IMPACT OF INFORMATION COMMUNICATION TECHNOLOGY ON BANK PERFORMANCE OF SELECTED BANKS IN ONDO STATE NIGERIA

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ABSTRACT

This study examined the Impact Information Communication Technology on Bank Performance of selected banks in Ondo State. The findings reveal that technology innovation has influenced Nigerian banking industry performance. The introduction of information technology communication has influenced customer satisfactions. Thus the followings are drawn. The implication of information communication technology had really enhanced the profitability of banks. Also it reduces management costs of banks. Also, it was concluded that information communication technology has contributed to the effectiveness of staff thereby aiding accuracy and speed. This study found out that the use of information communication technology had reduced stress in banks operations, despite all the implications of information communication technology had brought to the stakeholders, it was concluded that *the business environment in Nigeria hinders the smooth operations of internet banking in the country*.

Keywords: Information Communication Technology, Bank, Performance

INTRODUCTION

The financial system plays a crucial roles in promoting economic development by separating the saving and investment functions. Virtually, investment in all sectors of the economy, particularly the real sector, made possible by the financial resources in the financial system, could increase the quantum of goods and services (Ibrahim, Muhammad & Gani, 2012). Thus, application of information technology (IT) 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 (Agboola,2005), ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry. Accordingly, bank facilitate economic transaction between various national and international economic units and by so doing, it encourages trade, commerce and industry on the one hand, promoting globalization by easing global access to fund without any barrier. However, it is needless to say that, banking system is able to play the positive role of enhancing globalization only if it has robust Information Technology (IT) as a backstopped. Otherwise, it would constitute bad omen to the development of global economy. This is based academics unanimity of impossibility of globalisation without global agents of payments. The increased demand for ICT in banking sector became imminent and unavoidable in the world at large and Nigeria in particular. Invariably, the future lies in the ICT driven banking systems and services. Banks have embarked on unprecedented deployment of ICT based banking products and services such as Automated Teller Machine (ATM), internet banking, mobile banking solutions, point of sale terminals, computerized financial accounting and reporting, human resources solution among others, of which plays salient roles in enhancing the performance of banks over the world (Ovia, 2005).

Also in recent years, banks have been investing more and more in information technology, not only as a means to reduce costs and improve operations, but presumably also as a key to profitability. With ICT, banks are able to improve on their management of consumer relationships, streamline operation, expand their activities, improve service and minimise risk exposure in a turbulent market (Hoffman, 2008), software solution is helping to optimise branch deliver through facilitating the planning of new site, relocations and closures based on a host of detailed data, such as population demographics and density (Amato, 2009).

The internet cash management services allows business to access balance and payment information, front statements and transfer money between accounts via bank's website (Cavano, 2008). Cavano (2008), noted

that with the advent of the internet, speed had begin to overtake trust in client relationships, and innovation had surpassed tradition, forming a new paradigm economy. He warned that banks that have not rapt pace with latest technology would discover that they cannot deliver the information or services demanded by the new digital economy.

The banking sector is actually an old beneficiary of the offering of ICT. According to Grange Smith & Oppenaim (2004), ICT has played a central role in the development of banking industry for the following reasons. (1) Banks are not contrary to the popular image, primarily in the money busyness. They are in the information business. The primary responsibilities are the capture, distribution, analysis and processing of financial information., (2) It has enabled banks to widen the range of services offered to their customers and transform their operating system, (3) ICT is the largest fixed cost incurred by banks after personnel, (4) ICT has enabled banks to increase the volume of their services, operate at a higher level of efficiency and realise economies of scale (4)The banking sector in Nigeria has witnessed tremendous changes linked with the developments of ICT over the years (5)The struggle for survival, global relevance, maintenance of existing market share and sustainable development has made exploitation of the many advantage of ICT through the use of automated devices imperative in the country. The study attempts to evaluate the response of banks to the development in the world of ICT and to determine the extent to which ICT has contributed to the performance of banks.

LITERATURE REVIEW

2.1 INFORMATION COMMUNICATION TECHNOLOGY AND BANK

PERFORMANCE

Information Communication Technology (ICT) has become the lifeblood of any corporate organisation for growth and development thereby making the entire world moving away from traditional banking to computerised banking applications. Consequently, there has been huge investment in ICT facilities and personnel with requisite skills necessary for the operation of ICT born devices. Banks have been facing the stiff challenges of required hefty fund for investments in human capital, capacity building, deployment of equipments, designing applications, etc due to the ever rapid changing in ICT devices as a result of breakthrough on the one hand and the dynamism of the global ICT industry on the other hand (Abubakar, Gatawa & Birnin-Kebbi, 2013).

However,over the years, banks have invested huge capital in deployment of ICT solutions for front office and back office automation alike. The internet and e-business has not only changed the way organization do business and communicate with their partners but has for many years become a requirement for business survival when it is an avenue to have competitive advantage (Babatunde, 2017 & oherem, 2000). Despite the integration of banking services and operation into information and communication technology, expected and projected performance of banks have not fully emerged as it would have been considering the level of information and commutation technology development. To which much is given, much is expected. Development in information and communication technology ought to bring a level of commensurate performance to the banking industry (Otle, 2009). However the ever-increasing challenges of ICT deployment in conformity with the banking best-practice had remained a burning issue in the banking industry and so need to investigate its relevance on banks performance becomes imperative (Oladele, 2003). It is against this background that this study sets to investigate the role of ICT on bank performance of selected banks in Nigeria.

2.2 Information and Communication Technology and Banking Industry

The application of information and communication technology (ICT) concepts, techniques policies and implementation strategies to banking services has become a subject of fundamental importance and concern to all banks and indeed precipitated for local and global competitiveness. ICT directly affects how managers decide, how they plan, what product and services are offered in the banking industry (Agboola, 2004). Woherem (2000) opined that only banks that overhauls the whole of their payment and delivery system and apply ICT to the operations are likely to survive and prospect in the new millennium. Banking industry in Nigeria has witnessed tremendous changes (Agboola,2004), With the development in ICT over the years and this has led to be quest for survival, global relevance, maintenance of existing market share and sustainable development. This study makes adventure into the world of ICT and examines the extent to which banks have been impacted with this development

By and large, there exists a clear link between the adoption of new e-business technology and innovation (Koelinger, 2006). E-business and ICT investment in general can enable process innovations if the implementation of new ICT succeeds the routine are changed and the new system actually utilised. Over the years, businesses have been including significant investments in information and communication technology. OECD (2003) reveals that the investment in information and communication technology in its member countries has risen from 15% of the total non-residential investment in the early 1980s to between 15% to 30% in 2001.

2.1.1 The Internet

The internet is a global network that enables computers to share and communicate services around the world. The internet is an enormously shared global resource of information and knowledge as well as means of collaborations knowledge as well as means of collaboration and cooperation among countless diverse communities (Internet Society, 2001). Technically, what distinguishes the internet is the use of a set of protocol called TCP/IP (Transmission Control Protocol/Internet Protocol). TCP/IP is the basic communication language of the internet. The internet and e-business has not changed the way companies do business and communicate with their partners, but has many years become a requirement for business survival. In order to be competitive in today's networked business environment, companies must be able to deliver applications and services with real value for their partners (Ling & Yen, 2001). Internet based IT can manage the flow of goods, services and information inside and across organisation, this reducing the basic transaction costs involved in vertical flow of goods and services along a value chain (Bates, 2011).

2.1.2 Information and Communication Technology and Banking Services

Information communication Technology (ICT) is the automation of process and control information production using computers, telecommunication software and auxiliary equipment such as automated teller machine and debit cards while communication is the conveyance or transmission of information from one point to another through medium (Khalifi, 2000). According to Alawode & Emmanuel (2008), an example of new ICT has had impact on the banking industry in that its emergence allows banks to apply credit-scoring techniques to consumer credits, mortgages or credit cards. Hence, products that used to be highly dependent on the banks evaluation of its customers have now become standardised. Other examples of ICT impact on the banking industry include the increased process efficiency which can reduce costs in banks and the branch reward where focus is gradually shifting away from traditional brick and mortar banks towards the dual bank concept.

However, Irechukwu (2000) lists some banking services that have been revolutionalised through the use of ICT as including account opening, customer account mandate, transaction processing and recording. Information and communication technology has provided self-service facilities (automated customer service machines) from where customers can complete their account opening documents. 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, MICR, Electronic Funds Transfer, electronic Data Interchange, Electronic Home and Office Banking (Agboola, 2005). Several authors have conducted investigation on the impact of ICT on the banking sector of the Nigeria economy. Agboola (2001) discussed the dimensions in which automation in the banking industry manifest in Nigeria. They include: (i) Bankers Automated Clearing Services:- This involves the use of magnetic ink character reader (MICR) for cheque processing. It is capable of encoding, reading and sorting cheque. (ii) Automated Payment System:- Devices used here include Automated Teller Machine (ATM), plastic cards and electronic funds transfer. (iii) Automated Delivery Channels:- These include interactive television and the internet.

2.1.3   Information Communication Technology' Infrastructure used by Banks

From a survey on some selected Nigeria banks revealed their uptake in some ICT infrastructures. The outcome of his survey presents the table below.

Table 1

ICT Infrastructures by Banks in Nigeria

S/N	ICT Infrastructures	Percentages of Nigeria Banks that use a particular infrastructure within 2008-2017		
		2008-2010	2011-2013	2014--2017
1.	Internet Access	88%	89%	93%
2.	Internal Wire based network	72%	75%	82%
3.	Wireless	28%	60%	78%
4.	SMS Alert	78%	88%	89%
5.	Substitution of Posted Mail	88%	78%	92%
6.	ICT security measures	90%	92%	94%
7.	Authentication	85%	88%	95%
8.	Automated payment system	87%	92%	97%

Source: Authors Computation, 2018

2.3.1.1 Internet Access

An important indicator of the general uptake of Information and Communication Technology (ICT) in the banking relates to the use and availability of internet. Internet access is a precondition for e-business, as this is the main channel for e-banking. The general availability of internet allows for the analysis of overall ICT-readiness in the banking industry. The table shows that 91% of banks studied in Nigeria have access to the internet within year 2006 and 2008, while 27% and 88% from year 2000 to 2002 and from year 2003 to 2005 respectively was as the result of ICT awareness competitive products introduced by some of the so called new generation banks, virtually all other banks also based up to satisfy their customers and there was general improvement in the services and products of banking industry.

2.3.1.2 Use of Internet Network and SMS Alert

The application of networks is a vital part of an effective ICT enable system which is especially true in the case of banks with a branch network. Local Area Network (LAN) may also be seen as a basic indicator of the minimum infrastructure required to enable companies to conduct e-banking at a substantial level. Wire based LAN is currently the dominating technology. The survey shows that 92% banks surveyed use wire based LAN from year 2006-2008. The fact that LAN is relatively low-tech and easily attainable ICT solution would be some extent explains the wide coverage of this technology from year 2000 to 2008. Wireless LAN is relatively new technology in the banking industry and is used to permit bank employees to access network resources from nearly any convenient location. The fact that wireless LAN is relatively new technology accounts for its low percentage uptake in banking industry. In addition, the instant notification of transactions made was another innovation brought by ICT through the use of smart phones in conjunction with the internet facility in the banking industry. Virtually all banks studied in Nigeria use SMS alert, except some of micro-finance banks. It was an ICT infrastructure that recorded no patronage between year 2000 and 2002.

2.3.1.3 Substitution of Postal Mails

The banking industry is currently being renewed in many areas. One of this areas relate to the digitisation of formerly paper based process. Electronic mail is increasingly being applied from especially non correspondence like account statements, marketing and sales. More than 80% banks surveyed by Alawode and Emmanuel (2009) have substituted electronic mail with old postal mail within year 3006-2008. The outcome shows that, efficiency gains from electronic mail are yet to be reaped and indicates that the industry is a bit fragmented in its update of electronic mail as means of communication.

2.3.1.4 Information Communication Technology Security Measures

The security measure is of special concern in the banking sector as banking is highly based on trust from its customers. The risk of hackers, denial of service attacks, technological failures, breach of customers privacy information and opportunities for fraud created by the anonymity of the parties to electronic transactions all have to be managed. Depending upon its nature and scope, a breach in security can seriously damage public confidence in the stability of a financial institution or of a nation's entire banking system. Hence, by introducing the appropriate security measures and putting security concerns at bay, the banking industry might be able to attract the segments among consumers who previously were inclined to use e-banking. Furthermore, it is also the banks own interest to improve security, as digital fraud can be costly both in financial issues and in terms of the damage it does to the brand of the bank in question.

2.3.1.5 Authentication of Users Information

The common concern among users of e-banking is related to the authentication of users and data collection. The use of digital signature is not a common as PIN codes or encryption and reason is the fact that digital is reactively new technology. The research even shows that none of the studied banks uses digital signature as the form of authentication but the uptake in other types of authentication is generally high up to 85% within year 2006 and 2008.

2.3.1.6 Automated Payment System

Devices used in automated payment system include Automated Teller Machine (ATM) and Electronic Fund Transfer. ATM is still ranked higher in its spread this technology might be due to cost, fear of fraudulent practices and lack of facilities necessary for their operation. But generally speaking, the adoption of automated payment system increased dramatically.

2.12 Technological Perspective

In response to the demands for quick, efficient and reliable services, industry players are increasingly deploying technology as a means of generating insights into customers' behavioural patterns and preferences. Well developed outsourcing support function (technology and operations) are increasingly being used to provide services and manage costs (e.g. Automated Teller Machine networks cards processing, bill payment, software development, call centre operation and network management).

METHODOLOGY

A research questionnaire was designed by the researcher in order to elicit response from the respondents. The population considered in this study is hundred (100), all the staff of ICT department The sample size used is 25 staff of the ICT department and 25 senior staff from other departments of the bank so as to cut across all sector of the bank. Data analysis were carried out through the use of Ordinary Least Square (OLS) method as simple regression analysis. Simple frequency count and percentage will be employed to analyse and interpret the section A of the questionnaire while regression data analysis method will be employed in testing the hypothesis.

FINDINGS

Table 4.1

Regression analysis showing the examination of ICT development on banks' performance

Model	B	St. Error	T	Sig. T	R	R^2	Adj. R^2	F	Durbin Watson
Constant	41.000	8.687	4.720	0.133	0.926	0.693	0.481	-0.038	
X	0.192	0.200	0.962	0.512					

From the above table, the estimated model using Ordinary Least Square Regression is given as follows:

B.P = f(X,U)

B.P = a + bX + U

B,P = 41.000 + 0.192 X

C(8.687) (0.0200)

X = Standard Error in Parenthesis

t = $(4.720) (0.9620)^8$

R = 0.962, R^2 = 0.693, Adj. R^2 = 0.481, F = -0.038

From the above OLS results, it could be inferred that the constant parameter is positively or directly related to Y. The coefficient of the constant parameter (B_0) is +41.000. This implies that if all the explanatory variables are held constant, Y which explained variable will increase by 41.000 units. Also, the coefficient of exchange rate (X) is 0.192 and this implies that a direct relationship exist between Y and X in the short run. The short run equilibrium relationship existing between Y and X conforms to the a priori expectation. The relationship shows that a unit increase in X will cause Y to rise by 0.192 units.The R^2 is relatively high at 0.481 as the explanatory variable (ICT development) in model accounted for 48.1% variation in the dependent variable (banks' performance). The relationship between ICT development and bank performance is high and positive as indicated with correlation coefficient of 0.0693. The overall significant of the model was tested at 5% level using F-statistics (F = 0.926).

4.2 Test for Statistics Significance of the Parameter (t-test)

The t-test is employed to test for the statistical significance of each of the parameter. The test is aimed at comparing the t-calculated with the t-tabulated. The decision rule is to accept the null hypothesis (H_0) if the t-tab is greater that t-cal while the alternative hypothesis (H_1) is accepted if the t-cal is greater than t-tab.i.e. H_0: α 0= 0. Statistically not significant, H_1: α 0 ≠ 0. Statistically significant, The tabulated t, for this study is given as: T_{95} = N – K

Where N = number of years

K = number of variable

N = 50, K = 2

(T_{95} in 100 – 2) degree of freedom (dof)

(T_{95} in 98) dof @ 0.025

t-tabulated = 2.145

Table 4.2
Regression analysis showing the examination of ICT development on banks' performance

Variable	t-cal	t-tab	H_0	H_1	Remark
Constant	4.720	2.145	Reject	Accept	Significant
ICT. D	0.962	2.77	Accept	Reject	Insignificant

The table above shows that the constant parameter is significant enough in the explanation of B.P because the t-cal (4.720) is greater that t-tab (2.145) therefore, we reject the H_0 and accept the H_1. In case of ICT.D, t-cal (0.962) is less that the t-tab (2.145) i.e. t-cal>t-tab. The null hypothesis (H_0) is accepted while the alternative hypothesis (H_1) is rejected which means that the statement is statistically significant.

4.3 Test for the overall significance of the model (t-test)

The f-test is a tool used in measuring the liability of the overall significance of the model. This will be tested under 95% confidence level with a tail test.
The f-test is presented in the table below, given the f-tabulated as:

$(F_{95}$ in K – 1, N – K) dof
N = Number of Observation
K = Number of Parameter
Therefore, (V1, V2) = (K – 1, N – K) dof
= (2 – 1, 50 – 2)
= (1, 48)dof
F-tabulated = 3.6

DISCUSSION

F-Cal	F-Tab	H$_0$	H$_1$
0.926	3.60	Accept	Reject

The f-table above shows that f-tab (3.60) and f-cal (0.926). This means that f-tab is greater than the f-cal. Therefore, we reject the alternative hypothesis (H$_1$) and accept null hypothesis (H$_0$) which means the whole model is statistically significant to the study.

RECCOMMENDATION AND SUGGESTION FOR FURTHER STUDIES

This study recommended that more attention has to be directed towards the use of information communication technology in the banking operations since the industry serve as a lubricant to the cog of the wheel of the nation's economy while appropriate policies must be put in place to ensure proper monitoring and the determination of the optimum size required to attain banks performance. The study recommend the followings (1) Banks should evaluate the significant impact of ICT development in bank's performance; (2) Operators in the banking sector should also endeavour to determine the rate at which ICT development has contributed to bank's performance in Nigeria; and (3) Finally, the y should determine the effectiveness of ICT development in Nigeria banks. However ,this study suggested that further study could be conducted to determine the effect information communication technology on employees' performance, customer's satisfaction, guarantees sustainable profit, increased return on investment, return on equity and its effect on the promotion of competitive in the Nigerian banking industry with the view to keeping the managers of banks in Nigeria to keep the pace with global ICT trends.

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