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Revolutionizing Business Administration and Management with Information Technology: A Study of NITEL in Port Harcourt

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ABSTRACT: *Information technology is the creation, processing, storing, securing, and exchanging of all types of electronic data through the use of computers, networking, storage, and other physical devices, infrastructure, and procedures. It is typically utilized in relation to business operations as opposed to personal or recreational technology. This paper therefore examines the revolutionization of information technology on business administration and management. The aim is to determine the impact of information technology on NITEL, Port Harcourt. To achieve this, the researcher adopted the survey research design vis-à-vis a qualitative study because of the use of a questionnaire as a survey instrument. The findings of this research show that information technology optimizes business administration and management. It also shows that certain factors, such as staff redundancy, fraud, and high maintenance or repair costs, are some of the problems associated with information technology at NITEL. The research concludes that information technology has had a significant impact on the management and administration of business at Nigerian Telecommunication (NITEL). For optimal operation and optimum output service, the various machines or equipment originating from information technology require adequate and efficient handling.*

KEYWORDS: information technology, impact, business administration, management

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INTRODUCTION

Information is not only the basis of human existence. It is also the life wire for the running of any organization. This is consequent upon the fact that decisions are based on information. For effective decision-making and execution of those decisions, there must be constant information flow. Data gathered must be transmitted to end users after it has been processed. Information receipt, processing, storage, dissemination, etc. may be instant; otherwise, valuable business opportunities might be lost. That is what information technology (IT) seeks to do in business administration and management.

The development of information technology has come a long way. The first writing in the world was invented by Egyptian priests around 4000 B.C. At first, the writing was a series of whole pictures, which were drawn to tell a story. This took a long time, and later on, the priests learned to draw parts of pictures to represent the whole. Much later on, the pictures were drawn not to represent objects but to represent sounds. Thus, the picture of a house was drawn not to represent the actual building but the sound "Haus." Gradually, the method of writing was improved until one letter was used to represent one sound. This is how the first alphabet was made. The priests wrote with a reed pen and made ink by mixing soot and gum with water.

But the scope of the writing called Hieroglyphics was restricted to priests; hence, it was called Sacred writing. The writing was used to record important religious ceremonies, medical facts, and records of kings and nobles. The most important writings were recorded or carved on stones, while the less important records were kept on thin stripes from a reed known as PAPYRUS, a plant that grew on the banks of the Nile. The modern word “paper” came from papyrus. Other ancient ways of writing include the SUMMERIAN CUNELFORM, ANTHENIAN OSTRAKON, and JEWISH SCROLL, or parchment, which was written on animal skin. The Bible records in Exodus 3:18, “And the Lord gave Moses, when he (God) had made as an end of speaking with him upon the mount Sinai, the two tables of stone written with the finger of God." An Assyrian king named Assurbanipal was said to have about twenty thousand clay tablets in his private library.

For their information dissemination, the ancient world employed a number of methods. The Greeks used runners. The marathon race today is in honor of an Athenian runner who not only ran all the way from Athens to Sparta to call the Spartans to the battle field, but also, after the Persians had been defeated at a place called Marathon, ran a further 35 kilometers to Athens to report the victory, after which he fell down dead after announcing the victory.

The old-talking drums, gongs, etc. were also used to send out information. In emergency situations, a section of the forest could be set on fire to warn people of an impending or sudden enemy attack. All those various means of receiving, storing, and sending information in ancient times have been replaced by the vast array of machines in the modern world. This is what is called information technology, which refers to a host of equipment and materials, essentially computer-based, that are used in the modern world for information receipt, processing, storage, and dissemination. The invention of the printing machine by a German called John Guttenberg; the calculating machine invented by Charles Babbage in 1855; the typewriter invented in 1867 by the Sholes brothers of America; the invention of the telephone in 1876 by a Scot Alexandra Graham Bell; the invention of radio in 1895 by Marches Marcini; the television in 1922 by Johnlogis Baird; the turnaround brought about with the invention of the photographing machine in 1826 by Joseph Niece, a French, and so on have marked a turning point in information technology. From the earliest times to modern times, precisely the twenty-first century, information technology has spanned three distinct stages. These are:

1. Primary stage: use of human labor
2. Secondary stage: use of electrical machines
3. Tertiary stage: use of electronic machines.

The modern age is aptly called the age of machines, or the machine age. This is true in light of the numberless communication gadgets and information equipment that have flooded the market. But the greatest part of this revolution is the computer, which has now revolutionized the modern business world.

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Literature Review: Towards The Revolutionisation of Information Technology On Business Administration and Management.

Okafor (1987) stressed that among the many characteristics that have enabled men to rise above all other forms of life on earth is their ability to communicate across time and space. Many lower animals are capable of transmitting information within their immediate environment, but only man has learned to record information and thus communicate across it. He also transmits information beyond his immediate environment, thereby communicating across space.

The modern man is faced with the surging technology and increasingly complex problems of organization that he has to develop, adapt, and use new methods of dealing with the enormous amount of information generated.

Daily by both the private and public sectors of society.
Atueyi (1995) defines information technology as the host of systems, equipment, and materials, essentially computer-based, that are used to achieve the set goals of an organization in relation to the functions of an office, such as obtaining, storing, processing, and distributing information. According to her, technology has evolved the function of the office to rely on different types of improved and standardized equipment. It has also devised varied stages and concepts for effective communication. Organizational communication needs to flow consistently between the units and staff concerned in order to avoid a breakdown. The data or information collected is promptly processed and disseminated to appropriate units of management for effective use.

Molokwu (1993) stated that management involves getting things done through and with people. Management is the accomplishment of desired objectives by establishing an environment that is favorable to performance by people operating in an organized group. This is why management has often been referred to as a system consisting of manpower, machines, money, materials, and methods. If any of these components prove defective, there are bound to be some problems. Management follows a set of objectives where there are no objectives. Where there are no objectives or aims to be achieved, there is no management, for it is the goal of the organization or business that directs management. Every business is established with the achievement of certain aims and objectives in mind. These aims and objectives have to do with human needs. Management is the planning, organizing, and controlling of the total business activities and the

leading of people so that the use of materials' men and equipment results in the efficient achievement of the planned and desired objectives.

Positive Effects of Information Technology on Business Management

It will be saying the obvious and being repetitive to state here that man cannot exist here on earth without a proper information network and adequate communication flow. The greatest portion of man's life depends on information generation, receipt, storage, retrieval, and dissemination.

Information technology, which includes all the items of machinery or equipment necessary for the transformation of data into a finished product, has had tremendous effects on the management of businesses. The shift from the traditional method, which is the use of manual methods of information handling, to the electronic method, which is the use of computer-based equipment, is a big blessing to the modern business world. The effects of information technology on the positive aspects include:

Improved Efficiency and Secrecy

Atueyi (1995) noted that the emergence of information technology has given a new and improved life to communication in the office. This assertion implies that it is smoother now and less cumbersome to communicate in a modern office with modern information or communication equipment than it was a decade ago.

Stanley and Show (1978) emphasized that the conventional duties of information personnel are confidential in nature at various levels. Azuka (1995) stressed that much time is wasted in a non-automated office, and there may be information leakage because many hands are involved. Little or no efficiency may be achieved. Information technology has made it possible for the operations of information handling in a business to be very evidently efficient. This is down with respect to document formatting, automatic pagination, right margin justification, material or item insertion in an already typed document, error correction, etc.

Reduction of Tedious Manual Work

The workload of information service personnel has been greatly reduced as a result of information technology. The introduction of the computer, for instance, in the 1960s obviously

revolutionized the business world more than anything else and made it much easier for information generation, receipt processing, storage, retrieval, and dissemination to be performed without tears.Today, very little energy input is required in business management. Therefore, the activation of a machine by a manipulation of the keys starts off the whole process and releases the operator from much manual input.

Higher Productivity, Speed, And Accuracy

Oliver et al. (1990) said that information technology can be seen as a process of producing meaningful information by collecting all items of data together and performing operations on them to extract the required information. This operation is now carried out with astronomical speed. Moreover, the result of such operations is accurate, dependable, and reliable. Information technology has made it possible for data communication networks, which in turn increase the speed of business operations, resulting in higher productivity. Molokwu (1993) observed that since numerous mails that come into the office daily have to be cleared without undue delay, the need for the mechanization of office work becomes inevitable. There have been numerous inventions in recent years in the field of office machines (information technology) in an effort to facilitate work in the office.

Information technology has bridged the communication gap in an organization. Speedy and accurate information is essential for the internal functioning of an enterprise because it integrates managerial functions.Mbanefo et al. (1994) said that information technology impacts business management positively through data collection, conversion of data into machine-readable form, and verification of data.

Negative Effects of Information Technology at NITEL Unemployment and Deskilling

As new technologies are introduced into the business world, the execution of tasks concerned with the transformation and transfer of information is increasing. People are displaced from their jobs. These displaced people go to increase the already-flooded labor market.

Automation has substituted human labor for machines; many jobs formerly performed through the traditional method are now carried out with a high degree of speed and accuracy through the electronic method.

Higher Power Consumption

Information technology has resulted in high power or energy consumption in business offices. Equipment like the computer photocopying machine, duplicating machine, teleprinter, etc. consumes electrical power. The totality of this is higher demand for available power supply from the public power supply. As an alternative, business owners have to provide private power supply, i.e., through generating sets, for use during power outages from the public power supply.

Increase in Business Fraud

There has been a great deal of fraud discovered in the course of business dealings as a result of information technology. The computer, in particular, appears to be the commonest or chief tool in the hands of fraudsters to perpetuate their evil acts. Basically, the computer performs the four mathematical and arithmetical operations of addition, subtraction, multiplication, and division. Although the computer can do these very efficiently, the operator can deliberately key in the wrong data, which the computer has to process and supply the result. The slogan in computer knowledge is Gabbage in, Bagbage Out (GIGO).

High Cost of Services/Production as A Result of High Cost of Information Technology Equipment

The computer is a human wonder that performs numerous operations that are impossible to man if unaided. The computer can do text insertion, delete any portion of a document, perform automatic pagination, wraparound, automatic margin justification, mail merge, global search and replace, formatting, and glossary. To install all these facilities, it costs hundreds of thousands of naira. The computer hardware is not as expensive as purchasing the software applications needed to operate the machines.

Azuka (1995) advised information technology users or operators to ask themselves the following important questions:

1. What is the purchase cost of the machine?
2. What are the maintenance and service plans or policies of the organization?
3. What cost is involved with a service contract?
4. Are parts that may need replacement very expensive or affordable?
5. As additional programs are developed, do users automatically receive them or do they have to buy them?

The above-mentioned questions go to show the cost-implications of information technology. The implication of information business is to add all these costs to the prices of their products or services. It is a problem created for consumers who have to bear the brunt of the high sales price or service charges.

Various Products of Information Technology Used in Business Administration and Management by NITEL the Typewriter

Harrison et al. (1960) observed that the typewriter is an indispensable item of equipment in the office, and there are many styles and models manufactured. A typewriter is a machine with keys for producing print-like characters one at a time on paper inserted around a roller.

According to Okeke and Atueyi, it is the most common office equipment used in information processing.

The Duplicator

The duplicating machine is used to produce documents that are voluminous and repetitive, e.g., handouts, bulletins, tracts, newspapers, textbooks, magazines, journals, etc. This can be done through:

- Stencil process
- Spirit process
- Offset litho process

The Photocopies

Duplication and printing processes produce copies of documents, while the copying process produces a replica of the original. In the copy process, the photocopying machine is used to obtain a copy very quickly and without the possibility of any copying errors, which may occur no matter how good the copy typist may be.

Molokwu (1993) stated that hand copying, typing, and making carbon copies were methods used long ago to produce a few duplicates whenever needed. The volume of written communication in modern business demands that faster methods be used, and as a result, many machines and techniques are adopted to produce duplicates and copies of letters, drafts, reports, etc. Documents are photocopies when one or a few copies are taken directly from the master or

an original, while duplicating is used when substantial numbers of copies are taken from a prepared master copy.

Computer

Harrison et al. (1960) noted that the computer was originally designed to solve the complex calculations of scientists and mathematicians, but its use in present-day business situations is more concerned with handling vast quantities of business data, hence the term 'data processing' which is often used to describe such applications.

The Telephone

A telephone is an apparatus for quick transmitting of sound, especially speed, to a distance, usually by optical or electrical signs.

Okafor (1987) stated that a telephone is an electrical device for transmitting speech and sound to a distant person. It consists of a microphone and receiver mounted on a handset. The telephone converts sound waves into electrical energy, which is transmitted through a telephone wire or by radio to one or more distant sets.

Telephones come under the telecommunications industry in Nigeria. It is under the services or jurisdiction of Nigeria Telecommunications Limited (NITEL PLC), which was incorporated as a public limited liability company under the degree of 1960 on December 1, 1984. But it commenced business officially on January 1, 1985.

Considerations Made by NITEL in Choosing Information Technology Equipment

Molokwu (1993) suggested that choosing information technology equipment or machines to buy is not as easy as one would think. There are different kinds of particular office machines, and care should be taken to determine which one is actually required in the office. The most important consideration is that, based on the kind of work the equipment will perform,

In considering guiding principles for the choice of information equipment, it may be appropriate to illustrate with a typical office duplicator:

1. What length of run is most commonly required?
2. How frequently will the machine be used?
3. What quality of work is often required in the office?

4. What is the speed of reproduction?
5. Can it enlarge or reduce the size of the original document?
6. Durability of image and mastery.
7. How much does the machine or equipment cost?

Azuka (1995) observed that equipment selection for a word processing installation is a difficult task. Technical information about hardware and software is readily available through sources such as vendors, trade journals, consulting firms, equipment shows, and word processing associations.

Personal Characteristics or Business Attributes of Information Technology Personnel at NITEL

Atueyi (1995) stressed that word processing or information technology personnel are expected to exhibit certain qualities in order to cope with the demands of the job. These qualities, characteristics, or skills are dependent on each other and enhance interpersonal relationships in the work environment.

1. Be fast and accurate when typing.
2. Have an interest in machinery.
3. Have a logical mind in order to solve problems.
4. Have a high degree of concentration despite the surrounding noise.
5. Be able to remain seated at the machine for long periods of time.
6. Be able to deal with quotes and have work monitored by a supervisor.
7. Have an understanding of teamwork and the need to coordinate work.
8. Be able to transcribe from shorthand, longhand, or audio with efficiency.
9. Be able to proof-read and spot errors.
10. Have good vocabulary, spelling, grammar, and punctuation abilities.
11. Be creative in formatting new documents.
12. Have a sense of challenge to use the capabilities of the machine to the best possible advantage.
13. Be well organized.

The above personnel and business characteristics and attributes are very necessary for information technology personnel, especially in view of the fact that the modern world has been turned into a global economic village courtesy of information technology.

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RESEARCH DESIGN AND METHODOLOGY

The plan, structure, and systematic process adopted by the researcher for this study were the survey research design. The reason for choosing this type of research design was that a single institution, NITEL, has been singled out for qualitative study and also because of the use of a questionnaire as a survey instrument.

Presentation and Analysis of Data

In this section, the data gathered for the study through the use of the questionnaire will be presented and analyzed. The hypothesis will be tested in order to determine which one will be accepted or rejected.
A total of 37 questionnaires were administered to ten respondents through the test. Only 20 were duly completed and returned to the researcher.

Presentation and Analysis of Data

The data presented and analyzed are in response to the research questions formulated for this study.

Question One

Has information technology made any impact on NITEL in Nigeria?
TABLE 1

S/NO	VARIABLES	RESPONDENTS	%
1	Agreed	12	60
2	Disagree	8	40
	Total	20	100%

The table above shows that twelve respondents representing 60% of the respondents agreed that information technology has made impact on NITEL in Nigeria; while 8 respondents, representing 40% disagreed.

Question Two
What are the various information technology equipment used by NITEL in Nigeria?
TABLE 2

S/NO	VARIABLES	RESPONDENTS	%
1	True	18	90
2	False	2	10
	Total	20	100%

The table able above shows that a total of eighteen respondents representing 90% noted that various information technology equipment was used by NITEL in Nigeria while only two respondents representing just 10% said it is false.

Question Three
In what ways has information technology negatively affected on NITEL in Nigeria?
TABIE 3

S/NO	VARIABLES	RESPONDENTS	%
1	True	2	10
2	False	18	90
	TOTAL	20	10%

The above tabular statement shows that two respondents, representing only 10% said it is true that information technology negatively affected on NITEL whereas Eighteen respondents representing 90% said that it is false.

Question Four
What are the personal characteristics and business attributes required of NITEL STAFF in the age of information technology?
TABLE 4

S/NO	VARIABLES	RESPONDENTS	%
1	YES	18	90
2	NO	2	10
	TOTAL	20	100%

It can be seen for the table that a total of eighteen respondents 90% noted that there is personal characteristics and business attributes required of NITEL staff in the age of information technology; while only 2 respondent representing 10% said it is no

Testing of Hypothesis

The hypothesis stated for this study are"

a. Null hypothesis (H_0)

Information Technology has made no significant impact on the operations of NITEL, Port Harcourt.

b. Alternate hypothesis (H_1)

Information Technology has made significant impact on the operations of NTEL, Port Harcourt.

The above hypothesis is tested using the following formular for chi-squares (x^2)

$$X^2 = \frac{(Fo - Fe)^2}{Fe}$$

Where:

Fo = observed frequency ie the actual data collected from the field from the re respondents

Fe = expected frequency. Summation of the ratio of all the categories

TABLE 6

Frequency Table s

S/NO 1	VARIBLES Expected frequency (f_e)	NULL 10	ATIERNATIVE 10	Total 20
2	Observed frequency (f_0)	6	14	20

$$X^2 = \frac{(6-10)^2}{10} + \frac{(14-10)^2}{10}$$

$$= \frac{(16)}{10} + \frac{(16)}{10}$$

$$=1.6 + 1.6$$

$$= 3.2$$

Degree of freedom (df) = n-1
Critical table of values of 3.2 under difference 1=2.71

Decision Rule

Since the critical table of 3.2 is 2.71 which is less than the critical value of chi-square (X^2) the null hypothesis that information technology has not made any significant impact on NITEL is rejected while the alternative hypothesis is accepted.

Summary of Results
From the data presented above, a summary of the results or findings can be presented; thus, respondents overwhelmingly agreed that information technology has a great impact on the operation of a business. NITEL, inclusive, believes that the various equipment of information technology is the general availability of information. Also, there are personal characteristics and business attributes required of NITEL staff in the age of information technology.

CONCLUSION

From the data gathered from this study, the researcher draws the following conclusions:

- Information technology has made a tremendous impact on the administration and management of business at Nigerian Telecommunication (NITEL) in the twenty-first century.
- The various machines or equipment resulting from information technology require adequate and efficient handling for proper functioning and maximum output service.
- It is true that information technology has revolutionized the operations of the modern business world, NITEL included.
- The introduction of information technology has not brought about the ugly incidence of staff retrenchment at NITEL.

- No business can survive without information technology, and certainly NITEL cannot, being at the center of information dissemination in the country.

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