

THE EFFECTS OF INFORMATION COMMUNICATIONS TECHNOLOGIES (ICTs) ON ECONOMIC DEVELOPMENT – NIGERIA’S EXPERIENCE

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Abstract

The study examines the impact of information communications technologies (ICTs) on the economic development of a country with particular emphasis on Nigeria. The focus was on four Nigeria-based organizations, two of which were in the finance industry, one was a core government ministry while the fourth was a multinational company. Data were collected from both primary and secondary sources on the effect of ICTs on the enhancement of access to information and communication, improvement of the quality of human capital resources, among others. The main research instrument used to collect primary data was the questionnaire complemented by personal interviews and observation. A total of 88 respondents were reached, and 64 returned their responses, which were used in the analysis. Data collected from the field were classified, tabulated, and analysed using frequency distribution tables by percentages and numbers. Based on the findings, it was recommended that organizations should widen the scope of their applications of ICTs tools, train staff, improve electricity supply and use the internet to advertise their products and services online.

Introduction

The most profound dramatic changes taking place in the world today are in the area of information communications technologies (ICTs). As far back as the 18th century, mass production was made possible, following a series of machine inventions, culminating in scores of positive changes in production methods, transportation systems, modes of communication, marketing and sales of goods and services.

One of the most significant developments leading to the invention of the personal computer (PC) was the invention of the semi-conductor or transistor in 1948. The transistors replaced the much larger vacuum tube and consumed significantly less power in performing tube jobs. Thus, a computer built with transistors was much smaller and more efficient, thereby ushering the society into the computer age or information age - the

most advanced development so far attained by mankind.

The technological revolution has been integrated into virtually every aspect of commerce, military, education, governance and has become a critical factor in access to information and wealth across the world. Lack of access to ICTs is widely recognized as an increasing powerful obstacle to economic development of any country.

The importance of computerized information system cannot be overemphasized given the pressure on the management of industrial and business concerns to adopt more efficient methods of production. Given the current global economic trend in which industrial boundaries are fast disappearing, many competitive organizations are reengineering their operations. Such reengineering and

reprocessing require substantially the application of the ICTs.

Electronic transactions have replaced paper-based transactions. Companies have set up websites to inform and promote their products and services online. Government establishments equally own their websites to upload their data for public consumption globally. According to Kotler (2003: 33), the internet will create new winners and bury the laggards. The information superhighway can dispatch bits at incredible speed from one location to another. Organisations can now search for and collect data from various sources across the world, analyse them to enhance the value of decision making.

However growth in the application of ICTs is seriously being hindered by deficiencies in the infrastructural facilities, particularly in the area of electricity supply owing to our own low level of economic development. Telecommunication is no longer seen as a luxury in developing countries, including Nigeria, but as a prerequisite for a nation's development. The base for a nation's development must be its own resources, both material and human, fully utilized to enhance standards of living of the citizens.

The 21st century is characterized by rapid development and growth in the economies of many countries made possible by the wide application of the ICTs tools. Knowledge and access to information is enhanced tremendously leading to increased business innovations that give one organization competitive edge over others. Just as companies are fast moving up, so also are countries, due to sustained investments in technologies in their attempts to improve the welfare of their people. It would be frightening to imagine the consequences of failing to join the current advances in the ICTs.

From the first computer sold to the Nigerian Ports Authority by ICL in 1948 and the 1963 computer hired to assist in the processing of the national census data, Nigeria has made a good start in the adoption of the ICTs. But, the pace of computerization has been affected by bad economic situation.

Virtually every sector of the Nigerian economy has embraced the application of the ICTs in its operations today. The quality of life in the developing world, Nigeria inclusive, is poor, compared with that obtainable in the advanced countries. This is traced to the digital or technological gap existing between Nigeria and advanced countries. To compete globally, many companies and countries resort to the ICTs for improved efficiency in accelerating the speed of transactions and enhancing the value of decision making. Undoubtedly, the ICTs serve as pivot on which the development of any country or organization revolves. Hence, its importance cannot be overstated.

The ICTs create wealth, expand the economy, enhance productivity, improve access to information, create jobs and guarantee buoyancy of quality of life for the people. Buying and selling go on every second on the internet. Now, it is possible to find information on nearly every topic at the touch of a finger upon a keyboard or mouse. There has been a paradigm shift in the way business relates to the world. From your home or office, you will be able to gather and share information, interact with others and take active part in adventures and discussions. Written correspondences that once took days to be delivered can now be read within seconds after being sent.

Technology is now a factor of production. In the face of such a radical change, a country, such as the giant of Africa, Nigeria, cannot afford to sit on the fence. It is believed in many informed circles that for economic development to take place today, technology must be at the heart of it all.

This study is an appraisal to determine whether Nigeria is also experiencing economic development following the application and adoption of the ICTs. The main objective of the research is to determine the effect of the ICTs on the economic development of a country, with particular emphasis on Nigeria. Focussing on four Nigeria-based organisations, the research seeks to unearth and bring to the fore the effect of

the application of the various tools and components of the ICTs as they affect economic activities in Nigeria. Specifically, the study aims at evaluating the effect of the application of the ICTs on the:

- (1) quality of life and standard of living of Nigerians;
- (2) enhancement of access to information,
- (3) improvement of the efficiency of organizations in Nigeria, and
- (4) improvement of human capital in Nigeria.

Conceptual and theoretical framework

The Concept of ICTs

The term Information Communications Technologies (ICTs) is commonly used to refer to all devices and components in collecting, storing, retrieving, analyzing, transmitting information in an organization. These devices include the telephone, computer, radio, television, fax machines etc.

For the purpose of this study, ICT includes computing, communications and control systems all based on digital micro electronic components or chips.

Having seen the terms: information, communication and technology, as a single concept, let us examine them separately.

Information and Communications

Perhaps, it is appropriate to start by differentiating information from data. While data refer to raw facts not yet processed, information connotes processed data that can be understood by and useful to the recipient. In the social and management sciences, data include opinion, motive, intention, attitude, event and others. Lucey (1997) defines data as the term for collection of facts and figures, hours worked, invoice values, part numbers, usage rate, items received. The same source refers to information as data that have been interpreted and understood by the recipient of the message. In today's information age, data include numbers, graphics, voice, picture, video and others. These data are collected, stored, organized, analysed and transformed by the user to enhance decision making.

Communication or data communication refers to the transformation of data and information between two or more computers via a communication channel. Such a communication channel can be a telephone line. The ability to instantly and accurately communicate information is changing the way people and business interact with one other today. Applications, such as video conferencing, voice mail, internet, fax, telecommuting, electronic data interchange (EDI), among others, rely on

communication technology. Communication is absolutely indispensable in carrying out management task and for linking with the external environment.

This is where management information system (MIS) comes in. MIS is the combination of human and computer-based resources that results in the gathering, storage, retrieval, analysis, interpretation, comparison and communication of data for the purpose of efficient management of operations and for business planning in a timely, efficient and effective way. Often, managers are required to collect raw data and process them into useful information. Such information is provided to those who need it at the appropriate time and in a form that can be easily used to make decisions for the day-to-day operations of organizations. MIS collects, organizes and distributes data in such a way that it meets the information needs of management. It does this by getting the right information into the hands of the right people on a timely, efficient and cost-effective manner. The basic components of MIS are data gathering, storage, transmission and information utilization.

When information is processed so that management can use it to make decisions, the basis for an MIS exists. By examining the

information available, management can decide which actions are most realistic in the light of the information provided. Information that is not available to management has no decision making value.

By examining the information available, management can decide which actions are most realistic in the light of the information provided, especially in today's competitive global business environment.

Technologies

Technology as a term comes from a Greek world 'Tekhnologia' which is made up of two words 'Tekhne' meaning an art or skill and 'logia' which means an area of knowledge or study. Myerson (1990), therefore, defined technology as the study of an art or skill. Technology enables mankind to exercise control over the environment and put to practical use scientific discoveries in industries and in the fabrication of machines such, as the pulley and the levers, to supplement our capabilities. Technology must be appropriate to a given level of

development because technology is only possible if society is adequately developed to support it in terms of labour skill, communication, among others.

Technology deals with the tools and techniques for carrying out the plan and designs acquired from engineering. No society progresses without technology, therefore technology is pervasive. The wide gap between the advanced nations and third world countries is largely as a result of differences in the level of technology available to them.

The concept of Economic Development

According to Case and Fair (1994: 539), while the developed nations account for only about one quarter of the world's population, they are estimated to consume three quarters of the world's output. This scenario leaves the developing countries, of which Nigeria is one, with about three-fourth of the world's people, but only one-fourth of the world's income. The simple result is that most of our planet population is poor, and sadly so.

Economic development is viewed as a process which enables people to achieve their potential, build self-confidence and consequently lead lives of self fulfillment and dignity. It necessitates fundamental changes in the structure of the economy. Economic development is characterized by tremendous improvement in health, housing, education, food, culminating in a higher average level of material well being.

Methodology

The methods and procedures utilized in carrying out the research were as follows:

Sample and Sampling Technique

The study used random sampling technique in which questionnaires were administered to the staff of the four organizations. All have introduced the ICTs in their operations. These include NEXIM, UBA, Ministry of

Finance, and the Nigerian Bottling Company Plc. Eight-eight questionnaires were administered, while only 64 were properly filled and returned and used in the analysis.

Sources of Data

The study made use of both primary and secondary sources of data. For the primary data, questionnaires were administered to the staff of the four organizations selected for the study. The researcher personally administered

the questionnaires to respondents and also retrieved them after completion. Data collected from secondary data were from textbooks, journals, bulletins, the internet, among others.

Data Analysis Technique

Simple percentages were utilized to analyze the data collected from the field.

Data Presentation, Analysis and Discussion

Data collected from the field have been presented as follows:

Table 6.1: Whether the selected organizations have computerized their operations

Options	Frequency	Percentage %
Yes	64	100
No	0	0
Total	64	100

Source: Field Data, June 2011

Table 6.1 shows that 64 respondents or 100% admitted that their organizations have computerized their operations.

Table 6.2: Whether the use of ICT tools has improved operations

Options	Frequency	Percentage %
Yes	64	100
No	0	0
Total	64	100

Source: Field Data, June 2011

Table 6.3 indicates that all 64 respondents pointed out that the introduction of the ICTs tools has improved their operations.

Table 6.3: Nature of Improvement

Options	Frequency	Percentage %
Economy	10	16
Speed	12	19
Accuracy	10	16
Efficiency	8	12
Effectiveness	12	19
Reliability	12	19
Total	64	100

Source: Field Data, June 2011

Table 6.3 shows that 16% of respondents indicated speed, 19% indicated effectiveness and reliability. 12% indicated efficiency, 16% indicated accuracy, and 10% indicated economy.

Table 6.4: Other devices adopted to improve operations

Device	Frequency	Percentage (%)
Internet	22	34
e-commerce	14	22
Fax machines	20	31
Automated teller machines	-	-
Intranet	4	6
Extranet	4	6
Smart cards	-	-
Total	64	100

Source: Field Data, June 2011

Table 6.4 shows that 34% of respondents said each said intranet and extranet are used by their organizations use internet, 22% said e- their organizations while no respondent commerce, 31% indicated fax machines, 6% indicated ATM or smart cards.

Table 6.5: Whether organisations have put to use the following ICT tools

ICT Tool	Frequency	Percentage %
Telephone	36	56
Teleconferencing	-	-
Telecommuting	-	-
Video conferencing	-	-
Electronic data interchange	12	19
Local Area Network	10	16
Wide Area Network	6	9
Total	64	100

Source: Field Data, June 2011

Table 6.5 shows that 36 respondents or 56% of respondents indicated that their organizations make use of telephones including GSM, 19% or 12 respondents said EDI, 16 indicated LAN while 9% said they make use of WAN. No respondent ticked teleconferencing, telecommuting and video conferencing meaning they have not yet being put to use in the selected organizations.

Table 6.6: Level of satisfaction with supply of electricity

Options	Frequency	Percentage %
Very satisfied	-	-
Somewhat satisfied	2	3
Indifferent	10	16
Somewhat dissatisfied	22	34
Very dissatisfied	30	47
Total	64	100

Source: Field Data, June 2011

We can see from Table 6.6 the differing opinions. Only 3% are somewhat satisfied with the level of electricity supply, no respondents is very satisfied, 16% are indifferent while 34% of respondents are somewhat dissatisfied, 47% said they are very dissatisfied with electricity supply needed for the full actualization of the benefits of the ICTs.

The summary of findings indicate that following their adoption, the ICTs enhanced access to information and communication and improved the efficiency of the organizations.

Conclusion

The study x-rayed the fast-paced technological revolution sweeping across the world with all its attendant benefits and examined the effect of the ICTs on the economic development in Nigeria. Results indicated an improvement in the efficiency and operations through enhanced access to information and improved the efficiency of the human capital of some selected organizations, which had adopted the ICTs.

There were observable evidences in the course of investigation that even though there was some tremendous level of computer application, a lot still needed to be done. For

instance, even in the organizations that have adopted computers, research survey revealed that many of their staff have no knowledge of computer usage.

Also the application of the available ICTs tools was found to be limited to a few uses, thus leaving out so many value-added benefits of the ICTs.

The parlous state of infrastructure, such as electricity, has greatly limited the positive impact the ICTs would have had on the economic development of the country. Without electricity, the computer is virtually useless.

Recommendations

Based on the findings of the study, the researcher made the following recommendations:

- (1) Since organizations have appreciated the use of the ICTs and have adopted computers, staff should be trained on how to use them for maximum benefits. In today's information age, anyone who is not computer literate is regarded as an illiterate person, his or her level of education notwithstanding. Continuous training of staff on the ICTs tools will also improve the human capital resources in the country.
- (2) Organizations should widen the scope of their computer applications so as to derive more value added benefits. The computer is not just a typewriter, it can do a lot more. This will also create more jobs for people with such skills.
- (3) Since the computer is useless without electricity, the concerned authority, Power Holding Company of Nigeria (PHCN), should improve on the supply of electricity to enable users gain maximum value and boost productivity.
- (4) For economic development to take place, technology must be recognized as a factor of production that contribute to business success and should not be ignored. The use of the ICTs will improve even more the efficiency of organizations.
- (5) People should take advantage of the investment opportunities and invest more in the ICTs to enhance their income and create more wealth.
- (6) To take advantage of improved access to information and communication, organizations should make more use of the internet and e-commerce by advertising their products and services online.

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