checks.

There are fifteen different Billing Reports generated by the system every month:

- International Call Report
- Dial and Trunk Call Report
- Dial Call Charge Report
- Payment Report
- Business Office Copy
- Accounts Ageing Analysis Report
- First Time Credit Report
- Credit Balance Report
- Terminal/Final Debtors Report
- Territory Account Status Report
- Performance Report
- Bank listing Report
- Payment and Adjustment Listing Report
- Digital Exchange Raw Meter Report
- Ad-hoc Report

These reports contain critical details of Information, that are necessary in user processes for decision-making purposes.

The contents of the reports are described below:

International Call Report:

This report basically contains an analysis of International calls made by subscribers detailing monetary contributions by the respective telephone exchanges, territories and zones.

Dial and Trunk Call Report:

All “dial” and “trunk” calls made in each territory are recorded in this report.

Dial Call Charge Report:

This report shows excessive meter readings or predetermined readings, including zero meter readings.

Payment Report:

All payments as captured by the Information System are highlighted in this report. The information indicates; wrong payment dates, territorial losses, wrong payment figures including zero or non-payments and wrong telephone numbers.

Business Office Bill Copy:

In this report, all bills submitted to the subscribers are reflected. This report itemizes; the subscribers opening balances; monthly rental charges, international calls made, current charges, payments adjustments and outstanding balances.

Accounts Ageing Analysis Report :

This report shows the status of the subscribers accounts, details; current charges, charges made in the previous two months and opening balance of past three months.

First Time Credit Report:

The first time credit report shows all the telephone lines having outstanding credit balances for the first time in the particular billing month.

Credit-Balance Report:

This report shows details all telephone lines that have outstanding credit balances in each territory.

Terminal/Final Debtors Report:

This is a report which lists the terminal or final bills of all telephone lines that have been recovered.

Territory Account Status Report:

This report contains a summary of all accounts status. The report depicts the status of the accounts before and after the current months' bill. It highlights, the opening balances, current charges, payments and adjustments.

Performance Report:

A breakdown of all input transactions is given in this report. The transactions shown include; Dial calls, Operator assisted calls, International calls, Payments and Adjustments for a particular month. These features are broken down on comparison basis between the various Exchanges.

Bank Listing Report:

This report lists payment received from subscribers on behalf of Nitel Plc by all Banks that have been given mandate by the management. The report gives details on the subscribers that have paid and the amount paid for every particular month.

Payment and Adjustment Listing Report:

This is a monthly listing of all posted payments and adjustments made for the month.

Digital Exchange Raw Meter Report:

This is a raw report of current monthly meter readings for all telephones in a Digital Exchange.

Adhoc Report:

This report gives information on whatever the needs of the functional managers are depending on the request put forward to the MIS department at any time it is required.

The various reports can be classified into four different categories, depending on their peculiar features:

- i) Summary type reports
 - ii) Generation related reports
 - iii) Payment related reports
 - iv) Customer Information Reports
- (i) Summary Type Reports:
- Territory Account Status Report
 - Performance Report
- (ii) Generation Related Reports:
- International Call Report
 - Dial and Trunk Call Report
 - Dial call charge report
 - Digital exchange raw metre report
 - Accounts Ageing Analysis Report
- (iii) Payment Related Reports:
- Payment Report
 - Business Office Bill Copy Report
 - First Time Credit Report
 - Credit Balance Report

- Bank Listing Report
- Payment and Adjustment Listing Report

(iv) Customer Information Related Reports:

- Terminal/Final Debtors Reports

Adhoc reports could fall under any category depending on the contents of the reports.

All the reports generated by the MIS department are “scheduled reports” except for the adhoc reports. The reports are scheduled reports because they are produced periodically, at the end of every month.

The adhoc reports are developed to give certain information at any of the functional managers’ request. Such adhoc reports can be termed “Demand Reports” because they are produced only on demand.

4.6 Application of Reports:

The reports are designed to meet the decision making requirements of the following categories of managers:

i) Top level Managers:

- General Manager Finance
- Zonal General Manager
- Deputy General Manager Operations
- Zonal Deputy General Manager Finance

ii) Middle level Managers:

- Territorial Accountant
- Territorial Managers

- Exchange Area Managers

iii) Low level Managers:

- Business Office Manager
- Credit Control Officers
- Operations personnel of MIS department

An analysis of the reports vis-à-vis their usefulness to the decision makers is presented below:

REPORT	USERS OF REPORT	USAGE
1) International Call Report	i) Zonal GM ii) DGM Operations iii) Territorial Accountant	Serves as an information base for exchanges, territories and zones on their expected revenue at the end of the billing month.
2) Dial and Trunk call report	i) Territorial Managers	The value of all valid and invalid transactions are determined from this report.
3) Dial call charge report	i) Exchange Area Managers	Prompt investigations are made to rectify anomalies.
4) Payment Report	i) MIS operational staff ii) Territorial Accountant	This report is used for data control and to validate payment inputs submitted and to effect corrections where necessary.
5) Business Office Bill Copy Report	i) Business Office Manager	This report is used as a reference copy of the subscriber's summary bill.
6) Accounting Ageing Analysis report	i) Credit Control Officers ii) Territorial Accountant	Credit control department uses report as a reference to ascertain status of subscribers' accounts. The territorial accounts uses the report for obtaining statistics on revenue generation and debt positions comparatively between exchanges.

REPORT	USERS OF REPORT	USAGE
7) First Time Credit Report	i) DGM Operations ii) Territorial Accountant	This report is used for quality control checks and balances. Credit transactions, which results in credit balances, are determined by using the report.
8) Credit Balance Report	i) Territorial Accountant	Genuine credit balances of subscribers are ascertained by using this report.
9) Terminal/Final Debtors Report	i) Credit Control officers ii) Territorial Managers iii) Territorial Accountant	This report is used for determining indebted level of subscribers whose lines have been recovered.
10) Territory Account Status Report	i) Zonal DGM Finance ii) Territorial GM iii) Territorial Manager iv) Territorial Accountant	The position of Accounts of the territories are derived from this report.
11) Performance Report	i) Zonal DGM –Finance ii) Territorial GM iii) Territorial Manager iv) Territorial Accountant	This report is used to access the revenue generation and collection level of each territory.
12) Bank Listing Report	i) GM-Finance ii) Zonal DGM-Finance iii) Territorial Accountant iv) Territorial Managers	This report is used to reconcile, draft amounts submitted by Banks and also low activity Banks are determined from these report.
13) Payment and Adjustment Listing report	i) Territorial Accountant ii) Business offices Manager	This report is used for checking unadvised payments and adjustments to subscriber accounts
14) Digital Exchange raw meter report.	i) Territorial Manager ii) Business Office manager	This report is used for checking, detecting and correcting anomalies in meter readings.

The information needs of successive layers of management range from, appraisal needs to business goals is provided as system outputs.

The information required by functional management is relatively stable in terms of detail content and frequency; this shows that a type of “Top-Down” system is being operated.

The volume of information for top level management is condensed and unstructured. This indicates that information trends are required for General Managers and Deputy General Managers – Finance to make strategic decisions such as, opening of New Telephone Exchange and introduction of new devices to boost revenue generation.

At the middle management level, information is generally summarised and reasonably structured. The information supplied to the Territorial Accountant, Territorial Managers, Exchange Managers allows for tactical decisions such as payment of Bills by subscribers, will help in deciding credit limits to be allowed, changing of credit limits, introduction of new credit policies. The tactical information is obtainable from day-to-day collection of routine data.

Information for low level managers is detailed and well structured. Information available for business office manager, system operation officers, and credit officers provides for operational decision such as volume of defaulting customers, outstanding bills and Accounts status.

Generally, decisions taken mainly concern:

- the volume of credit of subscribers
- the level of debts of the various Exchange
- performance measurement of Territories
- Analysis of revenue generation

The reports are generated at the end of every billing period, which is on a monthly basis. Delays in the generation of the reports, generally affects the performance of the organisation in terms of revenue generation through the following ways:-

i) Summary Reports:

These reports enable managers to assess the level of revenue generation by the territories. The performance of the territories cannot be measured successfully unless there is an observed trend in the level of revenue generation over a fixed period. Delays constituent fluctuations and breaks in trends leading to inaccurate assessments.

ii) Generation Related Reports:

The managers have to be given these reports promptly. Anomalies indicated in these reports must be checked in good time to enable managers effect corrections in order to ensure maximum generation of revenue through efficient operations.

iii) Payment Related Reports:

The reports are mainly used by the managers for various control purposes related to subscriber payments. If the reports are delayed standards cannot be measured and thus crucial decisions to rectify deviations cannot be taken promptly.

iv) Customer Information Related Reports:

Delays in generation of these reports will affect the credit payment of the subscribers and will therefore directly affect monthly collection of revenue adversely.

CHAPTER FIVE

SUMMARY AND CONCLUSIONS:

5.1 Summary:

There is a variety of problems confronting managers concerning decision-making. One of the major problem is that of availability of purposeful information to enable sound decisions to be taken.

Organisations are becoming more dynamic and the growing problems associated with managerial decisions necessitates the need for formal methods of processing raw data into useful and organised information. The method of achieving production of useful information for management is termed "Management Information System" (MIS). MIS is thus a means of identifying, gathering and processing all relevant data with a view to enhancing the quality of decision bearing on a subject matter. A "computerised" MIS uses the aid of computer-technology in processing raw data into meaningful information designed to meet the decision making needs of managers.

The MIS department of Nitel Plc, Kaduna deals with the billings aspect of the Accounts department of the organisation. The department covers the North Western Zone of Nitel Plc, handling well over 90,000 subscribers bills and generating reports containing information for managerial use.

The computerised information system compiles functional data from the territories; provides a database for subscribers; produces customer information and makes credit or debit adjustments when errors are made related to billings. The system uses a VAX 4000: Model type-Dec with open VMS AXP v 6.1 operating system to process raw data contained in input source documents; pay-in-slips for

payment data, tapes and meter photographs for consumption and generation of data, updates forms for customer and subscribers updates, adjustment forms for billing adjustments.

Quantitative and Qualitative raw data are processed by system and presented in fifteen different reports as output:

- (i) Summary Type Reports:
 - Territory Account Status Report
 - Performance Report
- (ii) Generation Related Reports:
 - International Call Report
 - Dial and Trunk Call Report
 - Dial call charge report
 - Digital exchange raw metre report
 - Accounts Ageing Analysis Report
- (iii) Payment Related Reports:
 - Payment Report
 - Business Office Bill Copy Report
 - First Time Credit Report
 - Credit Balance Report
 - Bank Listing Report
 - Payment and Adjustment Listing Report
- (iii) Customer Information Related Reports
 - Terminal/Final Debtors Reports

Adhoc reports produced falls under any categories, depending on the content of the reports.

The system is a positive feed-back system which enables remedial actions to be taken in order to bring results to the desired level, through adjustments.

Different levels of managers constitute the decision – makers in the organisation's Northwest zone:

The top level managers;

- Zonal General Manager
- General Manager Finance
- Deputy General Manager, Operations
- Zonal Deputy General Manager, Finance.

The middle level managers;

- Territorial Accountant
- Territorial Managers
- Exchange Area Managers.

Low level managers include:

- Business office managers
- MIS operations officers
- Credit control officers.

The information generated for Top level managers is condensed and unstructured enabling trends to be recognised for strategic decisions. Summary reports are used by middle level managers to support tactical information obtained from collection of routine data. Detailed reports are generated for the used of low level managers for making operational decisions based on the information contained in the reports.

The contents of the reports provide information which enables the managers to make decisions concerning; revenue generation, credit volume of subscribers, levels of Exchange debts and measurement of territories' performances.

5.2 Conclusions:

The MIS department of Nitel Plc, Kaduna generally deals with the Billings aspect of organisation Accounts department. The reports generated as output from the MIS department are relevant to the decision-makers and their significance are understandable to the management because they assist in revenue generation management.

As long as organisations are small and have limited operational goals, manual information systems are satisfactory. But, Nitel Plc is a large organisation and a computer based information system is essential in running the organisation. This is because of the following reasons:

- the continuous expansion of organisation, distributed with many branches.
- as the organisation expands, the volume of data is increasing and the variety of the information and their timeliness is now of great importance.
- markets are becoming competitive and the organisation has to be internationally competitive and upto date with modern technology.
- the computer based processing of data enables the same data to be processed in many ways, based on needs, thereby allowing the managers to look at the performance of an organisation from different angles.

- the general socio-economic environment demands more upto date and accurate information; government regulations are becoming more complex, and the organisation has to interact with many other interested parties such as consumer groups and financial institutions.

Because computerised information systems, makes communication faster, information more reliable and authentic, many countries are looking to Information Technology as a means to further their economic and social aspirations.

As development poses a big problem to Nigeria, it is obvious that of all the factors necessary for economic take-off, none is stressed more often than "management". To be able to obtain balanced efforts in management, the objectives of all managers on all levels and in all areas should be keyed to both, short-ranged and long range considerations which require some efficient formal system to produce information for such considerations. Nigeria has been having its own fair share of the race for computerisation, but it is however imperative for management of any organisation to know when and how to embark on computerisation to suit their organisational objectives.

From the foregoing, in order to ensure purposeful management of information, organisations must always regard the success of it's information system as the degree to which organisational goals, for which that information system was employed, are actually achieved. This means that an evaluation of a computerised information system will require an appraisal of the extent to which each attribute of the system helps in achieving organisational objectives. One major issue of note is that, since information requirements of management are not generalized across organizations, and information processing style is "custom-made" or individual specific, then the identification of the requirements of specific users of information should be the guiding framework for the design and implementation of a successful system.

5.3 Recommendations

A range of observations were noted during the course of this research. The following recommendations are made with a view to improving and correcting the observed lapses:

- The “batching” type of data processing in MIS operations should be replaced with a more efficient “on-line” processing in order to avoid unnecessary delays and enhance faster generation of reports.
- Modern “user friendly” hardware should replace the current hardware, which has no Graphical User Interface. This will enable MIS operators and end users of MIS output access to easier and faster computer operations and usage.
- The software currently being used in the MIS department should be standardised. This can be achieved by introducing a “Wide Area Network” (WAN), where all MIS centres would be connected to a central server in which all the organisations’ software will reside. This will also help in linking all functional managers to the MIS department through “user terminals”. MIS inputs could be received on “real time” and information for managerial decision-making could be obtained “on line”.

Furthermore, with the central server, Database for the whole organisation would be readily accessed by all managers for the provision of all essential services in other functional areas, such as personnel matters, marketing, administration and finance.

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