



Research Paper

Technology Based Management (TBM) Strategy and The Performance Of Aluminium Manufacturing Firms In OWERRI, Imo State, Nigeria

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ABSTRACT

Rationally, the success of every organization especially, business organizations are dependent on the management. Hence, management plays significant roles in these organizations. However, many of these corporate organizations are besieged with inefficiency, loss of customers due to poor services, low productivity of employees, increase in management-labour issues and high labour turnover, poor planning techniques, ineffective organizational strategy, and poor controlling approaches. In this 21st century what has attracted the attention of all companies is investment in information technology and the efficiency resulting from it. Hence, Information technology (IT) is necessary and fundamental in business management which obviously assists, boost, and grow business organizations. Moreover, the application of these technologies in management is also necessitated by the global environmental changes that pose challenges to optimum execution of managerial roles and realization of organizational goals. A descriptive research a survey design was adopted. The sources of data to the study are primary data and secondary data. The population of the study is made of the 55 members of the management team of seven (7) selected Aluminum Manufacturing firms in Owerri. The same size was adopted. Simple random sampling was adopted which allowed every element in the population the chance of being selected. Data were analyzed using Pearson's correlation, regression and ANOVA models. It is concluded that IT is necessary for management in their discharge of their crucial roles and functions in this dynamic environment which also results in better organizational performance.

KEY WORDS: Technology, Management, Information, Efficiency and Effectiveness, and Technology Based Management.

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I. INTRODUCTION

Background of the Study

Management is a vital element of every organization. No entity exists without the application of managerial principles and functions squarely. This underscores the importance of management. Furthermore, the goal of every manager is the realization of the group or organizational goals through the process of planning, organizing, directing and controlling. To achieve the set targets also, human, material, financial and technological resources are employed. Among these mentioned, technology is today the highly sought for because of its vital role. Farhad (2011) opined that "Technology" has a vital role in creating added value, creating wealth and increase in productivity in all aspects and levels and is considered propellant of achievement and development in any society.

In Muhammad (2009) technology is seminal to the progress of any country. He went further to assert that it helps to catalyze efficiency in the provision of better production and services. It is the major enabler of social change and development in the world. One of the major developments which had profound impact on economic growth pattern in the world in the new millennium has been the strides in the domain of Information Technology sector.

It is obvious that IT has drastically changed the business landscapes and it has become the trending word of the modern life today. Long and Long (1998) identified that computer as the key technological device is producing the third greatest revolution in human history. Automation which involves computerization is one of the highest priorities and objectives in modern organizations. Morton (1998) highlights that IT applications impact on task productivity, task innovation, consumer satisfaction and management control. He further argues that computer ensures a fast, reliable way to execute all tasks, and organizations with successful IT adoption and implementation processes are generating significant performance gains and competitive advantage. Krishna 2012 states that Information Technology is a powerful tool that can play a big part in making an organization's business a successful one.

Dibrell and Miller (2002) in Ali et al (2012); argued that advances in IT have enabled managers to adapt existing forms and create new models for organizational design that better fit requirements of an unstable environment. In fact, they assert that IT is a catalyst in the development of new forms of organizational structures.

Statement of the problem

The application of Information Technology in management is necessitated by the global environmental changes that pose challenges to optimum execution of managerial roles and realization of organizational goals. There are cases of increased inefficiency, increase in cost of running the firms, and increasing customer dissatisfaction due to poor services rendered. The management has also failed to carry out effective decisions making on what objectives to pursue and the best techniques for executing the plans and the best design or structure for the organizations due to unavailability of reliable data. Employees are poorly induced and motivated resulting in low productivity, increase in management-labour issues and high labour turnover.

Objectives of the study

- i. To determine the impact of Data Base Management system on customer satisfaction.
- ii. To examine the significant relationship between use of internet/intranet and effective management decision making.

Research Questions

- i. What is the impact of Data Base Management system on customer satisfaction?
- ii. What is the significant relationship between use of internet/intranet and effective management decision making?

Statement of hypothesis

Ho₁: Data Base Management System does not have effect on customer satisfaction.

Ho₂: There is no significant relationship between the use of internet/intranet and effective management decision making.

II. LITERATURE REVIEW

The Concept of Management

The term Management is a word that has received numerous scholarly attention and examination in terms of meaning, definition and scope from the management sciences and other related fields. Koontz and O'Donnell (1979) it is an operational process, comprising planning, staffing, leading and controlling. Wehrich, Cannice and Koontz (2008) see management as the process of designing and maintaining an environment in which individuals working in groups efficiently accomplish selected aims. Appleby (1981) defined it as a social process entailing responsibility for the effective and economic planning and regulation of the operations of an enterprise in fulfillment of a given purpose or task, such responsibility involving; judgment and decision in determining plans and development of data procedures to assist control of performance and progress against plans; and the guidance, integration, motivation, and supervision of personnel, comprising the enterprise and carrying out its functions.

Management is a process as observed. This process may be a social or operational process comprising planning, organizing, directing or commanding and controlling. It also involves the use of resources such as man or personnel, machine or technology, material or tool, money or finance, information or data of an organization. These resources are used in the most economic or efficient and effective manner in pursuit of specified organizational goals. Unarguably, management aims at achieving organizational objectives. It is the task of management to establish an environment for individuals or group to perform and contribute to the achievement of the group goals, efficiently and effectively. The individuals or personnel are obligated to contribute their effort to realizing these group objectives with least amount of such inputs as money, human, physical and information.

Levels of Management

- **Top Level Management:** The top management team is responsible for the implementation of the broad policies approved by the board of directors of the firm. They also coordinate the setting of corporate goals and ensure the attainment of these goals in an effective and efficient manner. They have the highest authority and responsibility. Their decisions are strategic. They approve or disapprove staff dismissals, promotion or charges in the policies of the organization. They determine the direction of expenditures of the organization.
- **Middle level management:** This is also called the administrative management level. This level of management exists to coordinate the flow of work in the various departments by the operating staff and provide a link between the operating management and the top management. This middle level is composed of branch managers and division managers. They report to management and are in charge of relatively large departments or divisions consisting of several smaller units. Such managers are responsible for translating policies and plans into action by developing procedures for implementing such policies and plans.
- **Lower Level Management:** This level of management is also called the operating or supervisory or first-line management. It is the lowest level of hierarchy of management. First-line managers ensure that their work teams or units meet performance objectives, such as producing a set or number of items at a given quality that are consistent with the plans of middle and top management. This level focuses more on the controlling and directing functions of management.

Information Technology

The term Information Technology popularly referred to by the abbreviation IT has been viewed and defined in various ways. Over the years, IT has been conceptualized and measured differently by different researchers. Wikipedia defines it as the application of computers to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise. IT is considered a subset of Information and Communication Technology (ICT). Gupta (2000) asserted that IT includes hardware, software, databases, networks and other related components which are used to build information systems. According to Kendell and Kendell (2000) IT is the technology that supports activities involving the creations, storage, manipulation and communication of information together with their related methods and management applications.

Chan (2000) gives another definition of information technology. According to him it is the convergence of computing, telecommunication and imaging technologies. William and Sawyar (2005) opined that IT as a general term describes any technology that help to produce, manipulate, process, store, communicate, and or disseminate information. Ebrahim and Somayeh (2013) quoting U.S. Information Technology Association (ITA) as a technology which studies, designs, develops, implements, supports or manages computer-based information systems, especially computer software and hardware programs.

William and Sawyar (2005) in Muhammad and Muhammad (2009) asserted that information technology (IT) is a broad concept that describes any technology that aid production, manipulate process, communicate, store, and disseminate information. The concept of IT broadly describe the techniques and technologies, methods and applications which support activities involving the creation, storage, manipulation and communication of information (principally computing electronics and communication) together with their related methods, management and applications. The technologies which are elements of IT are identified as; information machine e.g. computers; media communication e.g. radio and television; and telecommunication technologies and equipment e.g. satellite, fiber optic cables, facsimile machines.

Data Base Management and Customer Satisfaction

An organization must have accurate and reliable data for effective decision making so that customers will be satisfied. Hence, organizations maintain records on the various facets maintaining relationships among them. Such related data are called a database. A database management system involves the collective gathering of related files, in combination with the details of the interpretation of the data it holds. Basically, database system is nothing more than a computer based record keeping system i.e. a system whose overall purpose is to record and maintain information/data Bhojaraju and Koganurmath (2014)

A database management system (DBMS) is a software system that allows access to data contained in a database. The objective of the DBMS is to provide a convenient and effective method of defining, storing and retrieving the information contained in the database. The DBMS interfaces with the application programs, so that the data contained in the database can be used by multiple applications and users. In addition, the DBMS exerts centralized control of the database, prevents fraudulent or unauthorized users from accessing the data, and ensures the privacy of the data.

Through data base management system, relevant data and information about the customers are effectively stored and retrieved for better management decision. One of the major goals of business organizations is to achieve customer satisfaction, through their products or services. Customers are the major determinant of organization success and survival in this dynamic and competitive business environment. Customer's satisfaction

is defined as the measurement that determines how happy customers are with the company's products, services and capabilities. According to Ograjensek and Iddo (2011) the scholarly and applied literature on service management refers to several concepts related to customers' reactions to a product or service. These are primarily 'customer satisfaction' and 'perceived service quality', but increasingly also 'customer experience' and 'customer engagement'.

According to Revenio and Nasra (2017) several authors and researchers have examined the impacts and or influence of IT use on organization's performance whether products or service and found out the positive relationship with these two main variables. The results also affirmed the relationship by offering recommendations that IT has indeed plays a significant role in the improvement of providing both the quality and quantity of relevant information for decision makings for managers and businesses as well as a baseline for product and service innovations (Mano, 2009). The essence of product and service innovations is to improve and encourage the satisfaction of the company's numerous customers

Porter (2001), in Revenio and Nasra (2017) states that the efficient of IT not only assess the organization's strategic and tactical tools for the firm but it promotes competitiveness when appropriately employed throughout the organization as it potentially brings advantages that outweighs the costs and highlights the sustainability of its operational success in the long-run. It facilitates excellent communication or conversion of data or information into meaningful results and that is sharing valuable information for decision makings between departments as well as from top to bottom management where dissemination of information takes place. This will result to customer satisfaction.

Internet/Intranets and Effective Managerial Decision Making

According to Cardoso and Lavarda (2016) the internet provides a series of facilities in the business area, making it easier for managers to perform day-to-day tasks. Citing Balarine (2002), it works as a meeting place that provides two places at a time, information and access to it, communicates values, and provides presentation of products and services. The internet is a tool the middlemanager uses to get the information he needs for efficient, data-driven decision making, not just knowledge and experience.

Drucker (1999) in Cardoso and Lavarda (2016) the information technology (IT) revolution has transformed tools to assist in strategic decisionmaking, to assist middle managers in their managerial work. According to Vesna and Gordana (2012) the intensive application of information and communication, and particularly Internet technology in business communication range is expanding; more people within the organization have adequate information and knowledge that allows them to make decisions that are appropriate to their responsibilities and powers. According to them the process of decision making is no longer the exclusive privilege of the management; decision making becomes part of every job, activity and task. The organizational structure is changing and "flattening" because the dynamics of decision making in the Internet environment do not permit the application of command and control principles, and organizational behaviour and culture is gradually adapting to the conditions of global, networked operations. In Mohammed (2015) an intranet is medium of communication in a closed community. Messages from the intranet is transferred through a gateway, with a firewall along with users authenticated and encrypted messages, which cannot be viewed by any other person that is not among the users within the organization. One of the significance of intranet is for its decision support. In Ramlah et al (2008) the utilization of IT for decision support purposes has been widely discussed in the IS literature. They further state that in the case of intranet, scholars and researchers have also explained on its function and utilization for serving similar purposes.

Management has been seen as the process that is concerned with planning, organizing, and control of human activities to achieve desired objectives. Afèrdita (2015) states that management represents a relatively universal activity because its principles are applicable in almost all areas of the economy and society, such as: production, banks, commerce, agriculture, sports, military, art, business etc. He further opined that information systems have played an important role in the organization and development of enterprise, but today they are oriented more towards the management process, governance and control in particular.

Managers play key and multiple roles in organization. The responsibilities range from minor to major tasks performed in the organization. While determining how IT can benefit managers, it is essential first to examine what managers do in the organizations and what information they need for carrying out different jobs. A French industrialist, Henri Fayol indicated that all managers perform five management functions in the organization that is planning, organizing, command, coordinate and control.

In Hitt and Brynjolfsson (1997), technology like IT has greater impact on managerial practice than before. It is beyond doubt that IT is playing a vital role in the changing process of management by providing powerful tools for managers to carry out their jobs efficiently and effectively.

Hence, use of internet and intranet helps managers to take decisions on the following managerial functions;

- **Planning:** Planning is the process of establishing goals and developing a sensible course of action aimed at achieving the goals. According to Robbins and Coulter (2003), planning is the process of identifying the

firms' goals, establishing an overall strategy for achieving those goals, and developing a comprehensive hierarchy of plans to integrate and coordinate activities. Chow (2001) states that IT plays a vital role in planning process. Wide variety of software packages and computer programs are available to the managers in the organization, which help them to store, retrieve and analyze information for making plans.

In Korson and Vijay (1992) IT helps managers in creating plans by defining the path through which the organizations can successively be achieved. Formal plans are made available to other organization's members in the form of hard, soft and on-line copy. Hedlin and Allwood (2002) also highlight that in planning, computers and internet provide quick information which are useful for top managers to make quick decisions.

With the help of IT, today's managers can accurately scan, forecast budget for correct planning. Software programs are also available for operational planning tools, which help a lot in applying scheduling, breakeven analysis, linear programming, queuing theory and **probability theory**. Among others, simulation is the best example of computerized planning tools in which with the great help of a computer a model of real-world phenomenon is created and then manipulation of one or more variables is done in the model to assess their impacts Ives and Jarvenpaa (1999).

Computer applications can immediately produce results on sales, marketing plans and the business's relationship with customers whenever managers want the information. Managers use technologies such as email, that is, transmission of messages and files via a computer network and telephony to communicate the broad organizational goals and objectives to all levels of management and to all workers within the organization.

- **Organizing:** Organizing involves the assignment of tasks and grouping them into departments, the assignment of authority and the allocation of resources across the organization. Draft (1999) defines organizing as involving to determine what tasks are to be done, who is to do them, how the task is to be grouped, who reports to whom, and where decision is to be made.

Mckeen and Heather (2003) argue that new information technologies allow managers to handle more functions and widen their span of control. Few levels of management hierarchy are required, enabling companies to flatten the pyramid of today's management structure. The new IT allows decentralization of decisions making without loss of management awareness; hence employees at all levels can be encouraged to be more creative and entrepreneurial. The key responsibility of the CEO will be leadership; to capture the lights or energies of the organization like a lens and focus them on the key strategic objectives.

In organizing also, managers are expected to cut costs incurred through duplication of effort, as well as harmonize the activities of all members of the organization. A very effective way this is done is through cloud computing and by creation of a virtual organization. By cloud computing, information is stored on the internet through a cloud service provider. This information can then be accessed later by members of the organization with correct login details. It will make workers to easily update themselves through this method, as opposed to having to comb through various reports and very often, duplicate information and effort. By creation of virtual organization, managers use information technology to link people, assets and ideas and are able to share infrastructure and risk and greatly reduce concept-to-cash time through sharing,

Dibrell and Miller (2002) confirmed that IT has been a catalyst in the development of new forms of organizational structure. They further stated that IT has gone from a support mechanism to a substitute for organizational structures in the form of the shadow structure. The span of control and levels of the organization were each reduced through the introduction of computers to the organization. It has allowed numerous organizations to reorganize several tasks through the automation of tasks.

- **Leading:** Every organization is consisted of people, and management's major job is to direct and coordinate these people. This is the function of leading. Leading includes motivating subordinates, directing others, selecting the most effective communication channels and resolving conflicts (Strassman, 1985).

Directing involves giving instructions, guiding, counseling, motivating and leading the staff in an organization to achieve organizational goals. It deals with the articulation of a clear vision for members to follow, as well as enabling members to know the parts they play in the pursuit of organizational goals. In order to articulate their visions to members, managers resort to multimedia technology. They use presentation programs during workshops to do this. They as well, can use cloud computing, by way of applications like Prezi, for their presentations if they are at different locations.

By collaboration on projects through cloud computing, they inspire workers, who knowing that their leaders are also part of the same project, strive for the best results. Directing is mostly about communication and in order to motivate and lead members, managers use mobile telephony to regularly call members to communicate with them and in the long run, inspire them. They also send out emails to members to remind them of organizational goals. Timely newsletters in electronic format can also be circulated around so members get a clear idea of what managers expect.

In performing their directing functions, managers pass standards and experience down to others. New technological developments enable managers to use online programs and databases, as well as relevant videos to guide members towards the realization of organizational goals. Managers can use 3-D simulations as well as

electronic visual aids to help communicate their visions to members, in a way they can easily relate to and subsequently understand.

During meetings, staffs take audio notes which can later be transcribed. This could be tasking, hence managers can use a tool such as Transcribe by Wreally Studios, which takes in some audio data and breaks it down into text. Managers also can reward their workers by giving them devices born out of information technology. Efforts are rewarded not by financial means but giving out such products like mobile phones and computers, with the implicit goal of better equipping workers with the resources to handle information technology.

Meyer (1986) noted that IT professionals are more skilled and can better perform their work as compared to other employees. They are highly paid and rewarded due to their performance, and hence they are appreciated. It gives them motivation to perform better for more rewards and positions. He further opined that managers or leaders having skills of IT can better communicate with their employees, since they have technical skills, and therefore, they can influence their subordinates and as well can resolve their conflicts more rapidly and easily as compared to none IT based skilled managers. IT undoubtedly has opened new and better possibilities for leading function of managers.

- **Staffing:** Every organization requires both human and non-human resources to carry out its activities. Without human resources, it is very difficult for organizations to **achieve their goals**. In performing their function of staffing, managers seek to employ people who have gone through proper and effective selection, appraisal and developmental process. IT has rather simplified this task of managers through the use of internet and telephony. Managers do not need to meet their applicants for their appraisal. This can be done over the internet with technologies such as VoIP (voice over internet protocol), which enables one to place a video call over the Internet using services like Skype, Google Hangouts, and others for interviews. Codassium which is an application enables managers to assess applicant's coding abilities and interview them simultaneously.

Social network service like LinkedIn also helps the manager with his/her staffing function. Professionals post their qualifications or CVs which helps the manager to easily scout for the services or applicants needed for the job or position. Again, in order to keep the organization running, the members need to be regularly updated. With the advent of the internet, there is now a chance for people to be educated and trained from the comforts of their homes through online courses. In fulfilling staffing duties managers can easily chose the best type of training needed for their staff members and ensure its implementation. In training of the staff, managers also can use PowerPoint presentation displayed with projectors having both audio and visual benefits.

- **Controlling:** It involves monitoring activities to ensure they are being accomplished as planned and correcting any significant deviations. In Robbins and Coulter (2002) control is the means to determine whether the organization's goals and objectives are met. Information technology has made this job smooth and more effective for the managers. It is resulting in measuring actual performance, comparing and taking managerial actions to correct deviations through different systems. Attewell (1989) had mentioned about computerized monitoring through video-cameras by managers while sitting in their offices. The movements and activities of the employees are monitored and observed. This is the function of information technology.

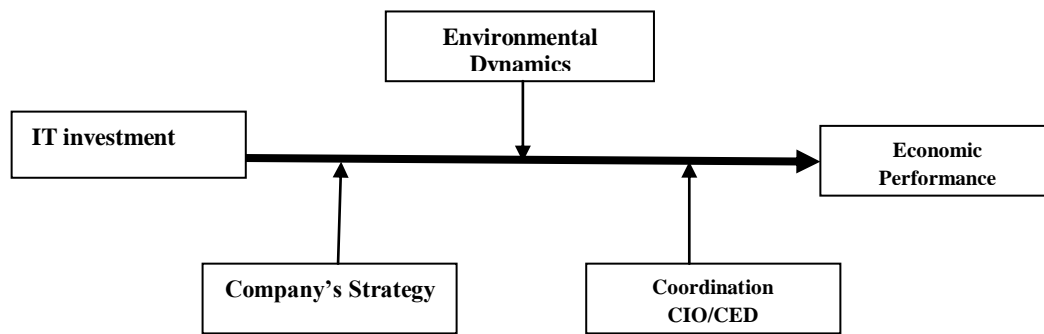
As mentioned earlier, controlling deals with the function of monitoring the activities within the organization to make sure they are in line with organizational goals. At the end of the day, managers are able to use electronic spreadsheets such as (Microsoft Excel or LibreOffice Calc) and database programs to aggregate results of activities that have been carried out, to be able to ascertain whether workers are conforming to the objectives and goals laid out by the organization. Managers also can receive data or information through email, or through the organization's intranet. Such needed information is then passed through the various levels of management for appropriate actions and decisions to be taken.

Collaboration is one of the key aspects of cloud computing in service-oriented businesses. Once, managers had to gather teams together and pass documents around from person to person to receive input. Employees then can log into single program, work on a document at the same time and send it along to the next step. These programs contain detailed log-in information so managers can trace mistakes properly and correct problems with greater accuracy. Managers use mobile communications technology to regularly and effortlessly check on their workers to ensure that they are doing the right things. Managers can also send relevant documents and information through text, instant messaging or email through their phone.

Theoretical Review

This study relies on the model from research carried out by Mining Fang Lin and Richard E. (1999) in Ebrahim and Somayeh (2013). They studied the role of environmental dynamics and company's strategy and concluded that when environmental changes are greater, the company's strategy is more active and the relationship between CEO and CIO is closer, and thus, investment in Information Technology has a stronger effect on the company's financial and overall performance.

fig.1.



Lie, Mingfang and Ye, Richard (1999), "Information technology and firm performance"
 Information & Management in Ebrahim, C. and Somayeh, M. T (2013).

Empirical Review

Ali et al (2012) conducted a research to investigate the effect of information technology (IT) on organizational structure (OS) and firm performance (FP). This study employed a causal and descriptive research design to determine the cause-and-effect relationships among IT, OS, and FP based on previous studies. A model incorporating these three constructs is examined using structural equation modeling (SEM). A 14-question self-administered questionnaire comprising three sections was employed. The target was Tehran, Iran. A field survey was carried out and questionnaires were sent to all of the selected firms based on a cluster-sampling approach. The results show that IT has a direct and indirect impact on FP. OS is found to have a direct effect on FP. Finally, the results of the current study show that IT has a direct effect on OS.

Muhammad and Muhammad (2009) carried a study to examine the impact of IT on organizational performance with respect to different performance indicators of Pakistani manufacturing and banking sectors over period of 1994-2005. The primary data was collected through in-depth interviews and field surveys of 48 companies, 24 in manufacturing sector (12 local and 12 foreign) and 24 in banking sector (12 local and 12 foreign). The data was tested by applying different statistical techniques. The results of the research have led to the conclusion that IT has positive impact on organizational performance of all the organizations but the banking sector performance outstrips the performance of manufacturing sector.

Kariuki(2015) carried out a study sought to determine the level of use of information technology and its relationship with organizational performance at PS Kenya. A descriptive survey was used. Primary data was collected using a semi-structured questionnaire. The population for this study comprised of the entire PS Kenya staff which was 438. The questionnaire was administered electronically for data collection, out of which 311 respondents responded to the study resulting in a response rate of 71 percent which was considered as a sufficient **representation of the organization**. The study findings revealed that majority of the respondents had various IT company devices at their disposal to enable them perform their duties. The study findings also revealed that there was a positive relationship between the level of IT use and organizational performance at Population Services Kenya. The study results indicated that IT use explains 82.4% of organizational performance at PS Kenya.

The study is conducted Revenio and Nasra, (2017)to primarily determine the relationship between IT usage and organizational performance as applied to the chosen organization, International College of Engineering and Management (ICEM). Specifically, it also investigates which of the IT use variables significantly correlates to organizational performance as well as assessing the impacts or influence of IT use on the college performance according to identified variables. The study adopted descriptive research design employing the questionnaire survey method. Random sampling method has been used to select 60 participants. Data were analyzed using statistical tools as frequencies and tables, weighted mean and standard deviation, correlation, T-Test and regression analysis. Key findings showed that, IT devices used in the college were mainly desktop computers and the large extent of usage was also seen on these devices. In determining the extent of agreement on the use of IT in the college, unanimous responses were generated which they categorically say "agree" on the following: the extent of agreement on IT use on organizational performance factors such as performance & targets achievement, financial performance, accountability, quality service and operational efficiency as evidenced by weighted mean ratings and standard deviation.

III. METHODOLOGY

As a descriptive research a survey design was adopted. This was because it sampled people's opinions by questioning them. The sources of data to the study are Primary Data and Secondary Data. Primary data sources are firsthand data from the field with the use of personal interview, questionnaire, and observation. Secondary

data sources are from existing literatures from textbooks, journals, newspapers, and conference papers on the subject matter. The population of the Study is made of the 55 members of the management team of seven(7) Aluminum firms in Owerri. The population of the study was adopted as the sample size since it is convenient to handle by the researcher. Simple random sampling was adopted which allowed every element in the population the chance of being selected.

Population of study/Sample size

s/n	Name of firm	Population Size	Sample Size
1	Iyke Franco Aluminum Fabrication	8	8
2	Kendesmond Aluminum & Allied Industries Limited	5	5
3	GMICORD Aluminum & PRITEC Supergal Factory	7	7
4	Jo-Best Aluminum Construction Co. Ltd	9	9
5	Vinal Aluminum Products Nig. Ltd	5	5
6	Mattex Global Aluminium	10	10
7	Ebony Tech Co. Nig. Ltd	6	6
	Total	55	55

Field Survey, 2021

Description of the Research Instrument.

For the study, questionnaire was used as the research instrument, which helped to assess the opinions of the respondents on the effect of technology based management strategy (TBM) on the performance of selected firms in Owerri. The questionnaire was designed using the Five point Likert scale that ranges from Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD).

- Strongly agree 5 points
- Agree 4 points
- Undecided 3 points
- Disagree 2 points
- Strongly disagree 1 point

Validity of Research Instrument.

Validity determines the ability of the instrument to measure what it supposes to measure. The questionnaire was given to the experts in the field of research to make critique and corrections in the contents and context of the instrument to ensure it contains what it meant to measure. Content validity was adopted for this study.

Reliability of Research Instrument.

The study employed test re-test method, whereby the 20 questionnaire was administered to respondents, first at two weeks interval and afterward repeated after two weeks. The results were collected with close similarities. The internal consistency (reliability) or co-efficient of reliability of the questionnaire was measured using the Cronbach's Alpha Coefficient.

$$\alpha = \frac{n}{n-1} \left[1 - \frac{\sum Vi^2}{V_{test}} \right]$$

- α = Reliability
- n = Number of questions in questionnaire
- Vi = Variability of each of question score.
- V_{test} = Variability of each of overall questionscore.

Method of Data Analysis.

The data collected from the respondents was tabulated and analyzed using descriptive statistics of table of percentage, mean and standard deviation. The hypotheses were tested using Pearson Product moment correlation, regression analysis and ANOVA model aided by SPSS v21.

Pearson's Correlation Coefficient

$$r = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

Degree of Freedom (df) = n-2

Decision Rule: We shall reject Ho if $t_{cal} > t_{\alpha/2, v}$

Data Presentation and Analysis.

Table 1 Administration of Questionnaire

S/N	No. Administered		No. returned/ Percent of No. returned		No. not returned/Percent of No. not returned.	
	No. Administered	% of No. Administered	No Returned	% of No. Returned	No. not Returned	% of No. not Returned
1	55	100%	55	100%	0	0%

Source: Field Survey, 2020

The table above revealed that out of the 55 (100%) questionnaire administered were duly filled and returned by all the respondents.

Table 2 Questionnaire Analyses

S/N	Question Item	Responses					N	_X	STD
		SA 5	A 4	UD 3	D 2	SD1			
	Data Base Management System								
1	Use of computer system is important in the organization	27	25	1	1	1	55	4.382	0.782
2	Data base Manager is required for data processing	26	23	2	2	2	55	4.255	0.966
3	Telephony equipment encourages organization performance	24	26	2	1	2	55	4.309	0.791
4	Software applications are important in serving your customers.	19	28	3	3	2	55	4.073	0.979
	Customer Satisfaction								
5	Customer loyalty rate increases with the use of information technology	26	25	2	1	1	55	4.345	0.799
6	Customers retention can be determined with the quality of product	28	21	1	3	2	55	4.273	1.008
7	Decrease in customer complaints is attributed to the quality of the products	30	20	1	2	2	55	4.345	0.966
8	Quality product/services is affected using computer aided design	14	39	0	2	0	55	4.182	0.611

Source: Field Survey, 2021

The above table has revealed that use of computer system, database manager, telephony and software applications no doubt affect customer loyalty, retention, low customer complaints and quality of the products and services.

Table 3 Questionnaire Analyses

S/N	Question Item	Responses					N	_X	STD
		SA 5	A 4	UD 3	D 2	SD 1			
	Internet/Intranet								
1	Wireless technology enhances better performance	33	20	1	1	1	55	4.600	0.531
2	Use of blogs promotes information sharing.	29	23	2	1	0	55	4.454	0.715
3	Internet relay chat will promote organizational efficiency.	26	24	0	1	4	55	4.218	0.937
4	E-mail applications helps in sourcing of data	24	25	3	3	0	55	4.273	0.732
	Effective Decision Making								
5	Cost reduction is a measure of better decision	28	24	2	1	0	55	4.436	0.501
6	Better services to customers boost returns on investment.	26	24	2	3	0	55	4.327	0.818
7	IT tools enhance speedy execution of plans	26	21	1	2	5	55	4.109	.737
8	Use of computer based applications will reduce decision errors	30	17	2	1	5	55	4.200	.621

Source: Field Survey, 2021

The table revealed that the application of wireless technology, blogs, internet relay chat, and email applications encourage cost reduction, return on investment, speedy execution of decision, and limited errors.

Test of Hypothesis 1

Ho₁: Data Base Management System does not have effect on customer satisfaction.

Table 4. The relationship between Data Base Management system and customer satisfaction.

		Data_Base_Mtg_System	Customer_Satisfaction
Data_Base_Mtg_System	Pearson Correlation	1	.968*
	Sig. (2-tailed)		.032
	N	4	4
Customer_Satisfaction	Pearson Correlation	.968*	1
	Sig. (2-tailed)	.032	
	N	4	4

*. Correlation is significant at the 0.05 level (2-tailed).

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.968	.93	.90	.0239	2.23

a. Predictors: (Constant), Data_Base_Mtg_System

b. Dependent Variable: Customer_Satisfaction

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.01		.01	29.38	.032
	Residual	.00		.00		
	Total	.01				

a. Dependent Variable: Customer_Satisfaction

b. Predictors: (Constant), Data_Base_Mtg_System

Test of Hypothesis 2.

Ho₂: There is no significant relationship between the use of internet/intranet and effective management decision making.

Table 5. The relationship between the use of internet/intranet and effective management decision making.

		Internet_Intranet	Effective_Decision_Making
Internet_Intranet	Pearson Correlation	1	.991**
	Sig. (2-tailed)		.009
	N	4	4
Effective_Decision_Making	Pearson Correlation	.991**	1
	Sig. (2-tailed)	.009	
	N	4	4

** . Correlation is significant at the 0.01 level (2-tailed).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.991	.98	.97	.0237

a. Predictors: (Constant), Internet_Intranet

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.06		.06	107.21	.009
	Residual	.00		.00		
	Total	.06				

a. Dependent Variable: Effective_Decision_Making

b. Predictors: (Constant), Internet_Intranet

Interpretation of results

From the test of hypothesis 1, the Pearson correlation value of 0.968 shows that the relationship between Data Base Management System and Customer Satisfaction positive. Hence Data Base Management System accounts for about 96.8% variations in Customer Satisfaction. The strength of the relationship is strong since the value is greater than 0.3. Since the significant 2-tailed P-value is 0.032 which is less than the P value of

0.05 (significant value by default) accept the Alternate hypothesis (H_1) which states that Data Base Management System has significant impact on the Customer Satisfaction. The finding is in corroboration with Kariuki(2015) whose results indicated that IT use explains 82.4% of organizational performance at PS Kenya. Hence, the application of information technology boosts the performance of organizations.

From the test of hypothesis 2, the Pearson correlation value of 0.991 shows that the relationship between Internet. Intranet applications and Effective Decision Making is positive. About 99.1% variations of Internet/Intranet applications is explained in Effective Decision Making by management. The strength of the relationship is strong since the value 0.991 is greater than 0.3. The significant 2-tailed P-value is 0.009 which is less than the P value of 0.05 (significant value by default) accept the Alternate hypothesis (H_1) which states that there is significant relationship between the use of internet/intranet and effective management decision making in the organizations.

IV. Summary Of Finding, Conclusion And Recommendation

Summary of Findings

From the analysis carried out, Information Technology has significant effect on the performance of firms and the effectiveness of managers. The IT components included the use of computer system, data base manager, telephony equipment, software applications, wireless technology, use of blogs, internet relay chat and e-mail applications. These metrics of IT have been found to significant effect on organization survival and performance i.e. they boost customer loyalty and retention; reduction in customer complaints, promotes better quality product, ensure cost reduction, better services, speedy executions and reduce decision errors by management.

Conclusion

Information technology is playing an important role in the organizations and the society at large. Undoubtedly, it has profound effects on the performance of the managers. It has transformed the nature of global business operations. Electronic commerce, electronic data interchange, electronic government and development in telecommunication are main forces in IT revolution. All the national governments have shifted their strategies with the aim of bringing the benefits of IT to every segment of the economy, government and public life. There is no sector; manufacturing, service, trade or government activity where IT cannot be applied.

Managers are the leaders of the organizations. They play important functions with the aim of achieving organizational goals. Such crucial functions included planning, organizing, directing or leading, staffing and controlling. For effectiveness of these managers, there is need to apply the IT components. Apart from the reason above, IT also helps in saving of time and money (efficiency), improves information handling and provision, increase revenue, improve the competitive position of businesses, and expand the business by enabling easy interaction between business units at different geographical locations. Others are productivity, safety and reliability.

Recommendations

- For organizations to have competitive advantage over others, there is need for implementation of information technology
- Managerial effectiveness is boosted by information technology and should be adopted in discharging of their functions of planning, organizing, leading and controlling.
- Business environment is dynamic and multifaceted, hence the need for strategy development and implementation. The use of information technology should be adopted in this process.
- For organizations to achieve effectiveness and efficiency their organizational structure and design should allow for integration of information technology.
- It is necessary that every level of management should consciously apply information technology tools for efficient execution of their functions.
- For organizations to retain and maintain high level of customer loyalty their services are better offered using IT tools.

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