

The Need For Introducing Decision Support System (DSS) In Nigerian Universities Management And Administration.

Igwe Sylvester Agbo¹, Nwele Anamelechi Ogai²

1. Directorate of Information and Communication Technology (ICT)/Research Centre, Ebonyi State University, Abakaliki – Nigeria.
2. Department of Public Administration, Ebonyi State University, Abakaliki – Nigeria.

*correspondence author: gladnweze@yahoo.com

ABSTRACT:

Decision support system (DSS) is a computer-based information system that supports business or organizational decision-making activities. Management and Administration deals with the organization and mobilization of human and material resources in a particular system for the achievement of identified aims and objectives in the system. Decision making is an essential leadership, management or administrative skill. DSS serve the management, operations, planning levels of an organization and help to make decisions, which may be rapidly changing and not easily specified in advance. Decision support systems can be either fully computerized, human or a combination of both. Decision support systems are gaining an increased popularity in various domains such as business, engineering, military, medicine as while as administration and human resource management. They are especially valuable in situations in which the amount of available information is prohibitive for the intuition of an unaided human decision maker and in which precision and optimality are of importance. We explained administration and management as it patterns to education, briefly discuss types of decision support systems, components of DSS, qualities to be considered when building a Decision support system for Nigerian university administration. Finally, its roles in decision making as it patterns to administration of Universities in Nigeria if introduced. The paper concluded with strong opinion that DSS should be introduced in Nigerian universities administration and the administrators trained to make use of it because of its significant roles to educational administration.

Keywords: Administration, Decision, Management, Support system, Universities

Introduction

The development of Decision Support System and use of information system in the public sector is becoming a high priority in many organizations. Applications of the manual methods to public organizations have the potential to lead to failure of Administrators information system, as well as wast of financial and human resources. Although very common to every Nigerian university administrator, it is often inappropriate for an organization such as Universities to depend entirely on, because of its failure to address all the goals and objectives of such organizations. Decision Support Systems are also sometimes transaction based systems that seeks to summarize data for routine managerial decision making. Decision support system provides highly flexible modeling frame work that allows the decision maker, administrators or policy analyst to address unstructured and non-routine managerial problems. It includes knowledge-based systems. A properly designed DSS is an interactive software-based system intended to help decision makers or administrators compile useful information from a combination of raw data, documents, and personal knowledge, or business models to identify and solve problems and make decisions.

The concept of decision support has evolved from two main areas of research: The theoretical studies of organizational decision making done at the Carnegie Institute of Technology during the late 1950s and early 1960s, and the technical work on Technology in the 1960s, (Keen, P. G. W. (1978). It is considered that the concept of DSS became an area of research of its own in the middle of the 1970s, before gaining in intensity during the 1980s. In the middle and late 1980s, executive information systems (EIS), group decision support systems (GDSS), and organizational decision support systems (ODSS) evolved from the single user and model-oriented DSS.

The definition and scope of DSS has been migrating over the years. In the 1970s DSS was described as "a computer based system to aid decision making". In the late 1970s the DSS movement started focusing on "interactive computer-based systems which help decision-makers utilize data bases and models to solve ill-structured problems". In the 1980s DSS should provide systems "using suitable and available technology to improve effectiveness of managerial and professional activities", and end 1980s DSS faced a new challenge towards the design of intelligent workstations.(Henk G. Sol et al. (1987).

The advent of better and better reporting technologies has seen DSS start to emerge as a critical component of management tool. Examples of this can be seen in the intense amount of discussion of DSS in the education

environment in developed countries.

Management, Administration, and Decision making in Educational Institution

Management is an integral part of any education institution, the survival and success of Nigerian universities depends largely on the quality of management and administrative services available. Management is the organization and mobilization of human and material resources in a particular system for the achievement of identified aims and objectives in the system, Adesina (1990). Educational administration logically involves arranging, using human and material resources and performance available for transmitting of skills, knowledge, vocation and culture through efficient teaching, learning, research, management, its dissemination and utilization for a better society, Bosah(1998). The National policy on Education ,(2004:55) states that the success of education is hinged on proper planning, efficient administration and adequate planning. Administration and Management deals with planning, organizing, directing, co-ordinating and controlling, Fayol(1980).

Administrators play a key role in planning, managing and organizing an institution (Nigerian universities). Their equally motivate and control other functions in the educational environment, such as directly overseeing other employees. Usually, administrators handle the business aspects of the university, such as finance or other executive areas and have decision making authority. Administration has to do with the setting up of objectives and crucial policies of every organization. It also follows that administration makes the important decisions of an enterprise in its entirety. The decisions of an administration are shaped by public opinion, government policies, and social and religious factors. In administration, the planning and organizing of functions are the key factors. It may be defined as a system of efficiently organizing people and resources, so as to make them successfully pursue and achieve common goals and objectives. At the college or university level in Nigeria, they are Deans, department chairpersons(Head of departments),Directors etc.An employee in a manager position executes the policies and procedures that the administration decides. Management is a subset of administration and carries out their job responsibilities based on the direction of the administrators within the school. However, both types of positions have decision making authority. Academic administration is a branch of university or college employees responsible for the maintenance and supervision of the institution and separate from the faculty or academics, although some personnel may have joint responsibilities. Some type of separate administrative structure exists at almost all academic institutions, as fewer and fewer schools are governed by employees who are also involved in academic or scholarly work. Many senior administrators are academics who have advanced degrees and no longer teach or conduct research actively.

Decision making is an essential leadership or administrative skill. A good educational administration should learn how to make timely, well-considered decision for well-deserve success. It is then the process by which education administrators responds to opportunities and threats that may confronts the institution by analyzing options and making determinations about specific organizational goals, objectives and courses of certain actions. Due to the critical nature of Educational Administration and management, the Administrators needs a helping hand (Decision Support System) for effective and efficient Decision making. When the Leaders (University Administrators) falls, the entire system falls. Hence the need for introduction of DSS in Nigeria university administration and management.

Key administrative responsibilities (administrative units) in academic institutions include:

- ✓ Admissions
- ✓ Supervision of academic affairs such as hiring, promotion, tenure, and evaluation (with faculty input where appropriate).
- ✓ Maintenance of official records (typically supervised by a registrar).
- ✓ Maintenance and audit of financial flows and records.
- ✓ Maintenance and construction of campus buildings (the *physical plant*).
- ✓ Maintenance of the campus grounds.
- ✓ Safety and security of people and property on the campus (often organized as an office of public safety or campus security unit).
- ✓ Supervision and support of campus computers and network (information technology).
- ✓ Fundraising from private individuals and foundations ("development" or "advancement")
- ✓ Research administration (including grants and contract administration, and institutional compliance with federal and state regulations)
- ✓ Public affairs (including relations with the media, the community, and local, state, and federal governments),Kenezovich(1975).

All people need to make decisions from time to time. Given limited time in formulating policies and addressing public problems, public administrators must enjoy a certain degree of discretion in planning, revising and implementing public policies. In other words, they must engage in decision-making (Gianakis, 2004). Over the years, many scholars tried to devise decision-making models to account for the policy making process.

Nigerian university system management portal

According to Paul (2012), the **Nigerian University System Management Portal (NUSMAP)** is a **Decision support system designed by Gucci. Chis Nig. Ltd. It is a DSS** or software for the efficient management of universities in Nigeria. It helps in managing and keeping updates of both university human resources (personnel) and physical infrastructures. **NUSMAP** is an online application, designed for the use of the Universities to process and communicates data between them and NUC. It captures the activities of all the directorates of the commission, which includes Universities Programmes, Accreditation, Universities Academic Standards, University System Annual Review Meeting (USARM), Universities Research and Innovation, Finance and Budget etc. The portal has facilities to harness and generate all reports in the key NUC programmes. It will enable the universities generate and share information with NUC, public and other government agencies on:

1. Enrolment/Statistics
2. Academic programmes
3. Physical facilities
4. University Geographic Information System.
5. Budgets and Expenditures
6. Staff information
7. Student information
8. Research and Innovations.
9. Information Help Desk.

The Portal (NUSMAP) is the best solution for harnessing all relevant data of all universities in the country, which had hitherto eluded education planners or managers. NUSMAP is running and has been tested by some universities. The 2012 USARM format and Information Help Desk are included in the system. The public can seek NUC assistance online in issues relating to students and staff information, university and course status etc.

The Academic world has gone beyond the era of planning without data. Education planners and regulators can also no longer accept unverifiable, if not questionable data from universities. This software is designed to achieve data integrity.

The implementation of this system will put to rest the numerous challenges faced by the universities in harnessing their data for academic planning and, in the long run, improve their ratings. **Adingwupu Paul(2012)** NUSMAP User guide.

Types of decision support system

According to Power, D. J. (2002) and Gachet, A. (2004), Decision support systems can be grouped as follows;

- ✓ **Communication-driven Decision Support System:** This supports more than one person working on a shared task.
- ✓ **Data-driven Decision Support System:** Data-oriented DSS emphasizes access to and manipulation of a time series of internal company data and, sometimes, external data.
- ✓ **Document-driven Decision Support System:** manages, retrieves, and manipulates unstructured information in a variety of electronic formats.
- ✓ **Knowledge-driven Decision Support System:** provides specialized problem-solving expertise stored as facts, rules, procedures, or in similar structures.
- ✓ **Model-driven Decision Support System:** emphasizes access to and manipulation of a statistical, financial, optimization, or simulation model. Model-driven DSS use data and parameters provided by users to assist decision makers in analyzing a situation.

Component of decision support system

According to Sprague, R. H. and E. D. Carlson (1982), Cummings, McCubbrey, Pinsonneault, Donovan (2000), Marakas, G. M. (1999), Three fundamental components of a DSS architecture are as follows;

1. The database (or knowledge base),
2. The model (i.e., the decision context and user criteria), and
3. The user interface.

Classification of Decision Support system

There are several ways to classify DSS applications. Not every DSS fits neatly into one of the categories, but may be a mix of two or more architectures.

Holsapple and Whinston classify DSS into the following six frameworks: Text-oriented DSS, Database-oriented DSS, Spreadsheet-oriented DSS, Solver-oriented DSS, Rule-oriented DSS, and Compound DSS.

A compound DSS is the most popular classification for a DSS. It is a hybrid system that includes two or more of the five basic structures described by Holsapple and Whinston.

The support given by DSS can be separated into three distinct, interrelated categories: Personal Support, Group Support, and Organizational Support.

Qualities to be considered when developing Decision support systems for an organization (Nigerian university).

- A. Adaptable & Flexible
- B. Interactive and ease of use
- C. Interactive and efficiency
- D. Human control the process
- E. Ease of development by end user
- F. Modeling and Analysis
- G. Data Access
- H. Stand alone Integration & Web Based
- I. Support Varieties Of Decision Process

Role of Decision support system in Nigeria Universities administration

The purpose of a DSS is to transform data from manual forms into information that is useful in decision making. DSS is extensively used in business and management. Executive dashboard and other business performance software allow faster decision making, identification of negative trends, and better allocation of business resources. Due to DSS all the information from any organization is represented in the form of charts, graphs i.e. in a summarized way, which helps the university management to take strategic decision.

A growing area of DSS application, concepts, principles, and techniques is in agricultural production, marketing for sustainable development. For example, the DSSAT4 package, developed through financial support of USAID during the 80's and 90's, has allowed rapid assessment of several agricultural production systems around the world to facilitate decision-making at the farm and policy levels. (Stephens, W. and Middleton, T. (2002)) and The Decision Support System for Agrotechnology Transfer(www.icasa.net/dssat/). Hence, there is need to introduce Decision system in Nigerian universities faculties of Agriculture extension, production and marketing. It will equally enhance efficient production, marketing for sustainable development and also facilitate decision-making at the farm and policy levels in Nigerian universities faculty of Agriculture extension, production and marketing.

DSS are also prevalent in forest management where the long planning time frame demands specific requirements. All aspects of Forest management, from log transportation, harvest scheduling to sustainability and ecosystem protection have been addressed by modern DSS.

Other benefits of Decision support system to Nigeria universities are;

- Improves personal efficiency
- Speed up the process of decision making
- Increases organizational control
- Encourages exploration and discovery on the part of the decision maker
- Speeds up problem solving in an organization
- Facilitates interpersonal communication
- Promotes learning or training
- Generates new evidence in support of a decision
- Creates a competitive advantage over competition
- Reveals new approaches to thinking about the problem space
- Helps automate managerial processes
- Create Innovative ideas to speed up the performance
- Eliminating value chain activities
- Solve semi-structured & Unstructured problems
- Support To Managers At All Levels

- support Individual and groups
- Inter dependence and Sequence Decision.
- Support Intelligence, Design Choice.

Conclusion

This work is of strong view of introducing Decision support system in Nigeria universities and their Administrators expose and trained to use it for effective and efficient decision making. This is because of complexity and highly diffused nature of the educational goals, limited resources, individual, employee and national demands on educational institutions, steady aggravated enormous resources waste and shortage of teachers and teaching aids. The main product of an interaction with a DSS is insight. As many of Nigerian university administrators (intended users) are often managers or administrators who are not computer-trained, DSSs need to be equipped with intuitive and easy-to-use interfaces.

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