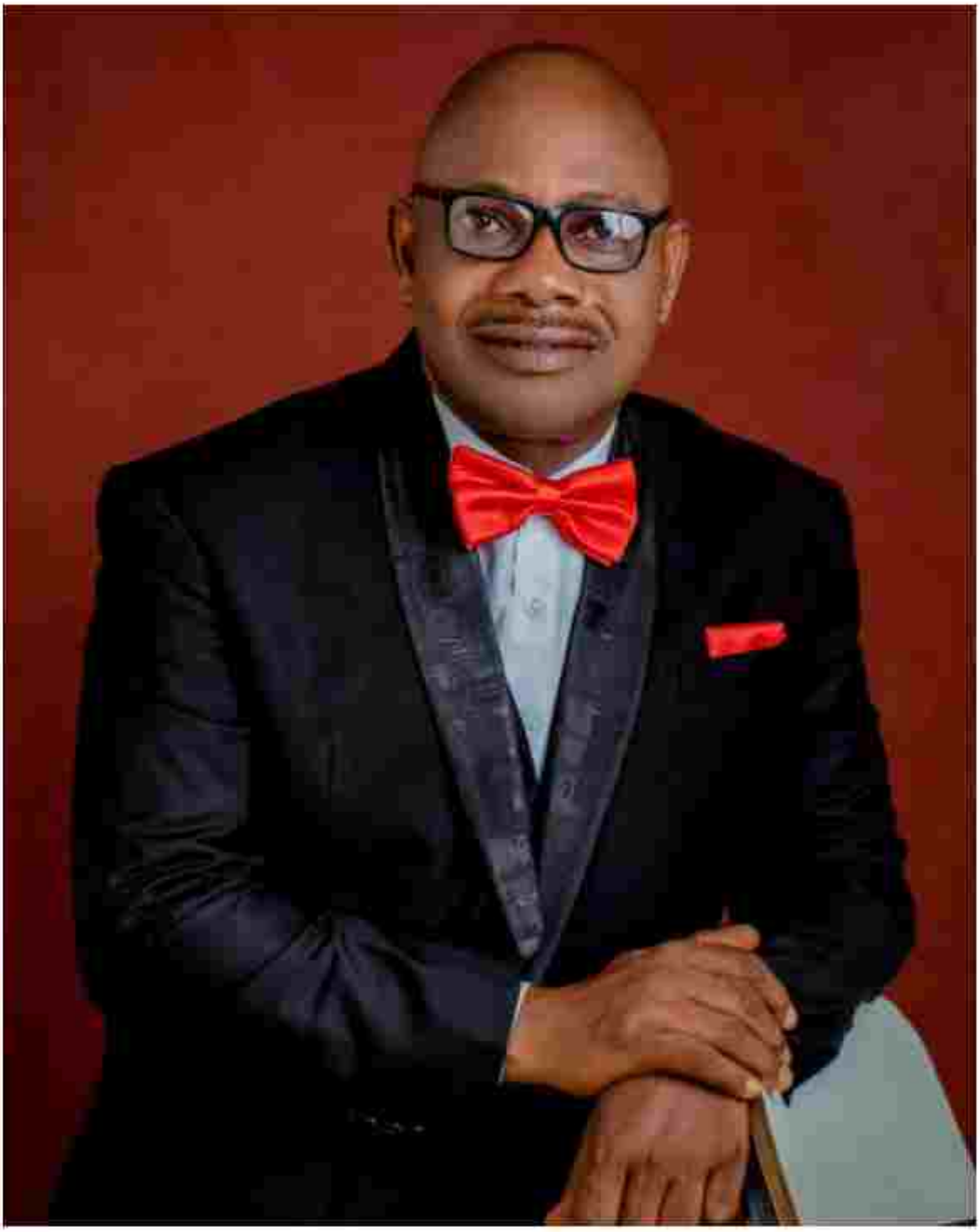
ACCURATE ACCOUNTING INFORMATION: THE FOUNDATION FOR CORPORATE MANAGERIAL DECISION MAKING



ACCURATE ACCOUNTING INFORMATION: THE FOUNDATION FOR CORPORATE MANAGERIAL DECISION MAKING

INAUGURAL LECTURE

DELIVERED BY

PROF. DR. SERGIUS NWANNEBUIKE UDEH

Professor of Accounting

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DEDICATION

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SECTION ONE:
INTRODUCTION

Accurate accounting information is a sub-set of the general accounting information system that works synergistically with other systems to aid managerial decision making. It is a component, though a very important one, that complements others in ensuring that all the essentials needed for informed decision making are available. Unlike some other items, its provision may be expensive, time consuming and skill-demanding.

It must be noted that availability of accounting information is not in any way all that is required. The knowledge and skill of an accountant who interprets the indices and advises management based on what is available appear more important. This is because even when the information is available and good interpretation is lacking, informed decision may not be reached. Unfortunately, many do not understand the inevitability of accounting information in decision making. No wonder some alternatives in decision making are devoid of accounting information in some situations. In the past, many people relied on the traditional accounting information system to generate the required data. It usually took time to be generated with so many associated human errors and imperfection. With ever increasing advancement in information technology, it is obviously clear that the traditional accounting information system is now inadequate to perform this function satisfactorily.

Trigo, Belfo and Estebanez (2014) and Vasarhelyi and Alles (2008) opine that enterprises are entering a new era, the era of real-time enterprises and real-time economy which is otherwise known as the "now economy". The "now

economy" is profusely characterized by substantive acceleration of business assessment and decision processes. The "now economy", in all intents and purposes, demands real-time accounting. In the real sense, traditional accounting information system cannot fit into the current demands of the "now economy".

Furthermore, higher competition among enterprises demands more updated information to allow management to rapidly adapt to opportunities and answer questions. In the context of technology-driven world activities, professional investors believe that real-time reporting from enterprises allows them not only to better understand corporate performance but also to be more confident on corporate governance (Ashcroft, 2005).

Even among those that understand the necessity of accounting information in decision making, its provision has most of the time been problematic. Its provision is often associated with some of these problems; inaccuracy, lateness, unavailability etc. Once any accounting information is bedeviled with inaccuracy, lateness or is entirely unavailable, it may lead to sub-optional decisions that may not promote achievement of desired goals.

How to generate accounting information that will be capable of the expected reliance in decision making process has been a matter of concern to some individuals and organizations. While some lack the required skills, others lack the necessary tools for the prompt generation of accounting information for the purposes of decision making. This invariably creates a lacuna both in the process of generation and utilization of accounting information in decision making. The lacuna has undoubtedly resulted in unfavourable decisions or better still, decisions that did not promote accomplishment of either individual or organizational objectives.

One thing common to organizations, whether big or small is decision making.

Organizations engage in decision making at different times under different situations. Sometimes, it could be decision regarding their survival, how to have an edge over their competitors, how to make more profit/avoid loss or how to pull over a devastating circumstance.

In all these situations, a wide range of variables are expected to be considered as alternatives in decision making. To a very large extent, the more exhaustive the alternatives are, the higher the tendency to make a good decision and vice versa.

There is no doubt that organizations would always want to make best decisions. Regrettably, this has not always been the case. It is a truism that individuals and organizations have in the past taken decisions that resulted in devastation, unintended loss, unprecedented diminuendo in the scale of their activities, etc. Several times, managers and directors of organizations have shockingly realized that their well-intended decisions resulted in disastrous consequences such as gradual collapse of the organization, decline in the market value of the shares of the organization, withholding of credit facilities by some creditors, loss of market share of the company's products, protracted legal battles from creditors and even customers. Many a time, when this happens, the managers and directors embark on a fruitless search for whom to blame both within and outside the organization. Little do they realize that a single wrong decision can spell doom for organizations.

Since most decisions all over the world concern achievement of objectives through either maximization of revenue or minimization of cost or reporting of operations, it becomes not only necessary but imperative that accurate

accounting information which provides the required indices for decision making in this direction are considered. It is therefore, in view of the above that this lecture is structured to adequately address these concerns.

SECTION TWO

ACCURATE ACCOUNTING INFORMATION

Concept of Accounting Information

Chapman (2018) sees accounting information as data about a business entity's transactions. From buying inventory and machinery to entering into long-term building contracts, the events that occur in business operations almost always translate into accounting information. Accounting therefore, identifies and records these data which it uses to generate useful reports for a variety of purposes.

Managerial accounting which is often forward-looking is the aspect that deals largely with decision making. Individuals and managers usually need cost-benefit analysis and break-even points in both naira value and units, examine life cycle costs or break down reports into different business segments. The major benefit of managerial accounting is the flexibility to manipulate reports so as to make them useful to the decision at hand (Rom & Rohde, 2007).

Accounting information, however generated, is useful to stakeholders of the company such as employees, shareholders, creditors, all providers of funds, regulatory agencies and tax authorities. Accounting information is one of the principal ways through which organizations communicate with people (efinance management, 2021). Accounting information can be either quantitative or qualitative.

Cfi Education Inc (2021) classifies characteristics of quantitative accounting information into six. Two are fundamental (must have) while the other four are enhancing (nice to have).

Fundamental (primary) characteristics

According to Cfi Education Inc (2021), fundamental characteristics which quantitative accounting information must have are:

1. **Relevance:** This refers how useful or helpful the information is for financial decision making processes. For accounting information to be relevant, it must possess:
    - **Confirmatory values:** Values that help to authenticate past events.
    - **Predictive values**: Values that help to pre-determine possible future events.
2. **Representational faithfulness (Reliability)**: It is the extent to which information accurately reflects organization's resources, obligatory claims, transactions, etc.

- For accounting information to possess representational faithfulness, it must be:
    - **Complete:** Financial statements and records should not exclude any transaction.
    - **Neutral:** It must be free from bias. This does not include subjectivity and estimation involved in financial statements.
    - **Free from error**: The information should be free from error. We shall look at the distortions in accounting information and their consequences later.

Enhancing Characteristics: Furthermore, Cfi Education Inc (2021) identifies the following as enhancing characteristics:

- **Verifiability:** This is the extent to which information is reproducible given the same data and assumptions.

- **Timeliness**: This is how quickly information is available to users of accounting information. The less timely, the less useful the information is for decision making. Accounting information competes with other information, therefore timelines is important.
- **Understandability**: This is the degree to which information is easily understood. In today's society, reports are many with significant qualitative information.
- **Comparability:** This is the degree to which accounting standard and policies are consistently applied from one period to another.

Qualitative Information in Accounting:

Chron.com (2020) states that qualitative financial data help to determine the intangible impact of different transactions on business efforts. For instance, money spent on a customer service activity may not increase sales but keeps customers happy enough so that sales may not be lost.

Creating the Right Balance:

Accounting information should provide a good mix of qualitative and quantitative data to help make the best decision for your company. However, no rule guides the proportion of the mix in practice (Udeh, 2017). Both have relevance in accounting. While quantitative financial statements start with bottom-line results of management efforts such as revenues, expenses, returns on investment, qualitative financial data help to determine if activities on which money is spent are worth the opportunity cost they incur (Hall, 2013).

Evwierhurhoma (2021) sees accounting information as the qualitative and quantitative information provided by a business accounting information system and modified by accountants to make them useful to users.

Modification that facilitates usefulness of accounting information comes in diverse ways. In most cases, it is propelled by the ultimate need of the information.

Udeh (2013) sees accounting information as any output from an accounting information system that is capable of being applied in decision making process. It can be quantitative or qualitative in nature. It is fundamentally useful in managerial decision making.

Accounting information system (AIS) is the system in which financial transactions are entered and processed to become information. AIS can be manual or electronic. The manual system is out-of-date. A simple spreadsheet on Microsoft Excel can be used to input the financial transaction of a business. A more complex system is accounting software such as Sage 50. An AIS may not provide accounting information in a format required by certain users. In fact, no AIS can provide all information in formats all users can appreciate and understand. The accountant or other financial analysts may need to modify the statements to make them relevant and easily understood by the generality of the user (Poston & Grabski, 2000).

Cooper (2021) argues that AIS is a way of tracking all accounting and business activities for a company. It generally consists of six primary components: people, procedures and instructions, data, software, information technology infrastructure and internal controls.

AIS People: The people in an AIS are the system users. An AIS helps to coordinate different departments in a company. People who need to use AIS in an organization include accountants, consultants, business analysts, managers, chief financial officers, auditors. With a well-designed AIS, everyone within an organization can access the same system and retrieve the same information. An AIS helps to simplify the process of reporting

information to people outside the organization. The people are the most important component of AIS as they use and coordinate other aspects. They need to be knowledgeable and well trained.

Procedures and Instructions: These are methods AIS uses for collecting, storing, retrieving and processing data. These procedures and instructions should be coded into AIS software while employees should be given adequate training on documentation.

AIS Data: An AIS must have a data base structure to store information such as Structured Query Language (SQL) which is a computer language commonly used for database. SQL allows manipulation and retrieval of data in the AIS.

AIS Software: This is the software component of AIS used to store, retrieve, process and analyze data.

IT Infrastructure: This refers to hardware used to operate the accounting information system. These may include computers, mobile devices, servers, printers, surge projectors, routers, storage media, a backup power supply. Essential factors to consider in the choice of hardware include speed, capacity, storage, ability for upgrading and most importantly comparability with the intended software. A sure way of meeting compatibility requirements of hardware and software is through the purchase of "turnkey system" that includes both the hardware and software that the organization needs.

Internal Controls: These are security measures designed to protect sensitive data. These can be as simple as passwords or as complex as biometric identification such as fingerprint, voice, facial recognition, etc. Another area of application of AIS is in uncovering of fraudulent activities.

Tuovila (2020) states that AIS involves the collection, storage and processing of financial and accounting data used by internal users to report information to investors, creditors and tax authorities. It is generally a computer-based method for tracking accounting activity in conjunction with information technology resources. An AIS combines traditional accounting practices, such as the use of Generally Accepted Accounting Principles [GAAP] with modern information technology resources.

Uses Of Accounting Information

In addition to the usefulness of accounting information in decision making, Khan (2016) states that other uses of accounting information include:

Production of external reports to tax authorities and regulatory agencies: Tax authorities and regulatory agencies depend essentially on accounting information to be able ascertain the state of affairs of companies as well as the level of their compliance with the relevant statutes. Without accounting information on the activities of companies, tax authorities would find it absolutely difficult to determine the tax liabilities of companies. Similarly, Securities and Exchange Commission use publication of some aspects of accounting information to determine level of corporate compliance.

Supporting routine activities: Accounting information is generated at different levels in organizations. What is generated at a lower level may be built upon at a higher level to be able to take a managerial decision. Certain routine activities like payment of staff salary may not be possible without basic accounting information.

Financial control: Accounting information is employed in various ways to assist in financial control of the organization. Financial control generally appears more effective with the aid of accounting information.

Implementing internal control: Accounting information plays a unique and significant role in the implementation of internal control system. It provides the necessary financial yardstick for measurement and eventual comparison of results.

Forms of Accounting Information

Accounting information is presented in various forms including financial statements, feasibility reports, project evaluation reports, etc.

Financial Statements: Murphy (2020) explains financial statements as written records that convey the business activities and financial performance of a company. They include statements of comprehensive income (balance sheet), income statements (profit and loss account), cash flow statements and supplementary notes.

Statements of comprehensive income provide an overview of a company's assets, liabilities and shareholders' equity as a snapshot in time. The date at the top of the sheet represents when the snap was taken, which is generally the end of a fiscal year. It shows the net worth of a company.

Income statements show an overview of revenues, expenses, net income and earnings per share. Income statements, unlike statement of comprehensive income covers a range of time, which may be a year for annual financial statements. This shows the financial performance of a company over a specific accounting period.

Cash flow statements measure how well a company generates cash to pay its debt obligations, fund its operating expenses and fund its investments. The cash flow statements enable investors understand sources of the company's money and how the money is spent. The details of a company's sources and uses of cash flow are shown in three components of the report (Debreeny, et al (2005):

Operating Activities: These contain all sources and uses of cash from running the business and selling its products or services. They include changes in cash, accounts receivable, depreciation, inventory and accounts payable. Other transactions usually included in operating activities are income tax payment, wages, interest payments, rents and cash receipts from the sale of a product or service.

Investing Activities: These cover sources and uses of cash from investments of a company on long term basis. Any activities concerning mergers or acquisition, purchase or sale of an asset, loans to vendors or receipts from customers belong to this category. In fact, all changes affecting assets, equipment of all classes and investments belong to investing activities.

Financing Activities: Financing activities include sources of cash from investors or banks and cash used to pay stakeholders. They usually include debt insurance, equity insurance, loans, dividends paid, stock purchases and repayment of debts.

The cash flow statements in addition to its fundamental role of showing the sources and uses of funds from those specific areas, help to reconcile the income statements with the statements of comprehensive income.

The content of the financial statements above shows different bases for decision making. It is however, certain from the financial statements that irrespective of the type of report or the purpose of decision, that accounting information would be at the centre of such decisions. In fact, it is always the yardstick for decisions arising from financial statements.

Supplementary Notes: When financial statements are issued to outside parties, supplementary notes are included. The notes explain various activities, provide additional details on some accounts and other items that

are normally outside the scope of a typical accounting records as mandated by the applicable accounting framework, such as Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS).

Feasibility Report: A feasibility report is a report that evaluates the viability or otherwise of proposed projects. It comprises of an executive summary, introduction, background and context, evaluation criteria, conclusion and recommendations. While the other parts deal with general issues, the evaluation criteria concentrate on decision variables. Some of the major decision variables include financial cost, tax impacts, public perception, environmental effects, resources needed.

More often than not, the recommendations are based on well set out accounting information such as financial costs and resources.

Project Evaluation Reports: These are reports of assessment of project profitability or liquidity. Ghosh (2020) identifies top four methods of project evaluation as:

Return on Investment (ROI): This is the ratio of profit expected from an investment project and the proposed investment for the project. The greater the ROI of a project, the more acceptable it becomes. The formula ROI =

$$\frac{\textit{amount of profit}}{\textit{amount of investment}}$$

The amount of investment may mean the amount of assets, amount of capital invested or the amount of equity capital. Based on the above, we have three variables of ROI viz:

Return on Assets (ROA): ROA represents the ratio between net profit and the assets. It is expressed as:

$$\frac{\text{net profit excluding taxes + interest paid} \times 100}{\text{Total Assets}}$$

Return on Capital Employed (ROCE). Here, ROCE is net profit (excluding tax) is expressed as a ratio of the total amount of invested capital. Total amount of invested capital may be seen as the sum total of long term liabilities and equity of the shareholders or the summation of the net circulating capital and fixed assets.

It may be expressed as $\text{ROCE} = \frac{\textit{Net profit minus tax}}{\textit{Total investment capital}} X \frac{100}{1}$

Or

$$\text{ROCE} = \frac{\textit{Net profit minus tax + interest paid}}{\textit{Total invested capital}} X \frac{100}{1}$$

Return on Shareholders' Equity (ROSE): This is the ratio of net profit and equity of shareholders. Shares of a company are of two types – preference shares and ordinary shares. ROSE is expressed as:

$$\frac{\textit{Net profit minus tax – dividend paid to preference shareholders}}{\textit{Equity of the ordinary shareholders.}}$$

There are two ways through which owners of ordinary shares may obtain return from their company. They are earning per share (EPS) and dividend per share (DPS). These two are expressed as:

$$\text{EPS} = \frac{\textit{net profit minus tax – dividend paid to preference shareholders}}{\textit{Number of ordinary shares}}$$

$$DPS = \frac{\textit{dividend paid to the owners of ordinary shares}}{\textit{Number of ordinary shares}}$$

Payback Method: This is a measure of liquidity rather than profitability. It measures the time within which a project will return the invested capital. The shorter the time, the better for the investor in view of the vagaries of the investment climate. For investment with equal streams of income, it is the expected return divided by the useful life of the project.

Net Present Value (NPV): This is a discounted cash flow method that equates discounted cash outflow with discounted cash inflow. When the present value of the flow of costs of the project is deducted from the present value of the flow of net revenues, net present value of the project is arrived at. Usually, the rate of cost of capital (r) is used as the discount rate.

The formula is: $NPV = \left(\frac{R1}{(1+r)} + \frac{R2}{(1+r)2} + \cdots \frac{+Rn}{(1+r)n}\right) - \left(co + \frac{c1}{1+r} + \frac{c2}{(1+r)2} + \cdots \frac{+cn}{(1+r)n}\right)$

The general rule is to accept any project whose net present value is greater than zero; otherwise reject. However, if NPV = 0, the firm would be indifferent between the acceptance and rejection of the project.

Internal Rate of Return (IRR): This is another method of discounted flow. It makes the present value of the expected revenues to be obtained from an investment project equal to the present value of the cost of the project. Where m is the rate of discount, IRR would be

$$C = \frac{R1}{(1+m)} + \frac{R2}{(1+m)2} + \cdots \frac{+Rn}{(1+m)n}$$

$$\text{Or } C = \sum_{t}^{n} = 1 \frac{R1}{(1+m)t} +$$

The general rule is accept the project if IRR is greater than the rate of cost of capital.

These project evaluation methods are sometimes used in conjunction with some risk factors in order to account for associated business risks. The combination makes for a more integrated approach in evaluation.

In all these situations, accounting information remains a reliable decision variable. Different approaches rely on it either directly or indirectly to make valid and useful decisions.

SECTION THREE

MANAGERIAL DECISION MAKING

Concept of Decision Making

Terry (n.d.) defines decision-making as the selection of one behavior alternative from two or more possible alternatives. In other words, decision making involves choice either between or among alternatives.

Mcfarland (n.d.) states that a decision is an act of choice wherein an executive forms a conclusion about what must be done in a given situation. A decision represents behavior chosen from a number of alternatives.

Decision making according to Openstax (2012), therefore implies the following:

Exercise of choice: Managers exercise choice based on some conscious and deliberate logic or judgment. Managers' understanding of the organizational goals plays a key role in the exercise of choice.

Availability of alternatives: Several alternatives are required for decision or choice to be made. In the absence of alternatives, imposition of ideas results.

Choice is driven by purpose: What needs to be achieved often helps to determine the choice to be made. The fundamental reason for decision making is to achieve organizational goals. Therefore, the possibility of each alternative helping to attain organizational goals must be considered.

Levels of Managerial Decision Making

Johnson (2019) states that there are basically three levels of managerial

decision making. However, managers at all levels must make decisions on behalf of the company. The difference between decisions made at various levels lies in the scope of the choices made. To maintain order and save management time, each level of management concentrates on specific types of functions. The different levels of management and their functions are as follows:

Strategic Level: Managers in this level are the board members or owners of the business. This level is concerned with creation of the mission statement for both the internal and external audiences. Managers here focus on long term planning and determination of objectives which could span over years. This level of managers are not involved in day-to-day running of the organization.

Tactical Level: Managers in this group decide on tactical objectives that will enable them to accomplish strategic goals. The tactical objectives are usually more detailed than the strategic plans. Their choices and plans see fruition in a year or less. Tactical managers are on ground to steer the ship of the organization.

Operational Level (First-line management): When operational level managers choose their own goals on a daily, weekly or monthly basis, they help to accomplish objective of the upper level management. Managers in this level are in the lowest rung of the management ladder. Their decisions are usually subjected to review by higher levels of management before implementation.

Functions of Management

Smith, Babich and Lubrick (2020) see the functions of management as

encompassing the following:

- **Planning:** Ackoy (1981) defines planning as a design of what we desire in future and ways to accomplish it. This implies that planning is a process that involves both short term actions (eg budgeting) and long term actions (eg strategic planning).
- **Organizing:** This is the process of bringing both physical and non-physical resources into active engagement without much friction. It takes the effort of good management team to make sure that roles and functions of staff of different levels are clearly mapped out in such a way that tasks are performed as and when due. Ideally, organization starts from identifying what needs to be done, breaking down what needs to be done into smaller groups of activities, and finally coordinating the different parts that are involved in the process so that organizational goals will be achieved.
- **Staffing:** Is the process of sourcing and recruiting best hands suitable for the unique situation of the company in question. When different people are assembled in a company, extra care must be taken to ensure their compatibility. With assemblage of staff, internal control system becomes necessary to ensure that other assets are not mismanaged or misappropriated by the staff.
- **Coordinating**: This entails that various aspects of management are harmonized to ensure goal congruence. Different aspects of business cannot be meaningful except they are properly integrated. This simply means marketing, production, purchasing, financing etc, must be harmonized.
- **Controlling:** Controlling ensures that things are moving in line with plans. This measures actual performance against set standard. The

most commonly used tools are variance analysis and contribution analysis.

- **Directing:** This is an action guided process where managers oversee the functions and activities of others on daily basis. Managers motivate employees through directing and mentoring to bring out their best in c carrying out their daily functions.
- **Reporting**: The separation of management from ownership makes reporting a necessity. Owners of business must be informed of how their resources have been employed in pursuance of corporate objective. Management activities are therefore, assessed through reports.
- **Budgeting:** Management tries to give detailed budgets of the units that are controlled by them. Managers try to use budgets to reduce cost and maximize profits.

It is noteworthy to realize that the overall administrative implication of all the managerial functions is to ensure informed decision making. Put differently, all management functions dovetail into or help to guarantee efficient decision making process.

Decision Making Process

Decision making process is segmented into two, namely, planning and control processes. For a manager to make a good decision, he or she needs to pass through the stages in the two processes. The planning segment has five stages while the control segment has two.

Adeniji (2004) identifies the stages thus:

- **Identification of Objectives**: Since organizations pursue different objectives, each enterprise should first of all articulate its objectives.

Some pursue profit generation and maximization, market leadership, profit quality, product innovation, worker's welfare, social responsibility. Other organizations may place their priorities on other areas.

- **Search for Alternative Courses of Action**: This stage is usually dependent on the identified objective. Of all the stages, this is the most difficult and probably the most important stage in the decision making process. It entails searching for a range of possible courses of action or strategies that will facilitate the achievement of the identified objectives. It usually takes future opportunities and threats in the environment into consideration.
- **Data Gathering About Alternatives**: Each alternative requires specific data for both strategic and short-term decisions. The authenticity and completeness of the data go a long way in making or marring the decision. This therefore, explains the serious attention often given to data gathering. The course of action selected by a firm using the information presented is more or less affected within its environment including the products it makes, the markets it operates in and its ability to meet future changes in terms of prices, customers' tastes and preferences.
- **Selection of Appropriate Alternative Courses of Action**: Once the required and necessary data for each course of action have been obtained, management will need to select an option or course of action. This involves choosing among competing alternative courses of action and consequently selecting a particular alternative that will best promote the achievement of the corporate objectives. Managers without deep-rooted accounting knowledge find this stage not only challenging but intricate. We normally advice they seek the guidance

of their accountants in this regard to ensure optimality in selection of alternatives.

- **Implementation of the Decisions**: Implementation of a chosen course of action is done as part of the budgeting process. It is usually through the budget, which is a financial plan that various management decisions are implemented. They are expressed in forms of cash inflow and cash outflow. It is through the budgeting process that everyone in the organization is communicated on the part he or she is expected to play in order to achieve the overall corporate objective. This stage marks the end of the planning process.
- **Comparison Between the Actual and Planned Outcomes**: This is the beginning of the control process. It centers on comparison of actual outcomes that is, actual costs and revenue with planned outcomes (budgeted costs and revenue). The information relating to this is provided through performance report which compares planned and actual outcomes. Performance report makes use of reporting by exception principles in which activities that do not conform to plans are identified and isolated so that managers can devote their scarce time to give attention to them. Failure to address non-conforming activities goes a long way in preventing the accomplishment of corporate objectives.
- **Responding to Divergences from Plan**: In this last stage, divergences (deviations) from plan are corrected and re-integrated into the next planning phase. The actual and potential causes of deviations are treated so as to prevent subsequent occurrence. To ensure this happens, the remedial measures are brought into the planning process. This is why we say that planning and control are inseparable processes in a continuum.

Adherence to the stages of decision making process incontrovertibly assists managers of all levels to arrive at optimal decisions irrespective of operating circumstances surrounding them.

Tools For Managerial Decision Making

Certain tools facilitate informed decision making in organizations. They do this by either promoting timely provision of required variables for decision making or by disseminating the processed data for decision making. In the view of Johnson (2019), such tools include:

Accounting Information System Software: This software facilitates quick processing analysis, store and retrieval of accounting information. Different types exist for use in enterprises. Nature of enterprise operations, size, financial capacity and objectives help to determine the type of accounting information system software an organization requires for efficient decision making.

Business Process Management [BPM]. Kissflow (2022) sees business process management as how a company creates, edits and analyzes the predictable processes that make up the core of its business. It is an organized management strategy that looks holistically at management processes in order to achieve optimized business outcome. It analyzes current state and identifies area of improvement in order to create a more dynamic, efficient and effective enterprise. Unmanaged chaotic processes may hurt business and lead to one or two of these scenarios – time wastage, more errors, increased blame, demoralized employees etc. The above scenarios retard business growth and achievement of objectives.

Kissflow (2022) identifies three basic types of business process management thus:

- **Integration- Centric BPM**: This type handles processes that primarily rotate among existing systems in an organization without much human involvement. Integration-centric business process management requires extensive connectors and access to be able to create processes that move fast.
- **Human-Centric BPM**: This concerns those processes that are essentially executed by human beings. They are made up of tasks and approvals performed by individuals. These platforms excel at a friendly user interface, easy notifications and quick tracking.
- **Document-Centric BPM**: These business process management solutions are required when a document is at the heart of the process. They enable routing, formatting, verifying and getting the document signed as the task pass along the workflow.

A good business process management should contain the following essentials-visual process diagramming tool, drag-and drop form designer, role-based access control, mobile support, powerful administration features, single-sign-on (SSO), integration with existing software systems, reports and analytics, performance for larger user bases and process performance metrics. These promote operationalization of the entire process.

Cloud Computing: Ranger (2018) defines cloud computing as the delivery of on-demand computing services – from applications to storage and processing power – typically over the internet and on a pay-as-you-go basis. Egiyi and Udeh (2020) define cloud accounting as an integrated, yet portable accounting system which uses accounting data from a server with the aid of a compatible accounting software through an internet facility in an electronic device. This implies that the essentials of cloud accounting include a server

with stored accounting data, accounting software and electronic device with internet facility.

One major benefit of using cloud computing services is that firms can avoid the upfront cost and complexity of owning and maintaining their own IT infrastructure and can simply pay for what they use when they use it. Providers of cloud accounting services benefit from significant economies of scale through service delivery to a wide range of customers (Fauscette, 2013).

Ranger (2018) and Defelice (2010) believe that cloud computing exists in three models:

a. **Infrastructure as-a-Service (Iaas)**. This refers to the fundamental building blocks of computing that are rentable such as physical or visual servers, storage and networking. Firms that do not have technical skills particularly find this model attractive. However, the safety of data in laas may not be guaranteed.

b. **Platform-as-a-Service (Paas)**. This is the next layer up-as well as the underlying storage, networking and virtual servers. It also includes tools and soft wares that developers utilize to develop applications that may encompass database management, operating systems, middle-ware and development tools.

c. **Software-as-a-Service (SaaS)**. This concerns the delivery of applications-as-a-service. This appears to be the most conversant aspect of cloud computing. It is usually used on daily basis. Here, the end user has no need for the underlying hardware and operating system since they normally get service via a web browser or application which may be arranged on the basis of seat or user. Saas has been found to be most dominant model of cloud computing.

As laudable as cloud computing may appear, some criticisms tend to decimate its use and application even on the part of users and vendors. Ranger (2018) notes that latency (i.e location of data centre) may affect the rate of movement. It is argued that applications coming from a data centre on the other side of the planet or from a congested network may be sluggish when compared to a local connection. Furthermore, he sees data sovereignty as another issue. Many people are scared over where their data are processed and subsequently stored. This has raised a big concern that has given rise to the thought of building regional data centre so that organizations can keep and control their data in their own region. This however, may not be the end of fear of data insecurity. Each vendor may need to have independent control of his or her data.

Business Intelligence (BI). Stedman and Burns (2021) opine that business intelligence is a technology-driven process for analyzing data and delivering actionable information that helps members of the executive, managers and workers make informed business decisions. They state that as part of business intelligence process, organizations collect data from internal IT system and external sources, prepare it for analysis, run queries against the data and create data visualizations, BI dashboards and reports to make the analytics results available to business users for operational decision making and strategic planning. The business intelligence initiative is anchored on analytics, data management and reporting tool as well as different methodologies for managing and analyzing data in order to ensure better business decisions that propel increase revenue generation and improvement in operational efficiency for more competitive advantage (Sahay & Ranjan, 2008).

Elena (2011) argues that business intelligence goes beyond mere software. It

includes other functional sub-systems that drive its success in the business world. In fact, business intelligence data can include historical information and real-time data gathered from source systems as generated, enabling business intelligence tools to support both strategic and tactical decision making processes. Before, it is used in business intelligence applications, raw data from different source systems generally must be integrated, consolidated and cleansed using data integration and data quality management tools to ensure that business intelligence teams and business users are analyzing accurate and consistent information (Stedman & Burns, 2021).

Types of Business Intelligence Tools and Applications

A number of tools and applications are available for utilization in business intelligence. Chaudhuri, et al (2010) believe that tools and applications help to sharpen different aspects of business and decision making process. According to Negash and Gray (2008) and Stedman and Burns (2021), the following business intelligence tools and applications exist:

- **Ad hoc analysis**: This entails the process of writing and running queries to analyze specific business issues. The core area of application of this tool is why people sometimes call it ad hoc querying. It is seen as one of the cardinal elements of modern business intelligence applications and an important feature of self-service BI tool. These tools are run regularly with the analytics results included as reports.
- **Online analytical processing (OLAP)**: Online analytical processing was among the early technologies of business intelligence. It is useful in data analysis along multiple dimensions especially when complex queries and calculations are involved. Previously, as a matter of

necessity, data would be extracted from a data reservoir and stored in an OLAP multidimensional cubes from where they are run. These days, as a result of advancement in technology, OLAP analysis can be run directly without involvement of columnar databases. The beauty of this tool is its ability to engage in analysis along multiple dimensions.

- **Mobile Business Intelligence**: This enables business intelligence applications and dashboards to be available on smartphones and other handy electronic gadgets such as tablets. One major limitation of mobile business intelligence is its inability to analyze data. It is basically designed to view, with ease, analyzed data.
- **Real-time business intelligence**: The special feature of this is its ability to analyze data as they are created, collected and processed to avail users of current information regarding business operations, customer behavior, financial market situations as well as other decision making variables inherent in the business including credit scoring, inventory trading and promotional strategies.
- **Operational Intelligence (OI):** This is a kind of guided real-time analytics which delivers processed information to only managers and frontline workers. It is used in operational decision-making with the intent of producing fast results on contending issues. Its application in handling operational problems quickly and successful underline why it is often called operational business intelligence.
- **Software-as-a-Service Business Intelligence (SaaSBI).** The principles of functionality of SaaS is similar to that of cloud computing that is structured on the basis of subscription. It has facilities for multi-cloud support which favours its use in different cloud platforms in a bid to meet user needs and promote efficient business management. It is sometimes referred to as cloud business intelligence.

- **Open Source Business Intelligence (OSBI):** Open source tool exists in two forms-the community version which does not attract any charge and commercial version that is subscription based. Some vendors, in order to encourage individual users, may prepare business intelligence tools that offer free services to individuals
- **Embedded Business Intelligence (EBI):** This category permits direct combination of business intelligence and data visualization. It allows data analysis with the applications they utilize in doing their regular job. It is adaptable to even locally made applications without compromising any of its features.

Collaborative Business Intelligence (CBI): Collaborative business intelligence makes use of no specific technology. It only entails the combinations of available business application and collaboration tools to provide a platform for different people to work together on data analysis and information utilization.

Location Intelligence (LI): Unlike the CBI, this is a highly specialized version of business intelligence that is used to analyze location and geospatial data with map-based data visualization. It is designed to handle geographic issues in business data. It is very useful in handling complexities arising from diversities in location and relation matters.

All these tools and applications of business intelligence have become essentials in coping with the demands of informed decision making. Different tools and applications have continued to find increasing relevance in the global drift to the now economy.

Enterprise Architecture (EA).

Gillis (n.d) perceives enterprise architecture as a conceptual blueprint that defines the structure and operations of organizations. It entails analyzing, planning, designing and eventual implementation of the policies. The overall intent of enterprise architecture is to determine how an organization can effectively achieve its current and future objectives. Enterprise architecture helps business to integrate their legacy applications with processes in order to control their environment (Stelzer, 2009).

Enterprise architecture helps multiple departments in a business to coordinate their activities, articulate challenges and business risks using a business model. It is a composite capability and identity gaps with a view to making informed decisions (Barlow, 2013 and the Open Group, 2009).

Intaglio (2020) identifies four perspectives of the Enterprise Architecture thus:

Business Perspective: This concerns processes and standards by which businesses operate on a day-to-day basis. It offers a general platform for managing businesses on a short term and regular basis. It defines company's strategy, planning and tactics.

Application Perspective: This perspective defines interactions among the varying processes and standards that are in use in the organization. It basically harmonizes all processes and standards to avoid internal conflict and improve efficiency.

Information Perspective: This perspective handles, orders and classifies raw data contained in document files, images, data-bases, spreadsheets, presentations, etc, that the organization requires for optimal operation. The

ordering and classification of raw data facilitates effective decision making. In fact, this domain expands the company's ability to have accurate data driven plans.

Technology Perspective: This deals with the hardware components, operating systems, programming and networking tools that are employed in the organization. These tools process the raw data specifically to provide results from which informed decisions are taken. Stakeholders depend on the interplay of information and technology perspectives for correct, current and reliable basis of decision making in organizations.

Models and Methodologies of Enterprise Architecture

Enterprise architecture is applied in organization using different models and methodologies. The choice of the models are dependent on the organizational size and objectives.

Some of the common models according to Gallis (n.d) and Intalio (2020) are:

Zachman Framework (ZF): This framework covers six architectural points as well as six primary stakeholders that are useful in defining and standardizing IT architectural components. Many organizations find this model useful and easily adaptable.

Unified Architecture Framework (UAF): The UAF is generally seen as a complex though flexible enterprise architecture when compared to other framework. It is particularly suitable for military and government software development as well as in commercial entities. It is operated through a UML profile. It is quite dependable.

Agile Enterprise Architecture (AEA): This model focuses on organization around a flexible, extended collection of structures and processes that have

the potentials to grow or develop further. It is sometimes integrated as important part of agile software delivery component.

Federal Enterprise Architecture Framework (FEAF): This is a recent model that was introduced in 1996 specifically to improve effectiveness of IT. Notwithstanding that is was designed for use in public sector, it has also found usefulness in private companies.

Other Frameworks that are available but with restricted application include: the European Space Agency Architectural Framework, the SAP Enterprise Architecture Framework, the Ministry of Defense Architecture Framework, etc. All these models have been found to improve information gathering processing and utilization in modern business decision making.

Course of Managerial Decision Making

Openstax (2012) opines that managers need to realize that some decisions may be complex and require a range of options and uncertain outcomes. In the process of deciding among various options and uncertain outcomes, managers need enough information. Sometimes, deciding how much information is needed to make a good decision becomes a problem. In practice, some managers make decisions without complete information. That creates a problem of its own. In fact, one of the hallmarks of an efficient manager is the ability to determine when to hold on a decision and gather more information and when to make a decision with the information at hand (Terry, n. d). It is necessary to know that going to either extreme in time horizon of decision making can be detrimental to organizational growth. Waiting too long to make a decision can be as harmful for the organization as reaching a decision too quickly. Failure to react quickly enough can lead to missed opportunities while acting too quickly can lead to organizational resources being disproportionately allocated to projects with no chance of

success. Managers must know when they have gathered enough information and must be prepared to change course if additional information becomes available and points to the fact that the initial decision was a wrong one. This realization has always posed a difficult challenge, for managers with fragile egos, changing course can be extremely challenging because admitting a mistake can be more difficult than forging ahead with an obviously bad plan. Managers must realize that in the presence of complexities of business tasks, some failures are inevitable especially when vital accounting information is omitted in decision making process (Johnson, 2019).

Managerial decision making is not akin to taking a multiple choice test where there is always only one right answer. This rarely happens in managerial decision making. Most times, a manager is expected to choose between multiple good options without clear idea of the consequences of each outcome. This makes it difficult to say which option will turn out best (Openstax, 2012). Sometimes, the managerial decision making may be complicated by a multiple of bad options and the task to minimize their associated harms. Other times, there could be individuals in the enterprise with competing and opposing interests when managers are expected to make decisions that must not be accepted by all the groups. This places the manager in a precarious position with the tempting possibility of one or two groups standing against his decision. Awareness of this possibility often deter some managers without strong will from taking optimal decisions (Smith, Babich & LUbrick, 2020).

In situations of dilemma in decision making process, accounting information offers a logical and realistic base for decision. It often absorbs managers of personal bias and reduces the chances of organizational conflict. It becomes a reference point in times of doubt.

SECTION FOUR

CHALLENGES OF ACCURATE ACCOUNTING INFORMATION AND DECISION MAKING

a. Accounting Information

Traditionally speaking, accounting reports are generated periodically, either quarterly, biannually or annually. Due to rapid changes occasioned by unpredictable volatility in modern markets and society, the periodic reporting has become saddled with a number of challenges.

- **Inability to Meet the Time Requirement**: Most providers of accounting information are unable to meet the time requirement for provision of various accounting information for purposes of decision making. Not minding the quality of accounting information, if it comes a minute late, it becomes useless. The dynamic nature of our society today has invariably complicated the time requirements of generation and provision of accounting information.
- **Accuracy of the Information**: Sophistication in human transactions has inevitably increased the need for accounting information. The more accounting information that is required, the more threats to its accuracy. Once the accuracy of the information cannot be vouched for, then, the basis of corporate decision will become questionable. The consequences of decisions not based on accurate accounting information in the corporate world can better be imagined than explained.
- **Data Manipulation and Theft**: Advancement in technologies brought increased vulnerability of data in computer systems, ranging from manipulation to hacking and outright theft. Various organizations

have suffered inestimable losses as a result of this. Effects of data manipulation in organizations are always massive.

- **Lack of Qualified Personnel**: Generation of accounting information is not an all-comers responsibility. It requires special skills acquired through series of training. It may be necessary to state that most small business out fits do not understand the necessity for this, hence their failure to employ staff that can help them generate the essential accounting information.
- **Frequent Changes in Accounting Policies**: Accounting is sometimes seen as a profession on transit. Consequent upon this, some policies change from time to time. Staff of organizations need to be trained and retrained to be able to adapt to the new policies or else after a period of time, they will cease to be useful.
- **Falsification of Accounting Source Documents**: In some organizations, accounting source documents are frequently falsified or manipulated for various reasons. Such documents cannot give a fair representation of the transactions of the organization. Decisions based on documents like this will certainly fall short of the expectations of users of such reports.
- **High Cost of New Technologies**: The cost of acquisition of new technologies for provision of accounting information is high. Many enterprises find it difficult to purchase new technologies that can make provision of accounting information easier. Worst still, a technology that is trending today becomes obsolete tomorrow when an improved version with amazing features evolve.

b. Decision Making

Smith, Babich and Lubrick (2020) identify the following as challenges affecting decision making:

- **Bounded rationality**: There are situations where leaders face complex challenging issues which make them unable to be rational about situations at hand and this makes them unable to understand alternatives provided. This can lead to incorrect decisions being made without all the information or abandonment of an issue all together. Overcoming bounded rationality is difficult especially against the background that no one is fully knowledgeable. However, versatility and deep-rooted knowledge of leaders in their specialties are helpful.
- **Escalation of Commitment**: As somebody's commitments increase in volume and complexity, the tendency for proper and effective consideration reduces. This increases the chances of taking poor decisions. This essentially underlines why leaders in top echelons of their practice have aides and assistants
- **Time Constraints**: This occurs when there is little time available to collect information with rationality and make effective decisions.
- **Uncertainty:** This is the act of not knowing an outcome until the said outcome has transpired and this is often anchored on the belief that an outcome is envisioned, but not seen. As human beings, every aspect of the future presents with unimaginable uncertainties.
- **Biases:** Some managers take decisions with biases to their inherent beliefs and world views. Here, managers' perception of certain things affects their decision making process.
- **Conflicts:** Conflicts which can be either process or relationship based sometimes influence a manager's decision- making skills. In a bid to avoid a conflict zone or favoring/disfavoring an interest area, sub-optimal decisions may be taken.

SECTION FIVE

RECOMMENDATIONS

In view of the centrality of accounting information in managerial decision making, it is necessary that providers of accounting information should move with time. They should provide accounting information that will promote optimal decision making in real-time. Since the world is moving towards the "now economy", providers of accounting information should ensure the adoption of practices that are compatible with real-time accounting. It is in the light of the above that the following recommendations are proffered:

1. Adoption of An Integrated Accounting Business Approach (IABA). This model is otherwise known as Udeh's Model. It entails integration of accounting information system software appropriate for the size and functions of the organization to business process and business intelligence model. (Udeh, 2022.).

While the accounting information system software ensures real-time quick processing, analysis, storage and retrieval of accounting information, business process management and intelligence permit real-time monitoring of business processes that send relevant financial or non-financial information from business operations to management and users of accounting information. This approach goes beyond computerization of some departments.

The model involves total re-engineering of all operations or processes in an organization with a view to having all required pieces of information from every segment of the organization at the click of a button for decision making purposes. It usually involves automation of operational processes. It uses IT

as a vehicle to achieve its objectives.

For practical purposes, accounting software available to small businesses include Intuit's QuickBooks or Sage 50 Accounting as it is now called. Small to mid-sized business might use SAP1s Business One while mid-sized and large business might use micro-soft Dynamics GP, Sage Groups MAS 90 or MAS 200, Oracle's people soft or Epicor Financial Management. Cloud computing that allows instant sharing of information among users within and outside the organization or informed decisions should be an integral part of this.

2. **Engagement of IT compliant Accountant**: Above all, engagement of highly skilled and IT compliant Accountants is sacrosant. The Accountant coordinates the various IT reports and modifies them to meet the divergent needs of actual and potential users.

SECTION SIX

CONCLUSION

Accounting information has been shown in various perspectives to be the bed rock for managerial decision making. It undoubtedly presents a transparent and convincing yardstick for choice in the presence of competing alternatives. Managers and researchers implicitly place reliance on accounting information for far-reaching decisions that impact significantly on corporate objectives.

However, the periodic provision of accounting information in enterprises appear not to be in tandem with the rate of technological development sweeping across all sectors of the economy presently. There is therefore, an obvious need for both the providers and users of accounting information to be compliant with the current demands of the real-time enterprises and real-time economy. The providers of the accounting information should adopt technologies that will promote real-time accounting in order to ensure that accounting information remains the nucleus for managerial decision making in organizations.

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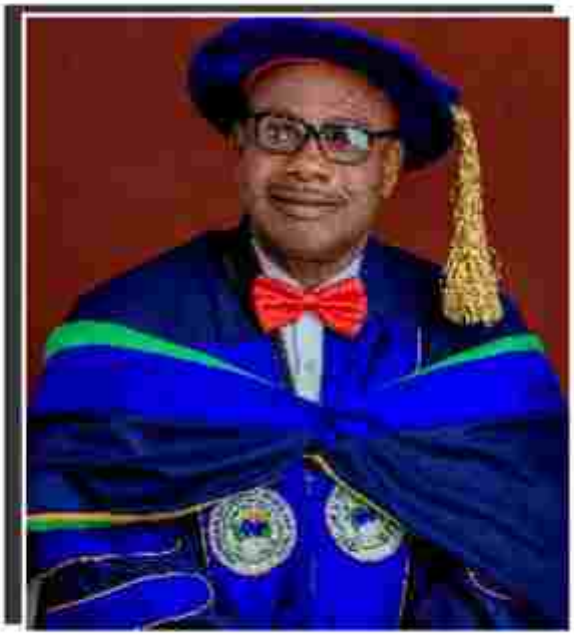

Brief Bio-Data Of
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