

THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) INNOVATIONS ON CUSTOMER'S SATISFACTION IN NIGERIAN BANKS

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ABSTRACT

This work is on the impact of information and communication technology (ICT) innovations on customer's satisfaction in Nigerian banks. It is a quantitative research design which involves questionnaires and structured interviews for collecting the primary data from three indigenous banks: UBA Plc, Zenith Bank Plc and Diamond Bank Plc. It examined the impact of ICT innovation on customer satisfaction in the Nigeria banking industry; and also the investigation of the impact of ICT innovation on bank customers' perception of e-banking in Nigeria. Descriptive statistics and chi-square were used in the data analysis. The study observed, among others, that even though ICT innovations enhances bank customer relationship, the issue of insecurity and lack of confidence on electronic products and services delivery of banks are the major obstacles. It concludes that Nigerian banks' ICT innovations are driven by the need to satisfy customers' demand and to sustain efficient bank customer relationship.

Keywords: Impact, Electronic banking, Consistency, Information and Communication.

INTRODUCTION

The business environment is extremely dynamic and it is undergoing rapid changes as a result of technological improvement, increased awareness and demands of banks to serve their customers economically and efficiently. The banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic environment. Information and Communication Technology (ICT) is at the forefront of this global change curve of the banking system in Nigeria today. The application of Information and Communication Technology concepts, techniques, policies and implementation strategies to banking services has become a subject of great importance and concern to all banks and indeed a prerequisite for local and global competitiveness in banking. Information and Communication Technology (ICT) is the automation of process, controls, and production using computers, telecommunications, software and ancillary equipment such as automated teller machine and debit cards (Kamel, 2005). It is a term that generally covers the harnessing of electronic technology for the information needs of business at all levels. Some banking services that have been revolutionized through the use of ICT include account opening, customer account mandate, transaction processing and recording (Irechukwu, 2000). ICT products in use in the Nigeria banking system include: Automated Teller Machine (ATM), Smart Cards, Telephone Banking, MICR, Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office banking (Agboola, 2001). A decade ago, the Nigerian banks and indeed the financial services industry embraced electronic banking, Information and Communication Technology. Sanusi (2002) traced the introduction and commencement of e-payment products in Nigeria to the year 1996; when the CBN granted All States Trust approval to introduce a closed system electronic purse called ESCA. Since then, many more sophisticated electronic banking products have evolved to improve service delivery and customer satisfaction. Nigerian banks today are significantly into new electronic delivery channels for banking products and services with a view to delivery of better services and satisfying customers the more.

STATEMENT OF THE PROBLEM

One of the benefits banks derive from electronic banking products and services delivery through ICT is improved efficiency and effectiveness in rendition of products and services delivery to their customers, which will also impact significantly on the overall performance of the bank. The customers also enjoy convenient and fast delivery of services via the various e-channels, without necessarily having physical contact with the banks. Despite the developments in ICT innovations (Use of ATM, tele banking, internet banking, among others), the Nigerian banking industry seem not to have achieved their aims, the existence of cash economic long queues still exists in banking halls, and customers seldom patronize the electronic banking products and services in Nigeria.

The Impact of Information and Communication Technology (ICT) Innovations on Customer's Satisfaction in Nigerian Banks

Existing discourse on diffusion of ICT innovation has failed to focus much attention on rapid changes in ICT development and its corresponding effect on product and services provision to the customers. While the application of ICT in service delivery have been significant, the transition from one technology to a more sophisticated one is usually unnoticeable and occurs over a long period of time and this to a large extent affects customers perception, confidence and acceptability. Today's banking situation demands continuous innovations in order to meet the yearnings and aspirations of ever-demanding customer services quickly and effectively, using latest cutting edge technology (Augusto, 2002).

OBJECTIVES OF THE STUDY

The objectives of the study are:

- i. To examine the impact of ICT innovation on customer satisfaction in the Nigeria banking industry.
- ii. To investigate the impact of ICT innovation on bank customers' perception of e-banking in Nigeria.

Research Questions

In view of the objectives of the study, the following research questions become necessary:

- i. What are the impacts of ICT innovation on customer's satisfaction in Nigeria?
- ii. What are the impacts of ICT innovation on Bank customer's perception of e-banking?

Research Hypotheses

- H₀₁: There is no significant positive impact of ICT innovation on bank customer's satisfaction in Nigeria.
- H_{a1}: There is a significant positive impact of ICT innovation on bank customer's satisfaction in Nigeria.
- H₀₂: There is no significant positive impact of ICT innovation on bank customer's relationship.
- H_{a2}: There is a significant positive impact of ICT innovation on bank customer's relationship.

LITERATURE REVIEW

Electronic Banking (e-banking) is the product of ICT developments and innovation. The success of e-banking depends squarely on customer satisfaction of the e-products and e-services bank service quality and customer preferences. Efficiency, growth and the need to satisfy a growing tech-survey consumer base are the three rationales for implementing e-banking in Nigeria. Success in the electronic banking era is measured in the eyes of the customer because most customers want the same things such as quality of bank services, efficiency of services delivery, flexibility of bank product and services and maximization of value (Balachandler, 2001). The use of ICT in banking operation is called electronic banking (Ovia, 2001).

Researches conducted in some countries on customer's perception of and reaction to electronic banking products and services as well as on customer satisfaction concluded that the few e-banks that faced liquidity problem in the so-called advanced economic was as a result of the negative perception their customer have of their services. In fact, in some countries, electronic banking products and services are not very popular because customers do not consider them as better alternative to traditional banking services (Balachandler, 2001).

Mahdi and Mehrdad (2010) used chi-square to determine the impact of e-banking in Iran and their findings from the view points of customers is that e-banking cause higher advantages to Iranians. In other words, Iran banks provide services that the customers are deriving satisfaction with particular reference to the use of e-banking.

Chiemekwe et. al (2006) conducted an empirical investigation on adoption of e-banking in Nigeria. The study identified the major inhibiting factors to internet banking adoption in Nigeria as, insecurity, inadequate operational facilities including telecommunication facilities and electricity supply and made recommendations on how Nigerian banks can narrow the digital divide. The study also finds that internet banking is being offered at the basic level of interactivity with most banks having mainly information sites and providing little internet transactional services.

Agboola (2006) investigated electronic payment systems and tele-banking services in Nigeria. The moving away from cash payments are now being automated and absolute volumes of cash transaction have declined. The result of the study revealed that tele-banking is capable of broadening the customer relationship, retain customers loyalty and enable banks to gain commanding height of market share if their attendant problems such as ineffectiveness of telecommunication services, epileptic power supply, high cost of transaction, fear of fraudulent practices and lack of facilities necessary for their operation were taken care of.

and Tiwari (2006) carried out an empirical assessment of customer's acceptance of e-commerce in Germany. The study found that the most favoured reason for carrying out mobile banking is ubiquity, review of bank account and immediacy while the highest fear of customers about mobile banking is that insecurity, cost and uncomfotability.

THEORETICAL FRAMEWORK

Innovation is an idea, practice, or object that is perceived to be new by a person or adopting entity. When innovation emerges, diffusion unfolds which entails spreading or communicating of the news of the innovation to the group for which it is intended (Rogers, 1995). Adoption however is the commitment to a continued use of the innovation. This study however adopts the diffusion of innovation theory and Critical Mass Theory.

The diffusion of innovation theory postulated that diffusion of innovation occur as potential users become aware of the innovation, judge its relative value and make decision based on their judgement, implement or reject the innovation and seek confirmation of the adoption or rejection decision (Rogers, 1995). These processes take place through a channel over a period of time among users within a social system. These periods are categorized into two viz: the Diffusion Innovation Delay which covers the period of availability of ICT and acquisition of ICT by potential users and the Realization Innovation Delay which covers the period between acquisition/installation to application and realization of potential benefits of technology. Rogers (1995) identifies perceived characteristics of innovation and the type of individual decision involved in the adoption process, size of the organization and socio-economic status of the users of the innovation as the likely factors that affects ICT innovation and adoption.

Barras (1987) also proposed a Critical Mass Theory in the diffusion interactive media. The theory suggests that the more people on the network; the more the diffusion and adoption of technology innovation. However, opportunity, usability and adaptability were identified as the three main factors affecting the rate of realizing the potentials of a new technology (Barras, 1986).

METHODOLOGY

The population of the study consists of respondents, drawn from customers of United Bank for Africa Plc, Zenith Bank Plc and Diamond Bank Plc in Abakaliki, that maintain current account with these banks. The sample drawn is based on judgment sampling approach given that the population is infinite. It is infinite because banks are not disposed to divulge the number of their current account holders for fear of competition and other undisclosed reasons. Descriptive statistics and chi-square were used in the data analysis. This is a quantitative research design and as such, questionnaire and structured interviews were utilized for collecting our primary data. The model validity and reliability focuses on correctness of results and consistency of means of measurement. Validity is proven if the research design fully addresses question and objectives that the researcher is trying to answer while Reliability is proven if the research is consistent and a similar answer would be found if conducted using the same research design (Zikmund, 2003).

The formula for chi-square $(X^2) = \sum \frac{(O-E)^2}{E}$

- where: O = Observed value
- E = expected value

The five point likert's scale of rating were used to indicate the extent to which the customers agree/disagree with various statements.

Data Analysis

A total of 240 questionnaires were administered to bank customers: 80 to each of the three banks. Of the number, 72, 67 and 53 were answered and returned by customers of United Bank for Africa, Zenith Bank and Diamond Bank respectively. Thus, of the 240 questionnaire distributed, 192 were answered and returned which represented 80% of the total respondents. Though the questionnaire covered various issues, only the relevant findings are reported here. In order to ascertain customers' satisfaction and perception with respect to the effect of ICT innovations on banking product and services delivery, descriptive statistics were employed in the presentation and analysis of results.

Do you use any ICT innovation for your bank transaction?

Table 1: Use of ICT Innovation?

Responses	Frequency	%
Yes	182	95.1
No	10	4.9

The result of table shows that 182 representing 95.1% of the respondents use one form the electronic delivery system or the other, while the remaining 10 respondent representing 4.9 percent are yet to use any of the electronic delivery system. This indicates to a large extent, high level of patronage of ICT innovations been introduced by Nigerian banks.

What type of ICT innovations do you use?

Table 2: Types of ICT Innovations used by customers.

Electronic Delivery Channels	Frequency	%
ATM	120	65.9
Internet Banking	28	15.5
Telephone Banking	18	10.3
PC Banking	9	5.2
Others	7	3.1
Total	182	100

Table 2 indicator that 120 (65.9%) respondents use ATM for financial transactions, 28 (15.5%) use internet banking, 18(10.3%) use telephone banking, 9(5.2%) use PC banking, 7(3.1%) use other electronic delivery channel other than the ones specified here. This confirms that ATM is the most widely used ICT innovation used in Nigeria, by customer for their day-to-day financial transactions and almost all the banks have ATM machine located around the corner of the country.

How often do you use electronic banking products and services in a month?

Table 3: frequency of usage of e-banking services

Number of visit per month	Frequency	%
None	11	5.9
Once	14	7.8
Twice	23	12.6
Thrice or more	134	73.7
Total	182	100

Table 3 indicates that 134 (73.7%) of the respondents visit their banks three times or more every month to transact some banking business which they believe other ICT innovations cannot satisfactorily offer them. 7.8% and 12.6% of the respondents visits the bank once and twice.

What is the significance of human teller?

Table 4: Importance of human teller to bank customer

Responses	Frequency	%
Strongly disagree	2	1.0
Disagree	7	3.9
Undecided	23	12.8
Agree	80	44.1
Strongly agree	70	38.2
Total	182	100

Table 4 shows that customer still believe that though many banks have introduced ICT innovations human tellers are still very relevant in financial transaction. About 150 (82.3%) of the respondent still agree that human teller is still important while 9(4.9%) of the respondent disagree on the assertion. The result confirm that even in the face of increased ICT innovation and electronic delivery system, human teller are still considered important in banking. The customer still value personal touch in banking services.

Does the use of ICT Innovation generally improve bank customer general satisfaction?

Table 5: General customer satisfaction

Responses	Frequency	%
Strongly disagree	36	20
Disagree	47	26
Undecided	14	7
Agree	58	32
Strongly agree	27	15
Total	182	100

From table 5, 85 respondents representing 47% agreed that ICT innovations provided adequate satisfaction for them. This calls for concern. Banks need to intensify effort to ensure that customers are delighted and satisfied will electronic banking services provided.

Does ICT Innovations improve bank customer relationship?

Table 6: ICT bank customer relationship

Response	Frequency	%
Strongly disagree	18	10
Disagree	22	12
Undecided	7	4
Agree	55	30
Strongly agree	80	44
TOTAL	182	100

Table 6 reveals that 74% of the respondent agreed that ICT Innovation improves bank customer's relationship. 24% disagreed while 4% of the respondents were undecided.

What is the main problem of electronic banking in Nigeria?

Table 7: Problems of electronic banking (Product of ICT Innovation).

Responses	Frequency	%
Lack of confidence	64	35
Inadequate technology	20	11
Insecurity	73	40
Illiteracy	15	8
Inadequate framework	10	6
Total	182	100

From table 7, it is glaring that customers are very interested in embracing the product of ICT innovation (electronic banking) services due to lack of confidence, insecurity and inadequate technology. However, few customers are of the view that illiteracy and inadequate framework of banks toward ICT innovation are the main problem of electronic banking in Nigeria.

Test of Hypotheses

Hypothesis One:

H₀: There is no significance positive impact of ICT Innovation on bank customer satisfaction in Nigeria

H₁: There is a significance positive impact of ICT Innovation on bank customer satisfaction in Nigeria

Customers' General Satisfaction

Table 8: chi-square table on ICT Innovation and customer satisfaction

Response	O _i	E _i	O _i - e _i	(O _i -e _i)	(O _i -e _i) ² /e _i
Strongly disagree	36	36.4	(6.4)	40.96	1.12
Disagree	47	36.4	10.6	112.36	3.09
Undecided	14	36.4	(22.4)	501.76	13.78
Agree	58	36.4	21.6	466.56	12.82
Strongly Agree	27	36.4	(9.4)	88.36	2.43
Total	182	182			33.24

Source: Researchers' computed Data, 2011.

At 5% level of significance and 4 degree of freedom, the calculated chi-square value is 33.24 while tabulated chi-square value is 9.4877.

Decision Rule: Since X^2 calculated is greater than X^2 tabulated ($33.24 > 9.4877$), we reject the null hypothesis and accept that alternative hypothesis that ICT Innovation have positive significant impact on customer satisfaction.

Hypothesis Two

H_0 : There is no significant positive impact of ICT Innovation on bank customer relationship.

H_1 : There is a significant positive impact of ICT Innovation on bank customer relationship.

Bank Customer Relationship

Response	O _i	E _i	O _i - e _i	(O _i -e _i) ²	(O _i -e _i) ² / e _i
Strongly disagree	18	36.4	(18.4)	338.56	9.30
Disagree	22	36.4	(14.4)	207.36	5.70
Undecided	7	36.4	(29.4)	864.36	23.74
Agree	55	36.4	18.6	345.96	9.50
Strongly Agree	80	36.4	44.4	1971.36	54.16
Total	182	182			102.4

Source: Researchers' Computed Data, 2011.

At 5% level of significant and 4 degree of freedom, the calculated chi-square value is 102.4 while the tabulated chi-square value is 9.4877.

Decision Rule: Since X^2 calculated is greater than X^2 Tabulated ($102.4 > 9.4877$), we reject the null hypothesis and accept the alternative hypothesis that ICT innovation have positive significant impact on bank customer relationship.

FINDINGS

The advance in ICT have certainly introduced new delivery channels in Nigerian banking industries with far researching implications on customers satisfaction and bank/customer relationship. This study finds that: Banks' customers are absolutely aware of ICT developments and advancements which are directed at customers, satisfaction and delight. Unfortunately, lack of confidence, growing level of insecurity and inadequate technology involved in electronic banking product and services delivery are the hindrances to effective and efficient e-service delivery and enhanced customers' satisfaction.

The study also finds that even though ICT innovations enhances bank customer relationship, the issue of insecurity and lack of confidence on electronic products and services delivery of banks are the major obstacles observed. Hence, more customers prefer human teller and personal touch will banks in their financial transaction. A lot need to be done to create confidence in the minds of customers about the benefits and security of the new delivery channels.

CONCLUSION

From the foregoing, this study concludes that Nigerian banks are ICT complicate and that bank ICT innovation are driven by the need to satisfy customer demand and to sustain efficient bank customer relationship. However, we submit that insecurity and lack of confidence on electronic delivery channels are the major challenges facing ICT survival in the competitive business environment, effort should be made to ensure that these challenges are tabled.

RECOMMENDATIONS

1. There should be adequate regulatory framework that will ensure that customer confidence in the use of electronic banking products and services are guaranteed.
2. Banks should try to change customer negative perception on the use of e-banking services and products. This can be done through sustained promotions and advertisement and installation and maintenance of ICT machines that should improve service delivery to justify the benefits of electronic banking products and services. By this, customers' perception would be changed and interest aroused.
3. ICT innovations is a continuous phenomena and should be driven by not just technology development but must be based on customers demand and satisfaction, achieving competitive advantage and enhanced bank performance that will encourage better bank customer relationship.