

## INFORMATION AND COMMUNICATION TECHNOLOGY AND BANKS PROFITABILITY IN NIGERIA.

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### ABSTRACTS

*The role of information in the actualization of various organizational objectives cannot be over-emphasized as it ensures prompt delivery of resources essential to attain an enviable end. The contemporary business milieu is very dynamic and experiences rapid changes due to creativity, innovation, hi-tech changes, increased perception and demands from clientele. Business organizations, especially the banking industry, is operating in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate with Information and Communication Technology (ICT) at the centre of the change curve. Using a primary data sourced through a structured questionnaire administered to selected banks in south-west Nigeria and the Ordinary Least Square econometric techniques, this study examined the nature of the relationship that exists between Banks Profitability and the Adoption of Information and Communication Technology. The data analysis showed that a positive correlation exists between ICT and banks profitability in Nigeria. This implies that a marginal change in the level of the investment and adoption of ICT in the banking industry will result to a proportionate increase in the profit level. This is confirmed by the level of the regression coefficient as well as the factor analysis which revealed that an insignificant size of profit exists without the introduction of the ICT.*

**Keywords:** *Information, Communication, Profitability,*

### 1. INTRODUCTION

From time immemorial, Information has always played a prominent role in human life but the emergence of social progress and the vigorous development in science and technology has immeasurably increased the role of information in every facet of human endeavour. The rapid expansion of a mass of diversified information has born the term “information explosion” and gave rise to a scientific approach in information and elucidation of its most characteristic properties which has led to principal changes in interpretation of the concept of information. It was broadened to include information exchange not only among men but also among machines as well as the exchange of signals in the animal and plant worlds. The pace of change brought by new technologies has had a significant effect on the way people live, work, and play globally.

Today’s business environment is very dynamic and experiences rapid changes as a result of creativity, innovation, technological changes, increased awareness and demands from customers. Business organizations, especially the banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate with Information and Communication Technology (ICT) at the centre of this global change curve.

Laudon and Laudon, (1991) contend that managers cannot ignore Information Systems because they play a critical role in contemporary organization. They point out that the entire cash flow of most fortune 500 companies is linked to Information System. The application of information and communication technology concept, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and a prerequisite for local and global competitiveness. ICT directly affects the various management functions of planning, organising and the nature of services offered in the banking industry. It has continuously changed the way banks organised their corporate relation worldwide with the variety of innovative devices available to enhance the speed and quality of services delivery.

Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practice to remain viable in the 1990’s and the decade beyond. Thus, ICT has emerged as a catalyst in the various industries of the world to aid the process and procedure required to ensure the realization of various organisational goals.

The role of ICT in the banking sector became of interest to this study due to the significant role it plays in the economy by stimulating economic growth through the intermediation of funds to economic agents that need them for productive activities. This function is very vital for any economy that intends to experience meaningful growth because it makes arrangements that bring borrowers and lenders of financial resource together and more efficiently too than if they had to relate directly with one another (Adam, 1998; Ojo, 2007).

Hence, the objective of this study is to examine the role of information and communication technology in ensuring efficient service delivery in the banking industry as a strategy for the actualization of the profit maximisation objectives of banks.

## 2. LITERATURE REVIEW

Managers cannot ignore Information Systems because they play a critical role in contemporary organisation. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery.

Information and Communication Technology (ICT) is the automation of processes, controls, and information production using computers, telecommunications, software's and other gadget that ensure smooth and efficient running of activities. It is a term that largely covers the coupling of electronic technology for the information needs of a business at all levels. ICT has surpassed the role of support services or only electronic data processing; its fields of applications are slightly global and unlimited. Its devices especially the Internet and modern computer email facilities have further strengthened early modernizations like the telephone and fax. Other ICT devices include data recognition equipment, factory automation hardware and services, telecomputing and teleconferences using real time and online system (Adeoti, 2005).

It is a concept that is having a remarkable effect on almost entire aspects of the human endeavours. This implies that it involves the application of principles to engage physical component in achieving an intended goal. The merging of computer and telecommunication after about four decades of applying computers to routine data processing, mainly in information storage and retrieval, has created a new development where information has become the engine of growth around the world. This development has created catch-up opportunities for developing countries such as Nigeria to attain desired levels of development without necessarily 'reinventing the wheels' of economic growth. This new technology has brought far-reaching revolution in societies, which has tremendously transformed most business (banking) scenes (Ovia, 2005).

Irechukwu (2000) itemized some bank services that have been revolutionized through the use of ICT as including account opening, customer account mandate, and transaction processing and recording. Information and Communication Technology has provided self-service facilities (automated customer service machines) from where prospective customers can complete their account opening documents direct online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards. ICT products in use in the banking industry include Automated Teller Machine, Smart Cards, Telephone Banking, Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office Banking.

Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and beyond, they claim that the most significant shortcoming in the banking industry today is a wide spread failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly, Woherem (2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply ICT to their operations are likely to survive and prosper in the new millennium. He advises banks to re-examine their service and delivery systems in order to properly position them within the framework of the dictates of the dynamism of information and communication technology. The banking industry in Nigeria has witnessed tremendous changes linked with the developments in ICT over the years.

Brücher, Scherngell et al. (2003) opined that ICT adoption will improve three critical domains which are efficiency, quality, and transparency in any organisation. Agboola et al (2002) discussed the dimensions in which automation in the banking industry manifest in Nigeria. They include: Bankers Automated Clearing Services: Automated Payment Systems, Automated Delivery Channels.

Ovia (2001) concluded that banking in Nigeria has increasingly depended on the deployment of Information Technology and that the IT budget for banking is by far larger than that of any other industry in Nigeria. He contended that On-line system has facilitated Internet banking in Nigeria as evidenced in some of them launching websites. He found also that banks now offer customers the flexibility of operating an account in any branch irrespective of which branch the account is domiciled.

Woherem (2000) revealed that Nigeria banks since 1980s have performed better in their investment profile and use of ICT systems, than the rest of industrial sector of the economy. An analysis of the study carried out by African Development Consulting Group Ltd. (ADCG) on IT diffusion in Nigeria shows that banks have invested more on IT, have more IT personnel, more installed base for PCs, LANs, and WANs and a better linkage to the Internet than other sectors of the Nigerian economy. The study, however pointed out that whilst most of the banks in the west and other parts of the world have at least one PC per staff, Nigerian banks are lagging seriously behind, with only a PC per capital ratio of 0.18.

Ovia (2005) opined that the revolution in ICT has made the banking sector changed from the traditional mode of operations to presumably better ways with technological innovation that improves efficiency. ICT can enhance efficiency via its use and in recent times banks have been encouraged by the rapid decline in the price of ICT gadgets. This has perhaps increased the bank level of ICT usage. The increase might have also been attributable to business environment that became relatively flexible to accommodate new forms of technological change as a result of reforms in the country.

According to Wali (2010) the relationship between ICT and the various organisational activities is similar to government & civil servants while Governments outlines policies and civil servants execute those policies. ICT acts as a tool for the actualization of various organisational activities in order to implement and enforce policies. Osabuohien,(2008) established that while the gender of the bank officials does not affect efficiency in ICT use, factors such as age, educational qualification, computer literacy and type of ICT gadgets, were significant in influencing banks' intensity of ICT usage. Also ICT was found to impact positively the speed of banking service delivery, as well as productivity and profitability.

Banks should incorporate ICT into their strategic plans for effective performance in payment and delivery systems. This calls for proper analysis to determine the type, nature and extent of ICT products required for effectiveness and efficiency. It is imperative for bank management to intensify investment in ICT product to facilitate speed convenience and accurate service. Orhan (1997) observed the relevance of a modern information infrastructure to the economic and social well-being of a society as the quality of the information determines the effectiveness of any given choice. Wisdom, knowledge and information infrastructures promote dialogue between those holding various ideas. It is only in an atmosphere where reliable facts and figures are available that citizens can form opinions, express preferences, hold government officials accountable for their actions, and that democracy can thrive and reach a consensus on the policy options towards desired objectives.

### **3. THEORETICAL BACKGROUND**

The banking business is becoming highly ICT based due to its inter-sectoral link; it appears to be reaping most of the benefits of revolution in technology, as can be seen by its application to almost all areas of its activities (Akinuli, 1999). It has broadened the scope of banking practices and changed the nature of banking as well as the competitive environment in which they operate. A broad opening has been experienced around the world for banks and they are currently taking due advantage of these innovations to provide improved customer services in the face of competition and faster services that enhance productivity (Akinuli, 1999; Ovia,2005).

Technological advancement facilitates payments and creates convenient alternatives to cash and cheque for making transactions. Such new practices have led to the development of a truly global, seamless and Internet enabled 24-hour business of banking. Technological advance in payments are important due to the fact that it will be feasible to outsource quite a number of the banks' role in the payments system. Also banks' regulation can be more technologically dependent and better focused rather than focusing on conceptual guidelines. ICT revolution both in terms of innovation rate, speedy operation, and cost per unit (portraying reduction in average total and marginal costs) has made a good number of banks embrace the use of ICT infrastructure in their operations (Akinuli, 1999). However there may be little interruptions at times due to network failures, which may make customers unable to carry out transactions at a particular point in time. This little shortcoming is not in any way comparable to the days when banking halls were characterized by long queues mainly as a result of delays in the traditional banking operations.

### **4. HYPOTHESIS**

In order to establish the nature of the relationship between ICT and Banks profitability in Nigeria, the Hypothesis listed hereunder was tested.

*Hi:* A positive relationship exists between ICT adoption and Banks Profitability in Nigeria.

**5. METHODOLOGY**

This study used a descriptive survey design. The purpose of descriptive surveys, according to Ezeani (1998), is to collect detailed and factual information that describes an existing phenomenon. The target population of the study was banks in Nigeria. A sample of three banks were chosen, they are Zenith Bank Plc, Union bank Plc, and First Bank Plc of Nigeria in Ijebu Ode Branch, Ogun state. A total enumeration sampling technique was used to select 90 personnel who provide response to a structured questionnaire design to solicit their view about the role of ICT in profitability of Banks in Nigeria.

The questionnaire was specifically designed to accomplish the objectives of the study. The first section collected information such as age, sex, experience, professional status, marital status and position, while the second section contained 12 questions that measure the role of ICT in profitability of Banks in Nigeria., using a Likert scale of five points: Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. There are 90 respondents. Of these, 58 (64.4%) were males; while 32 (35.6) were females. Their age ranges from 22-46 years, with a mean age of 34years. The academic qualifications of the participants are: OND, NCE, B.Sc., B.Ed., MSc, MBA, M.A. The Ordinary Least Square method (OLS) was used in analysis which comprises various tests such as **t-test, f-test, r<sup>2</sup> and the adjusted r<sup>2</sup>**

**6. HYPOTHESIS TESTING**

**Hi:** A positive relationship exists between ICT adoption and Banks Profitability in Nigeria.

The findings showed that the majority of the respondents have perceived the ad-on value of ICT in the discharged of their various task and concur to the fact that pace setting in the industry in terms of service delivery, competence and retention of best brain is a function of the level of ICT adoption inter alia. This is confirmed in tables1 and 2 (see appendix for table 2).

**Table 1: Presentation of Results**

Dep.Variable organization performance	Co- efficient	t-value	Sig.	R	R <sup>2</sup>	R <sup>2</sup> Adjusted	F Ratio	Sig.
Constant	19.639	7.600	0.000	0.696	0.329	0.218	24.605	0.00
I C T	5.179	1.614	0.000					

**Source:** *Author's Computation (2010)*

The meanings of the various statistical tool used in analyzing the model of this research work were given as follows:

The **Co-efficient of correlation (r)** shows the degree or extent of relationship between the dependent and the independent variable. The value of 0.696 in table1 shows the existence of a positive relationship between these variables. It equally reveals a good degree of dependency of the dependent variable to the independent variable.

The **Co-efficient of Determination (R<sup>2</sup>)** explains the proportion of the total variations in the dependent variable that is attributable to the variations in the independent variable. From table 1, it was revealed that about 32.9% (0.329) of the variations in the dependent variable are attributable to variations in the independent variables.

The **Adjusted Co-efficient of Determination (R<sup>2</sup> Adjusted)** which shows the actual variations in the dependent variable attributable to the independent variable. Table 1 above reveals that the adjusted co-efficient of determination is 0.218 which implies that the actual variation is 0.218% as against the 32.9% suggested by normal R<sup>2</sup>.

The **Student t-test (t-test)** shows the significance of individual parameters used in the model reveal a significant estimator as all variables under consideration at 5% level of significant.

The **F-Statistic (F-ratio)** shows the overall significance of the model and evaluates the goodness of fit model by testing its explanatory power of the model. The model is significant because the calculated F-ratio of 24.605 is greater than the table values of 3.92 at both 5% levels of significance.

## 7. DISCUSSION

The findings of this study reveal that a positive correlation exists between ICT and banks profitability in Nigeria. This implies that a marginal change in the level of the investment and adoption of ICT in the banking industry will result to a proportionate increase in the profit level. This is confirmed by the level of the regression coefficient as well as the factor analysis which revealed that an insignificant size of profit exist without the introduction of the ICT. The results in Table 1 shows that banks that have a high level of ICT will make intensive use of production and efficiency practices such as business re-engineering, outsourcing and flexible work arrangements which will yield the best performance.

According to Milgrom and Roberts (1990) they argued that to be successful, firms typically need to adopt ICT as part of a "system" or "cluster" of mutually reinforcing organizational approaches. The underlying argument behind the bundling of ICT and organizational performance is that it enables firms to introduce organisational changes in the areas of re-engineering, decentralisation, flexible work arrangements, outsourcing, lean production, team-work and customer relations. It also allows firms to produce with greater flexibility and shortened product cycles to satisfy shifting consumer preferences. In turn, these organizational changes are essential for realizing the full benefits of ICT in every entity.

## 8. CONCLUSION AND RECOMMENDATION

Concerns about ICT role in attaining effectiveness, efficiency and productivity were raised in the late 1980s. Since then a large number of studies have emerged both at the industry and firm level that have substantially improved our understanding of the relationship between ICT and firm performance. In particular, the firm-level studies have argued than an explanation for the so-called "productivity paradox" can be attributed to an insufficient response of organizational changes to adapt to changing business environment, to make better use of knowledge, technology and human resources, to respond to new demands from suppliers and customers, and to use ICT effectively (OECD, 2002; Sharpe, 1999).

Presently, Information and communication technology has received great thoughtfulness across various industries and substantial positive effect on bank's profitability, cashiers work, banking transaction, patronage, services delivery, customer's services among other. Hence, it is recommended that more attention has to be directed towards the use of Information and communication Technology in banking operations since the industry serve as a lubricant to the cog of the wheel of the nations' economy while appropriate policies must be put in place to ensure proper monitoring and the determination of the optimum size required to attain organisational efficiency.

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## APPENDIX

**TABLE 2: PERCENTAGE DISTRIBUTION OF RESPONDENTS ON VARIABLES**

	STATEMENT	SA (%)	A (%)	U (%)	D (%)	SD (%)	CUMM%
1	Our bank policy covers the development of ICT in the Nigeria banking Sector	57.8	42.2	0.00	0.00	0.00	100.0
2	The impact of banks regulatory authorities is left in the development of banks operation through IT.	14.4	47.8	20.0	16.7	01.0	100.0
3	Good business strategy on banks does not enhance profitability increase.	4.4	28.9	15.6	28.9	22.2	100.0
4	Information technology in my bank produces required information timely.	41.1	58.9	0.00	0.00	0.00	100.0
5	Information technology has positively impact the performance of my bank	41.1	43.3	4.4	6.7	4.4	100.0
6	We have technical know-how to operate the IT in my bank	25.6	52.22	11.1	8.9	2.2	100.0
7	The cost of acquiring information technology in my bank outweighs its benefits	36.7	45.6	1.1	15.6	1.1	100.0
8	There is adequate internal control over operations of technology in my bank	37.8	45.6	7.9	8.9	0.00	100.0
9	Information technology enables my bank to deliver quality services to our customers	36.7	63.3	00.0	00.0	00.0	100.0
10	There are constant updates on the development of IT in my bank	11.1	32.2	01.1	55.6	00.0	100.0
11	Information technology enhances the speed of service delivery	25.6	51.1	23.3	00.0	00.0	100.0
12	Information technology reduces paper work in my bank	10.0	18.9	18.9	23.3	28.9	100.0

Source: Field Survey, 2010

Key: SA = Strongly Agree      A = Agree      U = Undecided  
SD =Strongly Disagree      D = Disagree