THE IMPACT OF MANAGEMENT INFORMATION SYSTEM ON UNIVERSITIES' MANAGERIAL DECISION-MAKING

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***Abstrac*t**
Management is often saddled with decision – making in planning, directing, controlling coordinating, financing and staffing functions. Information is a critical factor for effective and efficient managerial decision-making in universities Quality decisions, its efficient communication and effective implementation are the live wire of every organization like the Universities. Quality managerial decision is critical and vital to success and achievement of the Universities goals and activities. Quality Information is the bedrock, fulcrum and the veritable resource of the universities' quality managerial decision. It is often the output of Universities' Management Information system (UMIS). Management Information System is the state-of-the-art Information technology tool for gathering, processing and churning good information for managerial decisions. This study examines the effect or influence of universities management information technology on managerial decision – making in Universities. It investigates factors that influences information gathering, processing, communication, utilization and the flow of effective information. It also assesses the influences of information flow on managerial decision-making in Universities. The results revealed great and numerous invaluable impact the adoption and application of UMIS has on universities' management decision-making. It offers very high efficiency and unparallel effectiveness in managerial decision-making in universities due to quality information from the UMIS. The result especially depicted better results, improved performance, highly increased productivity, reduced data risk and insecurity, enhanced viability and values, reduced operational headaches and cost, enhanced goodwill and maximized control and flawless attainment of Universities' goals and aspirations with growing scalability and as well successful churning out readymade manpower for the industries and workplaces in Nigeria and across the globe. The major drawbacks are cost, technical barrier, professional demand. power, data accuracy and security breaches, etc.
Keywords: *MIS, Information, Decision-Making, Managerial Decision*

Introduction

Decision–making is one of the very essences of the management and administrators of institutions especially the Universities. Management is often saddled with decision – making in planning, directing, controlling coordinating, financing and staffing functions. The Administrators have to constantly choose what to do, who to do it and when, where and occasionally how to do it. Ideally such decision was often made on the basis of the evidence and information thoughtfully, empirically and appropriately gathered. Quality decisions and its efficient communication are the live wire of every organization like the Universities. Decision – making and

communication errors are mitigations in the universities' wheels of growth and development. This is sky -rocketing at geometric progression due to Information Systems and existing decision supports or tools. These errors are adverse and costly, growing more costly adversely with universities' increasing complexities, population explosion, expanding activities, rising needs and demands of and from Universities. The importance and impact of the decisions depends to a great extent on the research extent, technology, techniques and methodology of gathering the necessary information, processing, evaluating alternatives and selecting a course of action among others called decision.

The Management decisional roles cut across the five resources of every organization, namely man, money machine, material and information. In all these, the management relies on one resource. – The Information. Management needs information in other to make decision. They need information to prepare the strategic, tactical and operational plan of action, to link the different parts of resources of the universities together, to allow certain specific action to happen or others occurring, and to monitor the work of the universities to point out requirements for corrective action or opportunity for improvement. Information is the glue or centripetal force that holds other resources or the organizations together. Quality decisions is a function of quality Information. And quality information is a factor or function of availability of accurate, relevant, complete, up to date, concise processed data. Drucker, (1967) and Simon, (1976), had described the decisional role or the decision-making among interpersonal and informational roles. Osisioma (1999) include as well technical, conceptual, diagnostic, communication, time management. Griffin (2002) saw it as the heart of administrative and management activity. It is also opined that the prime job that lies at the heart of management and the basis of success depends largely on both effective and efficient decision-making as in (Mintzberg, 1973; Alexis &Wilson, 1981; Agwu, 1993). Prior to the era of computing and or information technology (IT), several Information supports for decision-making in the universities were availed from mathematical, statistical, management, psychology, behaviourial sciences, etc. techniques and tools. There was growing call or demand for more and better-quality decisions and its efficient communication especially due to ever-increasing operational complexity, population explosion, unprecedented volume of activities, problems and needs multiplicity, expanding scope of management and advancing administration and operations. Similarly, universities are facing the pressure of growing enrolments, curriculum modernization, shortage of funds and increasing needs of funds, rising demand for materials, growing information explosion, resource allocations, appointment of staff, maintaining educational standard, offering courses as per new demand or need of manpower, etc. which are necessities of a challenging and changing era. Staff development, research and scientific developments are part of the issues that apply pressure to the universities. The increasing complexities of our

universities have continued to make these techniques both ineffective and inefficient for the dynamic and ever-increasing needs of the growing and developing universities. These among others have contributed to serious dwindling performances of universities' administrators and/ or management as well insignificant growth and development of universities.

Hence, universities' have also failed to stand the test of time in this dynamic and fast changing global village in such as speed of decision-making processes and communication due to parity between information needs of the 21st century universities' and information processing tools or techniques especially in provision quality information for quality decisions. It is the underlying premise of this study that the use of most of the aforementioned techniques or supports to provide information for decision-making no longer live the tests of time and are longer in vogue, due to traditional and inherent drawbacks such as clumsy and time consuming, obsolete and outdated, highly error prone and inefficient for a sound, solid, effective and efficient information processing supports for managerial decision-making in 21st century Universities. The deficiencies have core or serious issues and drawbacks mitigating against the growth, development and achievements of universities' goals and activities. It is against these drawbacks and inhibitions that the Universities have shift attention to management information system as messianic panacea for quality information to enable managerial decision. UMIS are common in universities with diverse inscription and status.

Quality Information and its efficient communication and effective utilizations are the live wire of every organization like the Universities. Obviously, poor, inadequate, adverse and inefficient information and as well as inefficient and ineffective information generation, processing, communication system are bane of poor and inefficient decisions. Also poses serious impediments on achievements of the Universities goals and purposes. More recently MIS has risen to the gap of poor-quality information and inefficient information generation, processing and communication for managerial decision-making in the Universities. Hence, the essence of resorting to management information system as pervasive solution for provision or generation of quality information for quality decision-making and achievement of universities goals and activities of the Universities. This study therefore examines the impact of MIS, on managerial decision - making in Universities.

Statement of Problem and Purpose

This is a study of effect or influence of management information system on managerial decision-making in universities. The prevalent information processing and provision tools in universities were derived from mathematical, scientific, management sciences, psychological, behaviourial sciences models. These models were characteristic inefficient information gathering, processing and communication

tools or techniques, inherent with poor communication network, inadequate information provision, and inaccessible quality information for managerial decision-making in universities. The deficiencies have been core or serious issues and drawbacks mitigating against the growth, development and achievements of Universities goals and activities. It is against these drawbacks and inhibitions that the Universities are turning attention to management information system as means of obtaining quality information for managerial decisions. Hence the aim of this study is to examine the impact or influence of management information system on managerial decision-making in universities with the objectives to determine how decisions are made in Universities, the quality of information available for decisions -making in universities, the efficient and effective information flow in universities, the effect of information on universities management in decision -making, effect of quality information on the quality of decisions, the importance of source, content, state of processing and other circumstances on integration of information in decision making universities, effect of information flow climate affect decision-making process, the effect information technology i.e. management information system on availability, processing, quality, communication and flow of information for managerial decision- making. It would also examine the values and benefits off UMIS on managerial decision -making in universities and as well possible misgivings, problems and pains of UMIS on management decision -making in universities.

Theoretical Review of the Study

The Nature of Universities Administrative Work

There are many ways of looking at the task and process of management or administrators. We can look at it as the performance of a set of functions (planning, organizing, controlling etc.), as the process of getting things done through and with people, as a problem solving structure or in any variety of ways (Barnard: 1938: Drucker, 1984; Simon, 1960) However, the most insightful perspective has come from Emery (1970). He defines managing as "the processing of information to obtain results through people". Emery sees the manager as an information processor and communicator. He recognizes that systematic procedures for dealing with problems and decision are essential but believes that the performance of such activities could be broken down to information processing responsibilities. It is this perspective that provides a take off point for this paper. Nevertheless, since no single perspective is adequate to sufficiently capture the essence of managing, we will integrate into it the contributions of Mintzberg (1973) and Drucker (1984). Mintzberg conducted an extensive study of chief executives and at the end concluded that managerial activities can be divided into three groups those that are concerned primarily with interpersonal relationship, those that deal mainly with the transfer of information and those that essentially involve decision making. He thereafter defined managerial work as the performance often roles arising from this grouping. Drucker, on the other

hand sees the work of a manager as consisting of five operations - setting objectives, organizing, motivating and communicating, measurement and developing people. He does not stop there; he insisted that engaging in these operations would result in the integration of resources to achieve a desirable synergy (which is what managing is all about) only with the skillful use of one tool - information. The manager needs information in order to function. If his tasks, as Koontz et.al (1983) contends is "to transform inputs in an effective and efficient manner into outputs" then he must need a wide assortment of information Oettinger (1984) puts it most succinctly when he states that "without information nothing makes sense". Before we derive an operational perspective to managing base on information and decision making, we must bridge the gap between the two. This is necessary since information is in itself neutral and static (Rappaport: 1975) whereas decision making is more or less, a process and an act; we have to consider how information is captured, processed, communicated and integrated into the decision making process - how it is activated, channeled and used for decision making. The overall framework would take cognizance of these aspects.

Decision and Decision-Making Model

Decision is a choice between two or more alternatives or choice of or for action. It is the choices or options from two or more alternatives or options. The moment of decisions arrived – a determination is arrived at after due or several considerations or conclusion reached. Decision is synonymous resolutions, conclusion, settlement, communication, choice, option, selection, ruling, judgement, verdict, findings, recommendations, pronouncement, decree, sentence, order, rule, injunction, results, arbitration, etc., (Pappaport, 1975: Hornby, 1994; Bartlett's Roget's Thesaurus, 1996,) Decision is judgement selected from two or more options or choice made from two or more alternative choices or options. There are different types of decisions namely routine, emergency, adaptive and innovative or virgin decisions. There are three levels of decisions namely strategic decisions often made by top executives i.e. in the University system the Pro Chancellor and the Council, The Vice Chancellor and The Senate, and the University Administration as well as committees attached these arms. The decisions are usually crucial to operation and long term, it is strategic because it defines and focuses on long term goals of the university. The Tactical or Administrative decisions often made by the Administrators or the middle management such as the Deans, Directors Registry, Bursary, Internal Auditor, ICT, Public relation, etc. This resolves unusual problems and develop techniques to improve functions. The Operational or Firstline managers are. the HOD of Departments and units as well as their receptive committees, takes routine decisions involving the daily events or activities, (Drucker, 1967; Gulueck,1980; Alexis & Wilson, 1981; Handy, 1985; Anderson, 2001; Amaefule, 2003)

What is Decision-Making: Decision making is one of the most arduous and herculean tasks of administration of any organization. Nothing is more difficult and more precious than to be able to decide. Organizational progress depends on good, efficient and effective decisions. Decisions could mar or make organization depending on quality. Decision-making is one of the central activities of management and is a huge part of any process of implementation. This is the action or process of making important decisions (Harris, Osisioma. *Decision-making* can be regarded as the cognitive process resulting in the selection of a belief or a course of action among several alternative possibilities. **T**his is a thought process of selecting a logical choice from the available options (Effraim & Jay 1998; Fatamah, 2003;; Power, 2004; Dew, 2014: Abiola, 2014, Tree, 2016). When trying to make a good decision, a person must choose between several options.

Every decision-making process produces a final choice that may or may not prompt action. Decision-making is the study of identifying and choosing alternatives based on the values and preferences of the decision maker. Decision making is precisely a process of developing commitment to course of action. Some decisions are based on hunches (not guesses) and intuition. Experience is the most popular method of decision- making. Problem solving is synonym to decision-making concept. It is a systematic process that focuses on analyzing a difficult situation, and always includes a decision-making step. It is invariably a process whereby a dilemma is identified and corrected. Problem presents unsatisfactory state that needs to be changed to a desired state. The factors which affect the decision-making which include experience and knowledge, creative thinking, self-concept, stress, interpersonal conflict, time available, money and energy, routine verses non routine decisions, risks associated with decisions, critical nature of work, written guidelines, organization "s attitude towards decision-making, amount and kind of information available, degree of acceptance and support and managers" personal ability, etc., (Efraim & Jay, 2005; Baridam, 2015; Lucey, 2010; Modum, 1995).

Universities' Management Information System (UMIS): Impact and Issues

A management information system (MIS) is an information system used for decision-making, and for the coordination, control, analysis, and visualization of information in an organization categorized into three main types: routine, tactical, and strategic. Managerial decision-making is a process aimed at resolving identified problems and enabling effective and efficient performance of organization activities. It is seriously impacting the organizations in provision and processing of universities' vault of data to obtain quality information which decision makers employ for effective, efficient quality decision that impact on organizations' success, performance, productivity, profitability, enhance results, marginal growth and development; and overall result or goal achievements. UMIS help the universities meet its goal by providing its managers with insights into its regular operations so

that they can control, organize and plan effectively. It plays an important role in the performance of the universities managerial decision-making because it provides platform or environment where job to be done according to plan and reporting is based on one click environment.

It churns out information (categorized as routine, tactical, and strategic.) for decision-making, and for the coordination, control, analysis, and visualization of information in an organization. And enables rapid access to up-to-date information from any location, UMIS helps to interpret data patterns, allow teams to collaborate, and facilitate presentation of information tailored to different audiences which enables quicker and more accurate decisions. It produces quality information used to make better and quality decisions that helps managers support ongoing operations. It provides timely, accurate, and relevant information for informed decision-making, leading to better outcomes. It is increasing efficiency and effectiveness in achievement of universities goals. It is enhancing productivity. Performance and achievements of management in decision-making and improving the universities' results and success. Universities are more competitive as it gives room for innovation advancement, growth and development with very scalability index. It improves employees' maintenance, loyalty and work ethics, overall universities performance and efficiency, conquering the boundaries to communication, ensuring clear accountabilities, lowering cost and expanding cost – benefits of decision-making and communication. It offers real-time data and information required to make wise and quality decisions. It automates processes, reducing costs and enhancing performance and productivity. It provides accurate, timely, and relevant data from various sources, such as internal databases, external websites, social media, sensors, and surveys that helps to produce several reports, including schedule, on-demand, exception, and detailed reports with vital indicators used to take corrective action as necessary.

UMIS portrays ability to improve the decision-making process both quantitatively and qualitatively resulting in better decisions reached more quickly. Integration ability of communications linkages to connect the various work locations, universities community, clients and contractors and even may link its employees' homes through direct computer and telecommunications hook-up. It helps the Universities extract actionable insights from its records to guide decision-making. Revolutionization of record keeping practices and reporting methods is another impact of MIS. Some good progress has been made towards developing means for generating large quantities of data and information that are differentiated for specific decision-making situations. Also, the fact that electronic information handling systems are assuming certain routine decision making tasks, reduces the need for personnel information handling. Generally speaking, UMIS improves data management and data accuracy, increases the management and universities performance and productivity, ensures better decision-making, enhances quality

decision and information as well report communication, streamlines activities and processes, ensuring cost savings and reduced error, enhance cost - effectiveness, improves human resources performance, reduced maintenance and manageability chores,

It increases managerial performance and productivity 'intelligence that can perform many diverse functions that normally tie up valuable executive time and effort. It Increases in the ability of an executive to collect and utilize data from remote locations, or to disseminate material to such locations. And offers stability of format of information processed, communicated and received without alteration or change. UMIS offers tremendous improvements in the communication of management information and linkage of the various elements of an executive's job, thus eliminating the tedious and often error-prone intermediate stages in the collection, processing, transfer and or storage of information. Creating the possibility of greater flexibility in terms of working conditions and locations. It generates real-time performance reports or information and analytical records, provides comparative projections and performances as well as enhancing the work allocation process and internal report. UMIS improves data accuracy and quality information for decision-making, facilitates coordination and offers tremendous human resource performance It makes communication of information and results almost seamless, resultingly this capability has inescapably influenced universities formation structures. Evidently, there is a strong positive and progressive correlation between MIS and the quality of information, quality of managerial decisions, performance and productivity and efficiency and effectiveness of achieving universities goals with variations in the independent variables - relation management and financial management information.

Information Communication and Managerial Decision - Making

This is attempt to establish a definite link between information and managerial decision making and also expound on how management communicate or managerial communication. It examines the specific attributes of information necessary for effective decision making; discusses linkages and impacts and bring out the centrality of the communication structure while attempt to elaboration on informational approach and framework for decision making. Minztberg (1973), stated that a manager gets or seeks information in order to detect changes to identify problems and opportunities, to builds up knowledge about his milieu, to be informed when information must be disseminated and to make decisions. Alexis and Wilson (1967) opined that in any situation decision to be made, a manager usually would respond to a particular problem in proportion to the volume, nature and strength of the information and communication availability. They further opined that the quality of decisions would depend on the quality of information available to the decision maker. Edmunds (1959), similarly professed that the Handy information availability determines "the reach of an executive 'Obviously speaking, a direct relationship is

being established to exist between good information and good effective decisions. What is "good information" and what is "effective decision" and their relationships. According to Dean (1963) information to be considered good for decision making purposes, should possess four quality namely: correlated, consistent, current and complete. while S a fifth – concise was latter added. Reddin (1978) asserted that information should be relevant timely, accurate and well presented. In addition, conception of good information has been characterized by relevance, accuracy, adequacy, conciseness, timeliness and appropriateness of presentation. Relevance connotes that information should reflect and be appropriate to the decision-making situation and the needs of the recipient or user. Accuracy implies an acceptable ratio of correct information i.e. the total amount of information. This has to do with the purpose, clarity, precision, cost and speed involved. Good information should be comprehensive and complete, providing the manager with all the facts needed to make a decision. Additionally, should be sharp, brief, to the point; that is concise. Information should also be available at the time it is most needed and useful and at the right frequency. The nature of presentation of information is also important as it determines how effective it is explicit and integrated into the decision-making process.

Similarly, the quality of information is related to the communication structure. Leavitt (1985) asserted that the structure and design of a communication system is central importance in controlling the reliability and availability of information. Selectivity in observation and transmission characterizes all information received by a decision unit. A good communication system prevails and prevents effectively against bias, doubts, error, distortions and disturbance (Cherry: 1987). It also provides for multiple flows to a given decision unit so that it can compare and screen the information for consistencies and sharp differences as deduced in (Alexis and Wilson 1967). However, the communication system must be such that it makes information easily accessible to decision units, easy to obtain and speedily available in form and at the right time. Hence, the peruse of decision-making process, the criteria for effectiveness and the impact of information on them. An examination of processes of decision making and the determinants of effective decision making reveals the impact or vitality and influence of information in managerial decision making. It is information and its flow that leads to a problem being identified and provides the necessary guidelines for clear problem definition and objectives setting. Problem analysis, generation and evaluation of alternatives and even the actual choice all depend on information and its manipulation. And of course, the choice becomes another kind of information that provides the key to implementation. Hence, Emery (1970) depicted to see the entire managerial decision-making process as no more than information processing and analysis. However, a model linking information, communication and decision making has been developed by Ference (1970).

On the issue of effectiveness, information enters as standards, measures and assessment variables purpose has to be define and outcomes assessed in terms of information, goals and objectives have to exist as information against which compatibility is determined arid the optimality with which resources are utilized can only be measured against standards. Drucker (1977) contends that good information enables a clear focus on what the decision is all about, an exploration of a wide variety of approaches and building of effective execution into the decision-making process. In fact, every decision is as good as the information on which it is based. Information and communication systems supply the information that managers need in order to make decisions and when information is presented to the form and need of the decision makers, the more qualitative the decisions made. A decision made by a manager is a function of his own view or understanding and view is evoked in him through the system of information. The system "blue print" of the manager's views is the information base including the nature of the information and data stored, the logical storage structure and the models which are used to manipulate them. Above all, the information system and communication structure determine the climate of operation and decision making. Without information and a suitable information and communication system, effective managerial decision making will most probably be impossible.

Practical Justification for the Management Information System

An attempt at the effort of justifying the establishment of a management information system for universities (General or Technical, Public (Federal or State) or Private) may proceed along the following lines. The service universities of the 21St century will require may be categorized thus:

(a) Managerial, planning, control, co-ordination
(b) Administrative
(c) Communication

(a) Managerial, Panning, Control, Coordination.

The Universities management is essentially concerned with planning and control of the resources of the institution, with a view to the attainment of set objectives. Planning is concerned with a delineation of goals and the formulation of decision models for selecting means of achieving those goals. Control on the other hand is regulation of activities within the Universities so that they are in accordance with the expectations established in policies, plans and targets. And coordination is putting the various activities of Universities into equal and important relation. Crucial to the planning, coordination and control decisions of management, is information. Good decisions are based on information that is timely, relevant, complete and up to date, properly presented, problem solving and forward looking. And there comes the challenge and or need for management information system.

(b) Administration

A sample of the process of the administration chart will exhibit the following:

- Council Chairman (Council and Sub Committees)
- Vice Chancellor's office (Senate, "UMC, Security, Transport, Works, MICTU, Audit, etc./)
- Registry (Admissions, Registration, Examinations, Personnel programmes (Degree regular, Sandwich, Postgraduate (Staff Quarters, Recruitment & promotions.))
- Bursary (Accounts, Cash office, Audit, Stores, Inventions & Records, Payroll,)
- Library (Cataloguing, Serial, Reference, Word processing support (WPS))
- Deans (Department and Word processing supports (WPS))
- Other Departments /Sections (Students hostel & Accommodation- WPS)

c) Communication

Communication is the process of maintaining an uninterrupted flow of orders, instructions, questions, responses, explanations, ideas and suggestions between top management and the rest of the organizations. (Osisioma & Osisioma, 1999) We may classify communication as internal, external and a mixture of the two.

Internal —

- Heads of units, internal members of council, principal officers may wish to communicate on official matters among themselves and with the Vice Chancellor or Registrar, Bursar. For meetings that involve highly structured data, Tele-conferencing and video conferencing techniques may be used.
- The Vice Chancellor should have electronic access to each senior member of staff and the University key offices. (Each of them should own an e-mail address and WhatsApp acount)
- Academic staff certainly would wish to have electronic access to colleagues, the library and a central computing unit set up in other institutions, global databases centers of research and teaching.

External

- Academic staff, especially, frequent access to resources held in foreign stores such as libraries and internet sites. They need to communicate with fellow members of their academic associations.
- The Vice Chancellor needs to communicate with the National University Commission, various ministries, UNESCO, ASUU, NASU, NAAT, SSANU, SUG, The mode of communication with these bodies will always be determined by and driven by advances in information technology (WhatsApp, e-mail, diskette copies, CD, Online, pdf documents, etc.) google forms reports etc on the Internet

Management Information System (MIS) Conception and Design

MIS has not yet received consensus or generally and universally accepted definition among the authors and computing professionals. However, this study has adapted Mcloed (1995) which opined that management information system (MIS) is an organized means of providing managers with the information they need to do their jobs effectively. This includes internal and external information relating to an organization's past and present, as well as projections of what is likely to happen in the future. The purpose of an MIS is to furnish information within a workable time frame so that managers can make the best decisions concerning the planning, control and operation of their organization's activities. A critical examination of this definition is depicting as follows:

- **Organized means**. The parts of an MIS work together in well-coordinated fashion so that the system efficiently provides needed information.
- **Internal and external information**. An MIS must provide information about what's happening both inside and outside the organization
- **Past, present and future**. The MIS must provide information that reveals where the organization has been, where it is now, and where it's likely to be in the future.
- **Workable time** frame. An MIS must be responsive, that is, provide its information quickly. A slow response can mean a missed opportunity.
- **Decision making**. By providing needed information, the MIS helps managers make the decisions for which they are responsible.
- **Planning, control, and operation**. An MIS helps managers manage her basic functions of planning, control and operation. Therefore, the MIS is an aid in planning what to do, executing plans, and controlling activities to ensure that plans are carried out.

System Design of Model

System design elements of a system i.e. modules, architecture, components and their interfaces and data for a system based on the specified requirements with specific needs and designs are presented. Design objectives are the functional and non-functional qualities of a design. These are often stated as goals for what a design is meant to achieve. The UMIS design shows information flows functional relationships, and rudiments of managerial decision-making information processing below.

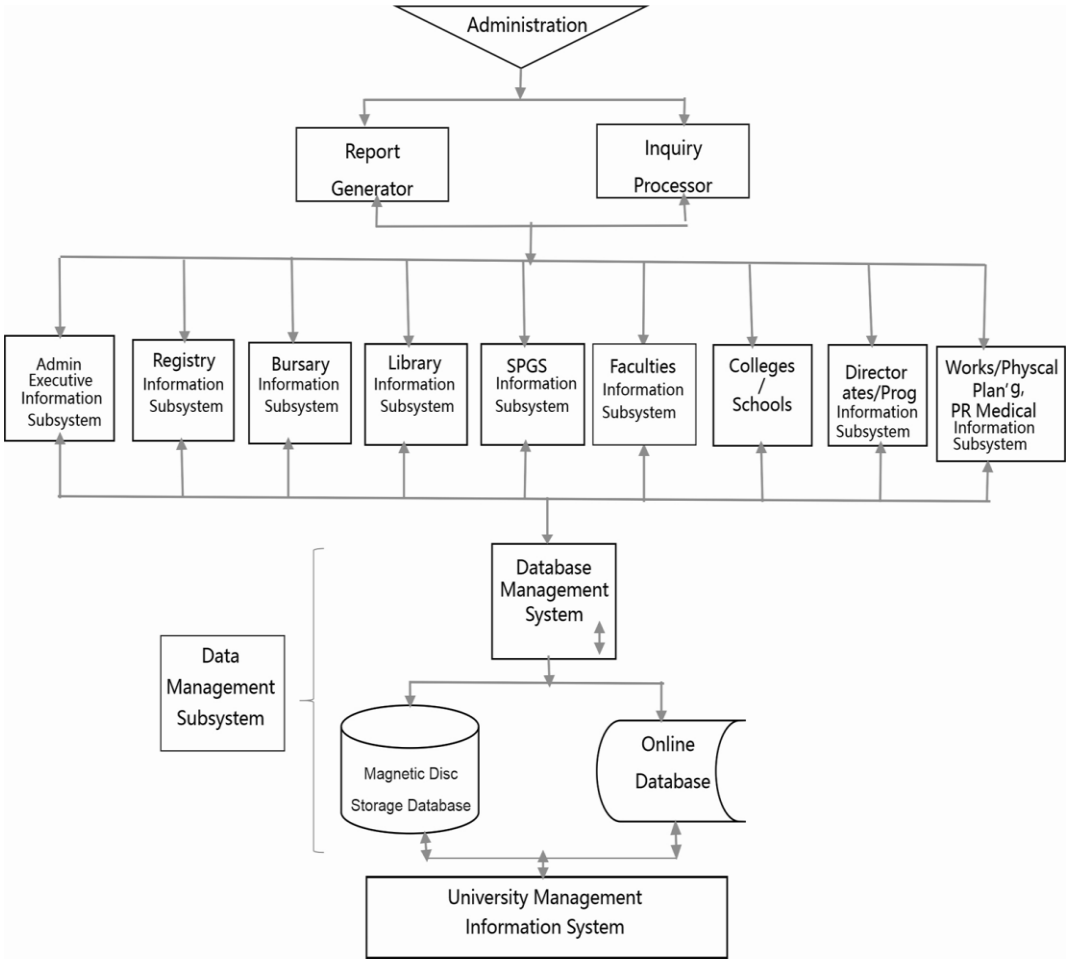


Figure 4.1: Multi-Model University Management Information system

The University Management Information System (UMIS) Model

The Figure 4.1 is typical Multi-Model University Management Information system organized to provide valuable, timely, accurately and adequately needed internal and external information relating to the University's past, present and future projections to management of the University at all level for effective performance in their respective daily and routine responsibilities. The UMIS would furnish information within a workable time frame so that it could be effectively used to make best decisions concerning planning, control and operation of the University activities. The UMIS strictly provides information to the University Management and their subunits or committees only. The UMIS consists of the following modules: Organizational Problem Solvers (Administration or Management), Report Writing Software/ Report Generator provide the requested information in the right form, the

Inquiry Processor which also houses the Mathematical or other Models called model subsystem. The model actually provides solution for the respectively inquired problem or information. There is Data Management System environment which consists of the Database Management System (DBMS) and Database environment (Internal and External). The figure 4.2 depicts the Internal structure or view of the Multi-Model Management Information Systems.

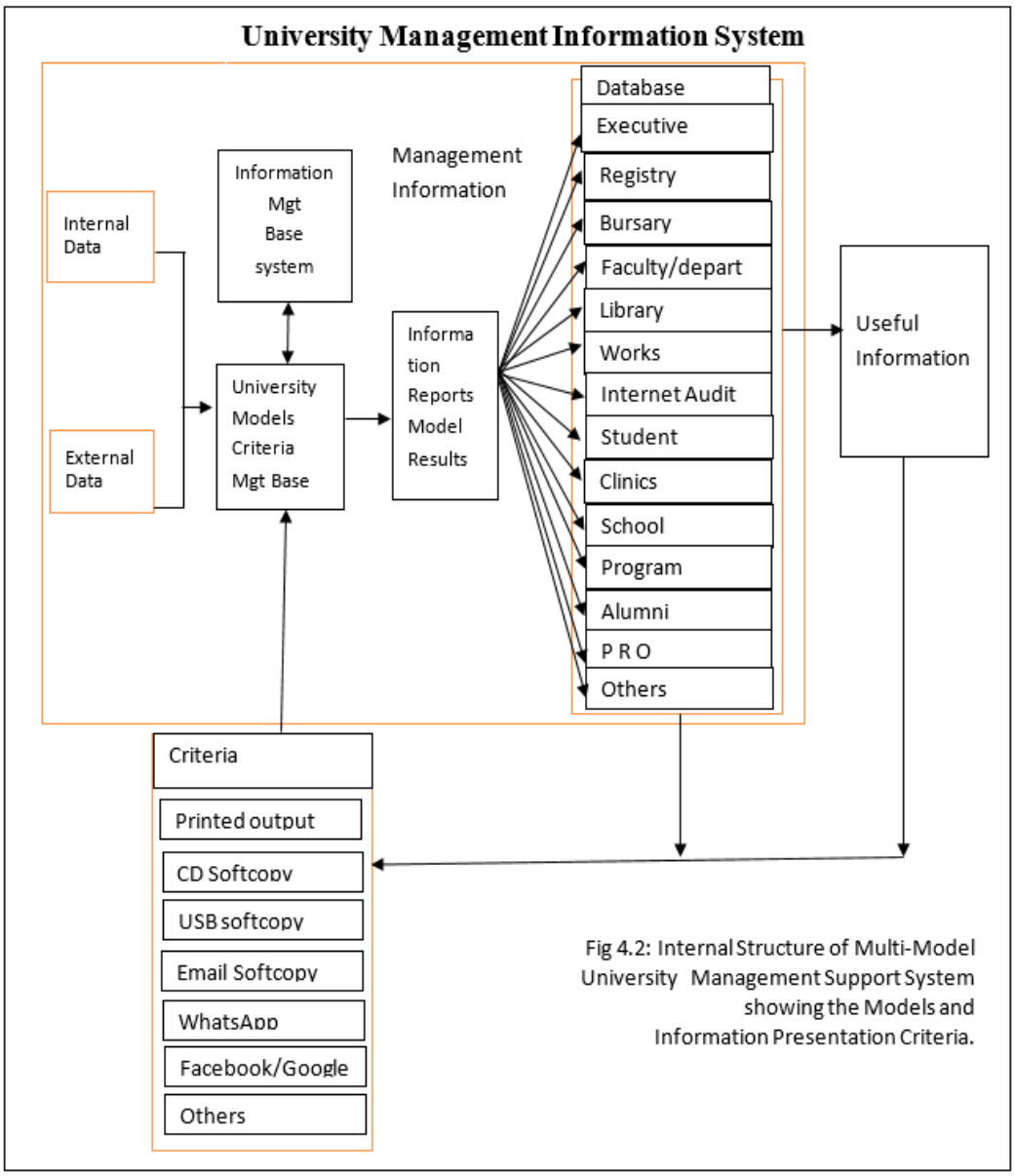


Figure 4.2: The Internal View of Multi-Model Management Information System (UMIS)

Findings and Results

i. The study revealed very poor, inefficient and clumsy decision-making tools implored by the management in making decisions in the Universities prior to the era of information technology which ushered in the management information technology has that witnessed tremendous and trending improvement in managerial decision making in the universities.

ii. The quality of information available for decisions -making in universities has improved.
There is unprecedented landmark achievements and success on improvement of quality of information available to the management for decision-making in the universities due to availability and use of management information system as against the poor information due to inefficient information gathering, processing and communication tools or techniques as well as poor or absence of communication network facility

iii. The study revealed the great importance management attached to source, content, state of processing and other circumstances on integration of information on decision-making in universities, this factor has enhanced its reliability, acceptance and adoption. management attaches importance information with respect to these issues.

iv. And that the information flow climate effects on decision-making process in the universities among the decision makers is extraordinarily friendly, relational, common and encouraging unlike the era without MIS that was pervaded with hoarding, delay, insufficient and denial of right information for efficient decision-making

v. The information flow climate in universities especially among decision-makers is cordial and relational, positively enhanced by efficient communication platform provided by UMIS influences of decision-making process, cushioning or extirpating the practices of information hoarding, delay and denial

vi. It was revealed that MIS provides efficient and effective information flow in universities. With the numerous computer-based systems scattered across the universities' Depts, units and offices, interconnected and linked to the MIS network, it was easy and flexible to communicate and exchange information and as well access needed data to process information for decision-making.

vii. The information flow climate in universities especially among decision-makers is cordial and relational, positively enhanced by efficient communication platform provided by UMIS influences of decision-making process, cushioning or extirpating the practices of information hoarding, delay and denial

viii. MIS is veritable, reliable and efficient sources of quality Information for managerial decision-making. The study revealed that MIS increased the intrinsic quality of decisions and their acceptance through availability, processing, quality and flow of information for managerial decision- making. Hence management concentrates more to better their operational performance and productive

activities that would eventfully improves the universities performance, productivity, viability, visibility, relevance, growth and development and achieving of goals.

ix. The values include rapid access to up-to-date information from any location, enabling quicker, more accurate decisions, help interpret data patterns, allow teams to collaborate, and facilitate presenting information tailored to different audiences, produce information to make better decisions helps managers make effective decisions to support ongoing operations, provides timely, accurate, and relevant information for informed decision-making, leading to better outcomes, increasing efficiency and effectiveness, automates processes, reducing costs and enhancing productivity, provide accurate, timely, and relevant data from various sources, such as internal databases, external websites, social media, sensors, and surveys, help produces several reports, including schedule, on-demand, exception, and detailed reports.

x. The study further affirmed great impact of quality information from the MIS on universities management in decision -making and hence that quality information is directly proportional to quality decisions. It further professed that the effect information technology i.e. management information system on availability, processing, quality and flow of information for managerial decision- making is extra ordinarily vital and invaluable.

xi. The misgivings, problems and pains of the MIS in universities decision-making revealed to include high cost of MIS implementation, technical barrier and professional demand, demand of data accuracy, data security concern and dependence on power

Conclusion

University Management Information System (UMIS) is seemingly the panaceas to overwhelming Information vault overload and the information demand of ever-increasing complex, explosive population and rising demand of information of activities in universities. UMIS is an important tool that universities use to collect, store, organize and utilize large amounts of data, thereby enabling improved efficiency, accurate reporting and informed, efficient and effective decision-making. UMIS is an information system that churn out quality information used for decision-making, and for the coordination, control, analysis, and visualization of information in an organization categorized into three main types: routine, tactical, and strategic. Managerial decision-making is a process aimed at resolving identified problems and enabling effective and efficient performance of Universities' activities. It is seriously impacting the organizations in provision and processing of universities unprecedented volume of data to obtain quality information which decision makers employ for effective, efficient and quality decision that impact on universities' success, performance, productivity, profitability, enhance business results, marginal growth and development; and overall result or goal achievements.

UMIS help the universities meet its goal by providing its management with insights into its regular operations so that they can control, organize and plan effectively. It plays an important role in the performance of managerial decision-making because it provides platform or environment where job to done according to plan and reporting is based on one click environment. There is strong positive and direct correlations between the quality information provided by the UMIS for the decision-making and the quality of decision made by the Universities managers which are having tremendously impact on the universities. It is sufficing therefore to state that the trending explosive quality information and its communication, quality and efficient decisions, high performance, increasing productivity, better and progressive activities results, heightening enhanced viability and values, reduced data risk and insecurity, reduced operational headaches and cost enhanced goodwill and maximized control, flawless administration or management of universities, efficient and effective attainment of goals of the universities among others are glaring impact of the universities Management Information System(UMIS). The findings revealed very high efficiency and unparallel effectiveness in managerial decision-making in universities which directly impacts on total universities achievements due to quality information precipitating from the Universities management information system. The major drawback are cost, technical barrier and professional dependence on power and data accuracy especially.

Reference

Abiola Richard o, Retrieved, (2003), " Effects of Information Systems on the efficiency and Profitability of Banks in Nigeria", *ICAN Students Journal*, October/ November

Agwu A, (1993), *Management: An Introduction and the Nigeria perspective*, Enugu, Precision Printer & PubAlexis M and Wilson T (1967), Organizational Decision-making, New Jersey, Prentice Hall

Amaefule, Chinedu S. (2003) 'Computer Based Support Systems for Universities in Nigeria," *Knowledge Review* Vol. 7, Oct. 2003.

Anderson G, (2001), *Data Processing & Information System*, System, London, Macdonald & Events Ltd Baridam, D. M. (21995), *Business: A Management Approach*, Port Harcourt, Paragraphics

Bernard C.I. (1968), 'The Functions of the Executives" Cambridge, Massachusetts, Howard University Press Cherry, C. (1987), *On human Communication*, 6th.ed, New York, John Wiley & Sons

Dean Buntrock. (1970), Waste Management, New York, Waste Management Inc Press

Dew John Robert, (02014), "Consensus Based Decision -making", www.google.com/search

Donald A., (1979). *Management Information and Systems*, Oxford, Pergamon International Library, Pergamon Press.

Drucker, P.F. (1967), 'The Effective Decisions', Harvard Business Review, Jan-Feb 1967

Drucker, P.F. (1984), *Management Tasks Responsibilities, Practices*, New York, Amazon.

Effraim, T and Jay E. A, (1998), Decision Making, Systems, modelling and Support in Decision Support Systems and Intelligent Systems, Prentice -Hall, Upper Saddie, River, NJ.

Emery, C. (1969), Organization Planning and Control Systems, Theory and Technology, New York, Macmillian

Fatamah Badder (Retrieved, 2022), "Critical Elements in Problems Solving and Decision Making, https://www.google.com/search?

Ference, T.P. (1970), "Organizational Communication Systems and the Decision Process, Management Science, October.

Gore, W. {1984), *Administrative Decision Making*, New York, John Wiley & Sons, Inc. Greenwood N. T. (1969), *Decision Theory and Systems*, Cincinnati, South Western Publishing Company

Griffin, Danallie, (2002), *Decision Making Management*, Mass, New World Press

Harris, R. (1998), Decision Making Techniques, http://www.mind tools.com/ pages /main/new MN TED.htm#models

Heller, F.A. (1991*), Managerial Decision Making*, London, Taristock

Koontz, H.C. Donnell, O. and Weihrich, H. (1983), Management, Tokyo, McGraw-Hill

Leavitt, H.J. (1985), Managerial Psychology, Chicago, University of Chicago Press

Lucey, T., (2016), *Management Information System*, London, DP Publication Limited

Mcleod (1995), *Decision support system in Management Information System*- A study of Mintzberg, H. (1973), *the nature of Managerial Work*, New York, Harper and Row.

Modum Uche (2005), *Management Information System: Analysis and Design*, Enugu, Fourth Dimension Publishing Co, Ltd.

Murdrick, R. G. (1000), *MIS Concept and Design*, Englewood, Cliffs, N. J. , Prentice Hall, Inc.

Okoye, P,V,C. and Adigwe, P.K. (1998), *Management information System*, Enugu, Snaap Press LTD

Osisioma, B. C. (1977), 'An Overview of the Strategic Management Process' Management \Workshop, Integrated Business Systems, Press.

Osisioma, B. C. & Osisioma, H. (1999), *Management Practice; Manual for the Professional Management Students* JBH publications, Jos, Nigeria.

Oettinger, A.O. (1984), "Information Resolution Building Blocks and Bursting Bundles" Report of the Centre for Information Policy Research Harvard University,

Power, D.J. (2004), "Decision Support Systems from Past to the Future," Proceedings of the 2004

Americas Conference on Information Systems, New York, Ny, August6-8 2

Reddin, B, (1978)," Information you Need As A Manager", *Management in Nigeria*, Vol. 14, 10, Oct.

Rappaport, A.(1975), *Information for Decision-Making*, New York, Industrial Comm Council

Simon, H. A. (1976), "Decision Support System," *Decision Support and Business Intelligence System*, Prentice- hall, Inc

Slotnick, D.l., Butterflied, E. M, Colantonia, E,S., Kopertzky, D.J. and Slotnick J.K. (1989), *Computers and Applications*, Massachusetts, D.C. Healt and Company.

Tree Bressen, (2016), "Consensus Decision", www.google.com/slideserver, Retrieved 092024.