Electronic Commerce, Automation and Online Banking in Nigeria: Challenges and Benefits

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Abstract

Electronic banking has been around for some time in the form of automatic teller machines and telephone transactions. More recently, it has been metamorphosed by the Internet; a new look and delivery channel for banking services that benefits both customers and banks. The objective of this paper is to find out the correlation between the anticipated benefits/challenges and encountered benefits/challenges. This paper therefore empirically, adopted the use of survey research to explore in quantitative terms the various challenges and benefits e-business poses to Nigeria businesses, with particular reference to Banking and Finance Industry. It was found out that there is statistically significant difference between the anticipated and encountered benefits and major challenge is the security breach faced the customers. We therefore recommend that workshops should be organized for customers periodically on how to keep their data secret especially on how to combine numbers to form password and Constant training of employees both local and international on new development in online trading should be encouraged. **Key words:** e-commerce, Electronic Banking, Automation, e-business, Banking/Finance Industry.

E-banking includes familiar and relatively mature electronically-based products in developing markets, such as telephone banking, credit cards, ATMs, and direct deposit. It also includes electronic bill payments and products mostly in the developing stage, including stored-value cards (e.g., smart cards/smart money) and Internet-based stored value products. E-banking in developing countries is in the early stages of development. Most banking in developing countries is still done the conventional way. However, there is an increasing growth of online banking, indicating a promising future for online banking and Nigeria banks are taking good advantage of it.

Nigerian banks started very low in the quest for the adoption for electronic banking but this slow pace witnessed at the beginning of last decade is fast changing for the better in term of adoption of e-banking. Adeyemi (nd) posited that slow adoption of electronic banking practice is rapidly changing for the better. This assertion was supported by Ayo; Adebiyi; Ekong & Fatudimu (2007) where they posited that with improved technological development and provision of basic infrastructure there will be improved e-Commerce and e-Payment services with overall reduction in the amount of currency in circulation.

Awareness of electronic payments in Nigeria is increasing and it accounted for N360 billion worth of transaction in 2008 (Adeyemi, n.d). (Ayo et al., 2007 cited in Adesina & Ayo, 2010) submitted that, this revolution started in the Nigeria banking system in 2003 with the introduction of Guideline of Electronic Banking by the Central Banking of Nigeria. This was accompanied by bank reformation exercise in June 2004. The reformation exercise left Nigeria with 24 strong and reliable banks against 89 banks previously in existence. The author further maintained that, the surviving banks of the recapitalization exercise have enormously engaged the use of ICT as a platform for effective and efficient delivery of banking services. This has made Nigerian banking sector more competitive because customers are now yearning for more online services that will cater for all their needs right from the rooms with their desktops, laptops, and palmtops and even from their handsets or desks in their various offices without necessarily step into the banking hall. Global demand as a result of inflow of

cash into the economy has also been linked to this dramatic change in ICT embracement. Muniruddeen, (2007) cited in Adesina & Ayo, (2010) corroborated this submissions that the banks' huge investment in telecommunication networks and various e-Banking services delivery could be seen as an effort towards measuring up with global standard. This is among other reasons such as increased customer demand, increased competition among banks themselves; derive minimized cost, new entrants, and better service delivery. Moreso, Schaechter (2002) argued that electronic banking has made it easier for customers to compare banks' services and products, increase competition among banks, and allows banks to penetrate new markets and thus expand their geographical reach. Some even see electronic banking as an opportunity for countries with underdeveloped financial systems to leapfrog developmental stages. Customers in such countries can access services more easily from banks abroad and through wireless communication systems, which are developing more rapidly than traditional "wired" communication networks. Prior to the introduction of electronic banking in Nigeria in the 1990's masterminded by the new generation banks such as Intercontinental Bank, Zenith Bank, Guarantee Trust Bank etc., financial services delivery was very poor. Customers had to spend hour in long queues in the banking hall to carry out transactions either to withdraw or deposit cash into their account. This was the era of manual processing of transactions. The old generation banks such as United Bank of Africa, First Bank of Nigeria and Union Bank of Nigeria saw themselves as lords in the financial service industry. They dictated the pace in the banking industry and being market leader with many products and services, customers had no choice than to patronize them. With the emergence of internet and electronic banking, customers' expectations in financial services delivery are yet to be met, hence the reason for this paper. This paper therefore is poised to look at the various benefits and challenges that were anticipated before the advent of internet banking (that is, in those days when there were long queues and spending of hours in the banking hall to carry out transactions either to withdraw or to deposit cash into your account) vis-a-vis the encountered benefits and challenges after the advent of online banking. This was as a result of the existing gap between actual and expected financial services delivery to customers.

The objective is to find out the correlation between the two pairs of the variables measured i.e. the anticipated challenges and benefits with encountered challenges and benefits. But even with the development of e-commerce, online banking in developing countries has yet to receive any significant attention among researchers, and so echoes the general lack of information systems research in sub-Saharan Africa (Mbarika, Okoli, Byrd & Datta, 2004). Hence the reason for this research works. This paper is divided into five sections. Section one above is the introduction, section two captured the literature review, section three looked at the methodology, while four and five end the paper with discussion of findings, conclusion and recommendation.

Literature Review

The concept of e-banking includes all types of banking activities performed through electronic networks. It is the most recent delivery channel of banking services which is used for both business-to-business (B2B) and business-to-customer (B2C) transactions (Mohammad, 2009). The definition of e-banking varies amongst researchers partially because electronic banking refers to several types of services through which a bank customer can request information and carry out most retail banking services via computer, television or mobile phone (Daniel 1999; Molls 1998; Sathye, 1999). Burr (1996) describes e-banking as an electronic connection between the bank and customer in order to prepare, manage and control financial transactions while Leow, Hock Bee (1999) state that the terms Personal Computer (PC) banking, online banking, Internet banking, telephone banking or mobile banking refers to a number of ways in which customer can access their banks without having to be physically present at the bank branch. Therefore, e-banking covers all these ways of banking business electronically (Mohammad, 2009). The discovery of internet and what we called electronic commerce have opened various opportunities for online trading all over the world. It has brought the market close to the customers and potential customers at a relatively low cost. Infact, online purchase reduces cost compare to physical visiting of shop for purchase. This has opened the market of the developed countries to the entire world. Also, financial institutions being the financial of the economy have been the champion of this crusade where their customers i.e. borrowers of fund cut across various countries. Adesina & Ayo, 2010 disclosed that the advent of Internet, electronic commerce, communication technology and users' response to this technology has opened opportunity for many businesses including the financial institution. Before this period, there were just a few dial-up e-mail providers in

Nigeria before 1998; a couple of Internet Service Providers (ISPs) that operated on slow links. For years, Nigerian Telecommunications (Nitel), the parastatal monopoly, dominated on the whole Nigeria telecommunications market. E-commerce in Nigeria is just at the beginning stage. From the convenient places like their homes or offices, these days most banks offer internet banking services which enable the customers to conduct banking transactions online. Today the majority of the Nigerian banks offer online, real-time banking services.

The area of e-commerce that has developed in Nigeria mostly is e-banking. A few banks started the ATM Consortium in 2003 to set up ATMs across the country. Nigeria is far behind other countries in providing technology at an affordable cost to its population. Adesina & Ayo (2010) also maintained that the adoption of electronic banking service delivery is fast gaining ground in Nigeria. Different e-Banking channels such as electronic cards, internet banking and mobile banking services have been introduced. Pikkarainen et al. (2004) highlighted two major reasons underlying online banking development and penetration. First, banks get significant cost savings in their operation through e-Banking services and secondly, that banks have reduced their branch networks and downsized the number of service staff. It was also indicated that electronic banking services delivery are the cheapest, the most profitable and wealthiest delivery channel for banking products. Internet banking services are crucial for long-term survival of banks in the world of electronic commerce (Burnham 1996). The market for internet banking is forecast to grow sharply in the next few years, affecting the competitive advantage enjoyed by traditional branch banks (Duclaux 1996; Liao, Shao & Chen, 1999). It was also argued that internet banking would help banks present a potentially low cost alternative to brick and mortar branch banking (Margaret & Thompson 2000). Nigeria Direct, (2006); Onwuka, (2006) cited in Francis & Babatunde (2009) posited that with a population of over 150 million that is growing at 3 percent annually, Nigeria has witnessed an increased demand for improved service delivery and convenience by consumers. Banks can provide improved service delivery and convenience by enhancing their value networks through online banking (Sannes, 2001; Crane, & Bodie, 1996). Francis & Babatunde, (2009) therefore submitted that some banks in Nigeria, amongst other facets of the economy, have taken advantage of the country's ICT infrastructure to improve services to customers.

Benefits of E-Commerce

The uptake of e-commerce is influenced by its potential to create business value and by awareness of its participants of the potential benefits (Salnoske, 1997). A major reason for most companies, irrespective of size, to participate in business is to extract some benefit from it. E-commerce is no different Joze, Julie & Angela (2002). The benefits of e-commerce identified from the current literature as adapted from Joze, Julie & Angela (2002) are classified in two main categories - tangible and intangible. The authors work carried out in Australian is similar to what this paper is considering in Nigeria. Hence the adaptation of the benefits and challenges as presented in the tables below. Table 1 presents the key benefits as described in the literature.

Tale 1

Benefits	Research/literature
Tangible benefits	
Business efficiency	(Fraser et al. 2000; Lee 2001; Riggins, 1999) Amrit (2007)
Increased automation of processes	(Fraser et al. 2000; Dan et al, 2001)
Transformation of traditional market chain	(Fraser et al. 2000), Amrit (2007)
Retained and expanded customer base	(Fraser et al. 2000; Rahul, Biju and Abraham 2001; Turban, et al, 2000)
Reduced operation	costs (Kent and Lee, 1999; Grover and Ramanlal, 2000; Kare-Silver, 1998; Fergusson, 1999)
Acquisition of a niche market	(Riggins, 1999; Rahul et al. 2001)
Intangible Benefits	
Enhancing well-being and education of customers	(Whinston et al. 1997; Lee 2001), Amrit (2007)
Consumer loyalty	(Lee 2001; Hoffman et al. 1999; Coulson, 1999)
Competitive advantage	(Kalakota et al. 1999; Hoffman et al. 1999; Straub, 2000; Kare-Silver, 1998), Amrit (2007)
Convenient shopping	(Hannon, 1998; Winner, 1997)

Adapted from Joze, Julie & Angela (2002)

Challenges of E-Commerce

To extract benefits from e-commerce, it is important for businesses to overcome the e-commerce inhibitors and challenges Joze, Julie & Angela (2002). Findings have also shown that insecurity; inadequate operational facilities

like telecommunication and electric supply are among hindrances to online banking in Nigeria (Ezeoha 2005; Chiemeka et al., 2006). E-commerce challenges identified from the literature are classified as - technological, managerial, and business related and are summarised and presented below.

Table 2

Challenges	Research/literature
Technological challenges	
Security	(Koved et al. 2001; Czerniawska & Potter, 1998; Alexander, 1998, Chaechter, 2002)
Web site issues	(Watson et al. 1999; Zhang &von Dran 2000; Lee 2001)
Technology issues including costs, software, infrastructure	(Hoffman et al. 1999; Abeyesekera et al. 1999; Rahul et al. 2001, Chaechter 2002)
Managerial challenges	
People and organisational issues	(Hoffman et al. 1999; Feeny 2000)
Obtaining senior management backing	(Feeny 2000)
Business challenges	
Customer service	(Whinston et al. 1997; Alter, 1999; Lee 2001)
Customers' old habits	(Hoffman et al. 1999; Schwartz, 1999)
Legal issues	(Hoffman et al. 1999; Lawrence et al. 1998; de Souza & von Wiese 2000), Chaechte, (2002)

Adapted from Joze, Julie & Angela (2002)

Prior Studies on Benefits And Challenges of Online Banking

A previous study in Joze, Julie & Angela (2002) showed that that the major benefits of e-commerce adoption not anticipated by the sector are business, efficiency, improved image, competitive advantage, increased automation of processes and increased business turnover. Also, the key challenges identified for the sector are the costs of the technology, the lack of knowledge of e-commerce, managing the change, budgeting and issues associated with linking back end systems. They did not consider secure transactions as a major challenge for the sector; in contrast they were considered one of the success factors.

Pohjola (2002) also showed that the contribution of the use of information communication technology to growth of output in the Finnish market sector has increased from 0.3

percentage points in early 1990s to 0.7 points in late 1990s. Similarly, research conducted in Estonia (Aarma and Vensel, 2001), bank customers use bank office services on average 1.235 times per month, and wait in queue in bank office on average for 0.134 hours. Simple calculation shows, that making payments via E-banking facilities (for instance using Internet bank) rather than in the bank offices create overall economy savings in the amount of 0.93% of GDP (Average distance to nearest bank office is 4.14 km (Aarma and Vensel, 2001), which takes approximately 0.21 hours to travel. (BankAway, 2001; Gur_u, 2002) also considered the benefit from the customer point of view that there is a reduction in costs of accessing and using the banking services, increased comfort and timesaving - transactions can be made 24 hours a day without requiring the physical interaction with the bank, quick and continuous access to information and corporations will have easier access to information as, they can check on multiple accounts at the click of a button, better cash management

According to a survey by Booz, Allen & Hamilton (1996), an estimated cost providing the routine business of a full service branch in USA is $1.07 per transaction, as compared to 54 cents for telephone banking, 27 cents for ATM (Automatic Teller Machine) banking and 1.5 cents for internet banking (Nathan 1999; Pyun et al., 2002). In Nordea Bank, Finland, one online transaction costs the bank an average of just 11 cents, compared to $1 for a transaction in the branch (Echikson, 2001). Average payment in internet bank or via direct debit cost 4 times less, than payment in branch. On actual cost side (or cost side from the bank point of view), average direct debit payment cost 16 times less and payment in internet bank 7 times less, than payment in branch. Amrit (2007) however submitted that risk management, infrastructure development and policy formulation are the three major challenges of E-banking in Nepal. Technological problems like connect break in service while withdrawing cash from ATM and poor mobile service. He also considered that an adequate level of infrastructure and human capacity building are required before banks adopt the full-fledged E-banking. But Mohammad (2009) summarized the major risk of e-banking as operational risks (e.g. security risks, system design, implementation and maintenance risks); customer misuse of products and services risks; legal risks (e.g. without proper legal support, money laundering may be influenced); strategic risks; reputation risks (e.g. in case

the bank fails to provide secure and trouble free e-banking services, this will cause reputation risk); credit risks; market risks; and liquidity risks

Method

The research work was carried out in the Banking industry in Nigeria based on a sample of three deposit money banks in Nigeria. The research work was designed in such a way that data was generated from the questionnaires personally administered to the staffs of the respective banks with a high response rate of 90%. The sample size of this research work constitutes three Nigerian banks. They include: Oceanic Bank, UBA Bank and Intercontinental Bank. The three sample banks are made up of two old generation banks and one new generation bank. A total number of 120 questionnaires was administered, 40 for each of sample company. These banks were selected using judgmental sampling technique in order to have a representation of the population. Krejcie & Morgan (1970) in Amadii (2005) agrees with the sample as they proposed the population proportion of 0.05 as adequate to provide the maximum sample size required for generalization. The banks were selected because of their size and wide range of products which are all over the country. To the best of the researcher's judgment, the banks make a good representation of the banking industry in Nigeria. The expert opinion was sought for in order to validate the content and the structure of the questionnaire during the pilot study.

For testing the hypothesis, a statistical parametric test called Pair Sample t-test was employed to test the significance difference between the pre and post of online banking in Nigeria through the use of SPSS statistical package. Our intention is to establish if there is any significant difference between the anticipated benefits and challenges and encountered benefits and challenges of online banking in Nigeria.

Statement of Hypothesis

H_0: There is no significant difference between the anticipated and encountered benefits of online banking in the Nigerian Banking system

H_0: There is no significant difference between the anticipated and encountered challenges of online banking in the Nigerian Banking system

Decision Rule

Reject H0 if P value is < .05 and accept H0 if P value is > .05

Empirical Results and Implication of Findings

Expected/Encountered Benefit of Online Banking in Nigeria

Table 1. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	INTURNEXP	3.67	90	.474	.050
	INCTURNENC	3.56	90	.500	.053
Pair 2	INCBUSACTEXP	3.50	90	.503	.053
	INCBUSACTENC	3.39	90	.594	.063
Pair 3	COMPADVEXP	2.94	90	.916	.097
	COMPADENC	3.22	90	.715	.075
Pair 4	OPCOSTREDEXP	3.06	90	.853	.090
	OPCOSTREDENC	2.94	90	.784	.083
Pair 5	EXPCUSTBASE	3.39	90	.682	.072
	CUSTBASEEXENC	3.56	90	.500	.053
Pair 6	LOYALTYEXP	3.28	90	.561	.059
	LOYALTYENC	3.06	90	.407	.043
Pair 7	REDWATIMEXP	3.39	90	.831	.088
	REDWATIMENC	2.94	90	.625	.066
Pair 8	BETTUNDEXP	3.11	90	.661	.070
	BETTUNDENC	3.11	90	.461	.049
Pair 9	INCNTWOKEXP	2.89	90	.880	.093
	INCNTWOKENC	3.11	90	.941	.099
Pair 10	POSIMAGEEXP	3.39	90	.594	.063
	POSIMAGEENC	3.28	90	.561	.059

Source: Computer Printout of Researchers' Survey

Table 2. Paired Samples Test

		Paired Differences					T	Df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	INTURNEXP – INCTURNENC	.111	.570	.060	-.008	.230	1.850	89	.068
Pair 2	INCBUSACTEXP – INCBUSACTENC	.111	.661	.070	-.027	.250	1.595	89	.114
Pair 3	COMPADVEXP – COMPADENC	-.278	.735	.077	-.432	-.124	-3.586	89	.001
Pair 4	OPCOSTREDEXP - OPCOSTREDENC	.111	1.249	.132	-.151	.373	.844	89	.401
Pair 5	EXPCUSTBASE - CUSTBASEEXENC	-.167	.691	.073	-.311	-.022	-2.288	89	.025
Pair 6	LOYALTYEXP – LOYALTYENC	.222	.632	.067	.090	.355	3.335	89	.001
Pair 7	REDWATIMEXP – REDWATIMENC	.444	1.072	.113	.220	.669	3.934	89	.000
Pair 8	BETTUNDEXP – BETTUNDENC	.000	.887	.093	-.186	.186	.000	89	1.000
Pair 9	INCNTWOKEXP – INCNTWOKENC	-.222	1.322	.139	-.499	.055	-1.595	89	.114
Pair 10	POSIMAGEEXP – POSIMAGEENC	.111	.741	.078	-.044	.266	1.422	89	.158

Source: Computer Printout of Researchers'

Expected/Encountered Challenges of Online Banking

Table 3. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	HCOSTECHEXP	3.33	90	.750	.079
	HCOSTECHENC	3.61	90	.490	.052
Pair 2	LECOMMKWNEXP	2.83	90	.503	.053
	LECOMMKWNENC	3.06	90	.709	.075
Pair 3	ITSKCOSTEXP	2.83	90	.963	.101
	ITSKCOSTENC	2.83	90	.838	.088
Pair 4	ECOMMINFRCHEXP	2.83	90	.503	.053
	ECOMMINFRCHENC	2.83	90	.604	.064
Pair 5	RESTOMANTELEXP	2.83	90	.963	.101
	RESTOMANTELENC	3.28	90	.561	.059
Pair 6	GETRELVENEXP	3.11	90	.570	.060
	GETRELVENENC	3.06	90	.709	.075

		Mean	N	Std. Deviation	Std. Error Mean
Pair 7	SECBREACHEXP	2.94	90	.527	.056
	SECBREACHENC	3.22	90	.632	.067
Pair 8	RESTTONLBANEXP	2.56	90	.602	.063
	RESTTONLBANENC	2.61	90	.831	.088
Pair 9	NONACEORURPEXP	2.94	90	.709	.075
	NONACEORURPENC	2.94	90	.625	.066
Pair 10	NONCAPOFDATEXP	2.44	90	.689	.073
	NONCAPOFDATENC	2.78	90	.858	.090
Pair 11	MAKBUZKNTCUSTEXP	2.50	90	.963	.101
	MAKBUZKNTCUSTENC	3.22	90	.715	.075
Pair 12	UNRELOFINTPROEXP	3.11	90	.661	.070
	UNRELOFINTPROENC	2.89	90	.570	.060
Pair 13	LAKOFPROBUDGTEXP	3.11	90	.570	.060
	LAKOFPROBUDGTENC	3.17	90	.691	.073
Pair 14	POWAFAILEXP	3.06	90	.625	.066
	POWAFAILENC	2.94	90	1.085	.114

Table 4. Paired Samples Test

		Paired Differences					T	Df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	HCOSTECHEXP – HCOSTECHENC	-.278	.874	.092	-.461	-.095	-3.014	89	.003
Pair 2	LECOMMKWNEXP – LECOMMKWNENC	-.222	.790	.083	-.388	-.057	-2.668	89	.009
Pair 3	ITSKCOSTEXP – ITSKCOSTENC	.000	1.341	.141	-.281	.281	.000	89	1.000
Pair 4	ECOMMINFRCHEXP – ECOMMINFRCHENC	.000	.581	.061	-.122	.122	.000	89	1.000
Pair 5	RESTOMANTELEXP – RESTOMANTELENC	-.444	1.219	.128	-.700	-.189	-3.459	89	.001
Pair 6	GETRELVENEXP – GETRELVENENC	.056	1.032	.109	-.161	.272	.511	89	.611
Pair 7	SECBREACHEXP – SECBREACHENC	-.278	.561	.059	-.395	-.160	-4.694	89	.000
Pair 8	RESTTONLBANEXP – RESTTONLBANENC	-.056	.976	.103	-.260	.149	-.540	89	.590
Pair 9	NONACEORURPEXP – NONACEORURPENC	.000	1.060	.112	-.222	.222	.000	89	1.000
Pair 10	NONCAPOFDATEXP – NONCAPOFDATENC	-.333	.821	.087	-.505	-.161	-3.851	89	.000
Pair 11	MAKBUZKNTCUSTEXP – MAKBUZKNTCUSTENC	-.722	1.290	.136	-.992	-.452	-5.312	89	.000
Pair 12	UNRELOFINTPROEXP – UNRELOFINTPROENC	.222	1.089	.115	-.006	.450	1.936	89	.056
Pair 13	LAKOFPROBUDGTEXP – LAKOFPROBUDGTENC	-.056	.625	.066	-.186	.075	-.844	89	.401
Pair 14	POWAFAILEXP – POWAFAILENC	.111	1.293	.136	-.160	.382	.815	89	.417

Computer Printout of Researchers' Survey

Discussion of Empirical Results

Table 1 and table 2 explain the expected/encountered benefits of online banking in Nigeria. The tables i.e. 1 and 2 shows a significant difference in the scores for: Competitive advantage expected (COMPADVEXP) (M=2.94, S.D=.916) and competitive advantage encountered (M=3.22, S.D=.715) conditions; t(89), p(.001). Expansion in customer base expected (EXCUSTBASE) (M=3.39, S.D=.682) and expansion in customer base encountered ((M=3.56, S.D=.500) conditions; t(89), p(.025). Loyalty anticipated from customers (LOYALEXP) (M=3.28, S.D=.561) and Loyalty from customer encountered (LOYALTYENC) (M=3.06, S.D= .407) conditions; t(89), p(.001). Expected waiting time reduction (M=3.39, S.D= .831) and waiting time reduction encountered (M=2.94, S.D= .625) conditions; t(89), p(.000).

However, there is no significant difference in the mean score for: increase in turnover expected (INTURNEXP) (M=3.67, S.D=.474) and increase in turnover encountered (INCTURNENC) (M=3.56, S.D=.500) conditions; t(89), p(.068). Anticipated increase in bank branches network (INCNTWOKEXP) (M=2.89, S.D= .880) and encountered increase in bank branches network (INCNTWOKENC) (M=3.11, S.D= .941) conditions; t(89), p(.114). Positive image anticipated (POSIMAGEEXP) (M=3.39, S.D= .594) and positive image encountered (M=3.28, S.D= .561) conditions; t(89), p(.158). Rise in understanding of activities by employees expected (BETTUNDEXP) (M=3.11, S.D= .880) and rise in understanding of employees encountered

(BETTUNDENC) (M=3.11, S.D= .941) conditions; t(89), p(1.00). Efficient increase in business activities expected (INCBUSACTEXP) (M=3.5, S.D= .503) and efficient increase in business activities encountered (INCBUSACTENC) (M=3.39, S.D=.594) conditions; t(89), p(.114). Reduction in operation cost expected (OPCOSTREDEXP) (M=3.06, S.D=.853) and reduction in operation cost encountered (OPCOSTREDENC) (M=2.94, S.D=.784) conditions; t(89), p(.401).

From the descriptive statistics result in table 1 and 2 above, it was observed that there is a significant difference in the scores of the mean of anticipated benefits and the encountered benefits. Therefore, we can conclude that the differences between condition means are not due to chance. The meaning of this that there was a difference between the benefits expected that online banking will provide for the sector and what is being experienced presently in the sector as regards banks competitive advantage, expansion in customer base, customer loyalty and waiting time in the banking hall. There was however no significant difference in term of efficient business activities, reduction in the operation cost, increase in turnover, increase in branch network, the bank positive image and better understanding of bank activities.

A paired-samples t-test was conducted in table 2 above to compare: the increase in turnover expected (INTURNEXP) and increase in turnover encountered (INCTURNENC); p(.068). Competitive advantage expected (COMPADVEXP) and competitive advantage encountered; p(.001). Expansion in customer base expected (EXCUSTBASE) and expansion in customer base encountered; p(.025). Loyalty anticipated from customers (LOYALEXP) and Loyalty from customer encountered (LOYALTYENC) p(.001). Expected waiting time reduction and waiting time reduction encountered p(.000).

These values are less than .05 level of significance. We then conclude that there is a statistically significant difference between the means of the expected benefits and the anticipated benefits. Therefore, we accept the alternative hypothesis which says there is statistically significant difference between the anticipated and encountered benefits of online banking in the Nigerian Banking system.

A paired-samples t-test was also conducted in table 2 above to compare: the anticipated increase in bank branches network (INCNTWOKEXP) and encountered increase in bank branches network (INCNTWOKENC); p(.114). Positive image anticipated (POSIMAGEEXP) and positive image encountered (POSIMAGEENC) p(.158). Rise in understanding of activities by employees expected

(BETTUNDEXP) and rise in understanding of employees encountered (BETTUNDENC) p(1.00). Efficient increase in business activities expected (INCBUSACTEXP) and efficient increase in business activities encountered (INCBUSACTENC); p(.114). Reduction in operation cost expected (OPCOSTREDEXP) and reduction in operation cost encountered (OPCOSTREDENC) p(.401).

These values are greater than .05 level of significance; as a result of this we conclude that there is no statistically significant difference between the means of the expected benefits and the anticipated benefits. Therefore, we accept the null hypothesis which says there is no statistically significant difference between the anticipated and encountered benefits of online banking in the Nigerian Banking system

Table 3 and Table 4 explain the expected/encountered challenges of online banking in Nigeria. Table 3 showed a significant difference in their scores: anticipated high technology cost (HCOSTECHEXP) (M=3.33, S.D=.750) and high technology cost encountered (HCOSTECHENC) (M=3.61, S.D=.490) conditions; t(89), p(.003). Lack of e-commerce knowledge expected (LECOMMKWNEXP) (M=2.83, S.D=.503) and lack of e-commerce encountered (LECOMMKWNENC) (M=3.06, S.D=.709) conditions; t(89), p(.009). Anticipated fear of resisting change from manual to electronic (RESTOMANTELEXP) (M=2.83, S.D=.963) and fear of resisting change from manual to electronic encountered (RESTOMANTELENC) (M=3.28, S.D=.561) conditions; t(89), p(.001). Fear of security breach expected (SECBREACHEXP) (M=2.94, S.D=.527) and fear of security breach encountered (SECBREACHENC) (M=3.22, S.D=.632) conditions; t(89), p(.000). Customer data not captured on the site expected (NONCAPOFDATEXP) (M=2.44, S.D=.689) and customer data not captured on the site expected (NONCAPOFDATENC) (M=2.78, S.D=.858) conditions; t(89), p(.000). Making business known to customers expected (MAKBUZKNTCUSTEXP) (M=2.50, S.D=.963) and making business known to customers encountered (MAKBUZKNTCUSTENC) (M=3.22, S.D=.715) conditions; t(89), p(.000).

However the following variables shows no significant difference in their scores: Constraint of budgeting expected (LAKOFPROBUDGTEXP) (M=3.11, S.D=.570) and Constraint of budgeting expected (LAKOFPROBUDGTENC) (M=3.17, S.D=.691) conditions; t(89), p(.401). Effect with power failure (POWAFAILEXP) (M=3.06, S.D=.625) and effect with power failure (POWAFAILENC) (M=2.94, S.D=1.085)

conditions; t(89), p(.417). Cost of acquiring IT skill expected (ITSKCOSTEXP) (M=2.83, S.D=.963) and cost of acquiring IT skill encountered (ITSKCOSTENC) (M=2.83, S.D=.838) conditions; t(89), p(1.000). Lack of e-commerce infrastructure expected (ECOMMINFRCHEXP) (M=2.83, S.D=.503) and Lack of ecommerce infrastructure encountered ((ECOMMINFRCHENC) (M=2.83, S.D=.604) conditions; t(89), p(1.000). Getting reliable vendor expected (GETRELVENEXP) (M=3.11, S.D=.570) and getting reliable vendor expected (GETRELVENENC) (M=3.06, S.D=.709) conditions; t(89), p(.611). Resistance to online banking expected (RESTTONLBANEXP) (M=2.56, S.D=.602) and Resistance to online banking encountered (RESTTONLBANENC) (M=2.61, S.D=.831) conditions; t(89), p(.590). Unreliability of internet providers (UNRELOFINTPROEXP) (M=3.11, S.D=.661) and unreliability of internet providers (UNRELOFINTPROENC) (M=2.89, S.D=.570) conditions; t(89), p(.056). Non accessibility of rural people expected (NONACEORURPEXP) (M=2.94, S.D=.709) and non accessibility of rural people encountered (NONACEORURPENC) (M=2.94, S.D=.625) conditions; t(89), p(1.000).

A paired-samples t-test was also conducted in table 4 above to compare: anticipated high technology cost (HCOSTECHEXP) and high technology cost encountered (HCOSTECHENC) p(.003). Lack of e-commerce knowledge expected (LECOMMKWNEXP) and lack of e-commerce encountered (LECOMMKWNENC) p(.009). Anticipated fear of resisting change from manual to electronic (RESTOMANTELEXP) and fear of resisting change from manual to electronic encountered (RESTOMANTELENC) p(.001). Fear of security breach expected (SECBREACHEXP) and fear of security breach encountered (SECBREACHENC) p(.000). Customer data not captured on the site expected (NONCAPOFDATEXP) and customer data not captured on the site expected (NONCAPOFDATENC) p(.000). Making business known to customers expected (MAKBUZKNTCUSTEXP) and making business known to customers encountered (MAKBUZKNTCUSTENC) p(.000).

These values are less than .05 level of significance, we can therefore conclude that there is statistically significant difference between the means of the expected challenges and the encountered challenges. Therefore, we accept the alternative hypothesis which says there is no statistically significant difference between the anticipated and encountered challenges of online banking in the Nigerian Banking system

However the following variables in Table 4 showed no significant difference in their scores: Constraint of budgeting expected (LAKOFPROBUDGTEXP) and Constraint of budgeting expected (LAKOFPROBUDGTENC) p(.401). Effect with power failure (POWAFAILEXP) and effect with power failure (POWAFAILENC) p(.417). Cost of acquiring IT skill expected (ITSKCOSTEXP) and cost of acquiring IT skill encountered (ITSKCOSTENC) p(1.000). Lack of e-commerce infrastructure expected (ECOMMINFRCHEXP) and Lack of ecommerce infrastructure encountered ((ECOMMINFRCHENC) p(1.000). Getting reliable vendor expected (GETRELVENEXP) and getting reliable vendor expected (GETRELVENENC) p(.611). Resistance to online banking expected (RESTTONLBANEXP) and Resistance to online banking encountered (RESTTONLBANENC) p(.590). Unreliability of internet providers (UNRELOFINTPROEXP) and unreliability of internet providers (UNRELOFINTPROENC) p(.056). Non accessibility of rural people expected (NONACEORURPEXP) and non accessibility of rural people encountered (NONACEORURPENC) p(1.000).

These values are greater than .05 level of significance, we can therefore conclude that there is no statistically significant difference between the means of the expected challenges and the anticipated challenges. Therefore, we accept the alternative hypothesis which says there is statistically significant difference between the anticipated and encountered challenges of online banking in the Nigerian Banking system.

Implication of Findings

Even though there is a positive correlation between the variables under this category, table 1 above showed a high hope of benefits expected of the online banking are not been experienced as thought before the advent of online banking. First the high expectation could be due to what online banking has brought to bear in the developed nation where it has recorded huge success. This might have informed the decision of the various players in the sector not minding other impending factor(s) peculiar to the country. Secondly, the old nature of doing business in Nigeria for example the waiting time in the banking hall has not reduced to the level desired compare to the developed world and the level of computer literacy in the country could also be responsible.

The result in table 2 above showed no significant different among the variables tested. For example, the increase in the network of bank expected before online

banking has been like that till date. The banks studied in this work for example, have increased greatly in term of sizes due to the introduction of online banking. The reduction in the operating cost could be linked to the deployment of chain of computers. This has cut down manual activities where the service of a human is needed and also, the efficient increase in business activities could also be linked to various training and re-training being carried out time without number by various banks for their staffs. This has also helped a great deal.

Conclusion and Recommendation

Inspite of the benefit of Electronic Commerce, Automation and Online Banking such as increase in bank branches network, reduction in operation cost among others; the paper identified lack of e-commerce knowledge, fear of resistance to change from manual to electronic, security breach, non-capturing of customer data in total, unreliability of internet providers, making business known to customers through the net and accessibility of the rural people to online banking and power failure as obstacles to full implementation of electronic commerce, automation and online banking in Nigeria. To tap into the full benefits and potential of electronic banking and e-commerce, the operators and the business at large must understand and be abreast with the benefits and challenges of electronic trading.

Recommendations

Notwithstanding the challenges highlighted above, we proffer the following recommendations:

i. The largest room of improvement is change. Therefore operators should impress it upon employees the need to be responsive to online banking.

ii. Constant training of employees both local and international on new development in online trading.

iii. Workshops should be organized for customers periodically on how to keep their data secret especially on how to combine numbers to form password. They should also be vigilant about who stand next to them when using the ATM.

iv. Even though it is impossible for now considering the dearth of infrastructural facilities in Nigeria, a base could be provided where neighboring villages can access online banking if it is impossible to situate internet facility in each village in the country.

References

Aarma, August; Vensel, Vello (2001): "Banks' Retail Customer Satisfaction and Development of Bank-Customer relationships," Estonia on the Threshold of the European Union: Financial Sector and Enterprise Restructuring in the Changing Economic Environment, Tallinn: Tallinn Technical University, 2001, pp. 85-106.

Adesina A. A & Ayo C.K. (2010): An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria Journal of Internet Banking and Commerce, Vol. 15, No.1

Adeyinka Adeyemi , Adoption of E-Banking Service Arising in Nigeria, Trade Invest Nigeria.

Abeyesekera, A., Criscuolo, C., Barreto, E., Gallagher, P. et al., (1999): "Partners Speak Out; Views on Ecommerce", International Trade Forum, Geneva, Volume 2, pp. 23 – 25.

Alter, S., (1999): "Shopping.com: When E-commerce Isn't a Bargain", Communications of the Association for Information Systems, Volume 2, Article 22

Alexander, R., (1998): "E-commerce Security: An Alternative Business Model", Journal of Retail Banking Services; New York; Winter

Amrit B., (2007): "Prospects and Challenges of E-banking in Nepal", The Journal of Nepalese Business Studies. Vol. IV No. 1 2007

Amadi V.L., (2005): "An Investigation into the Role of Private Sector in Nigeria Highere Institution: A Study of the University of Abuja", International Journal of Research in Education. Vol. 2 No 1&2

Ayo, C. K., Ekong O. U, Fatudimu, I.T., and Adebiyi A. A. (2007): "M-Commerce Implementation in Nigeria: Trends and Issues", Journal of Internet Banking and Commerce, Vol. 12, No.2.

Bandura A. (1982): "Self-Efficacy Mechanism in Human Agency", Journal of American

BankAway (2001): "Net Banking Benefits! Sheer Acceleration. Electronic Banking: The Ultimate Guide to Business and Technology of Online Banking", Edited by SCN Education B.V.

Burnham, B.(1996) "The Internet's Impact on Retail Banking," Booz-Allen Hamilton Third Quarter, (http://www.strategy-business.com/briefs/96301/).

Burr, W. (1996): Wie Informationtechnik Die BankorganisationverandernKonnte, Bank und Markt , Vol. 11, pp. 28-31.

Coulson, A., (1999), "Electronic Commerce: the Ever Evolving Online Marketplace", IEEE Communications, Volume 37, Issue 9, pp. 58 – 61

Crane, D.B. and Bodie, Z. (1996): "Form follows functions: the transformation of banking", Harvard Business Review, 74, 2, 109-117.

Dan, A., Dias, D.M., Kearney, R., Lau, T.C., et al,(2001), "Business-to-business Integration with TPAML and a Business-to-business Protocol Framework", IBM Systems Journal; Armonk, Volume 40, Issue 1, pp. 68 – 90.

De Souza, N. and I. Von Wiese (2000). "European Union: EU Adopts Directive On e-commerce." International Financial Law Review 19(7): pp. 61-62

Daniel, E. (1999): "Provision of electronic banking in the UK and the Republic of Ireland",

International Journal of bank marketing, Vol. 17, No. 2

Duclaux, D.(1996): "The Call of the Web," ABA Banking Journal, pp.20-22.

Echikson, W. (April, 2001): "The Dynamo of E-Banking", BusinessWeek Online.

Feeny, D. (2000). "The CEO and the CIO in the Information Age". Moving to E Business. L. Wilcocks and C. Sauer. London, Random House: pp. 168-187.

Ferguson, M., (1999), "Revenue Collection via the Internet: Transaction Cost Components", Collecter 1999 proceedings.

Fraser, J., N. Fraser and F. McDonald (2000). "The Strategic Challenge of Electronic Commerce." Supply Chain Management: An International Journal 5(1): pp. 7-14.

Grover, V., and Ramanlal, P., (2000), "Playing the E-commerce Game", Business and Economics Review; Columbia; Oct-Dec.

Gur_u, Catalin.(2002): "E-banking in Transition Economies: the Case of Romania," Journal of Financial Services Marketing, pp. 362 -379.

Hoffman, D., Novak, T. and Perlata, M. (1999):"Building Consumer Trust Online", Communications of the ACM, April, Volume 42, issue 4, pp.80 – 85.

Joze K., Julie F., & Angela S., (2002): "Electronic Commerce Benefits, Challenges and Success Factors in the Australian Banking and Finance Industry", Retrieved on 3/1/2011 from citeseerx.ist. psu.edu/viewdoc/download?doi=10.1.1.97.

Kalakota, R., Oliva, R., Donath, B., (1999), "Move Over, E-commerce", Marketing Management, Chicago, Volume 8, issue 3, pp. 23 – 32.

Kent, R., Lee, M., 1999, "Using the Internet for Market Research: A Study of Private Trading on the Internet", Journal of Market Research Society, London, Volume 41, Issue 4. pp. 377 –342.

Koved, L., Nadalin, A., Nagaratnam, N., Pistoia, M., and Shrader, T., (2001): "Security Challenges for EnterpriseJava in an E-business environment", IBM Systems Journal, Armonk, Volume 40, Issue 1, pp. 130 – 152.

Krejcie, R. V., & Morgan, D. W. (1970): "Determining Sample Size for Research Activities", Educational and Psychological Measurement, 30, 607-610

Lawrence, E., Corbitt, B., Tidwell, A., Fisher, J., and Lawrence, J., (1998), "Internet Commerce: Digital Models for Business", John Wiley & Sons, Brisbane.

Leow, Hock, Bee. (1999), New Distribution Channels in Banking Services, Bankers Journal Malaysia, No. 110.

Lee, C.-S. (2001): "An Analytical Framework for Evaluating e-commerce Business Models and Strategies", Internet Research: Electronic Networking Applications and Policy. pp. 349-359.

Margaret T., &Thompson S. H. T. (2000) Factors Influencing the Adoption of Internet Banking: Journal of the Association for Information systems. Volume 1, Article 5

Mohammad M.R., (2009) E-Banking in Bangladesh: Some Policy Implications

Mols, K. (1998): "The Behaviour Consequences of PC Banking, International Journal of bank

Marketing. Vol. 16, No. 5, pp. 195-201.

Muniruddeen L. (2007). An Examination of Individual's Perceived Security and Privacy of the Internet in Malaysia and the Influence of This on Their Intention to Use E-Commerce: Using An Extension of the Technology Acceptance Model. Journal of Internet Banking and Commerce, vol. 12, no.3

Mbarika, V.W.A., Okoli, C., Byrd, T.A. and Datta, P. (2004) The Neglected Continent of IS Research: A Research Agenda for Sub-Saharan Africa, Journal of the Association for Information Systems, 6, 5, 130-170

Nathan, L. (1999), Www.your-community-bank.com: community banks are going online. Community and Banking, Federal Reserve Bank of Boston.

NIGERIA DIRECT: Banking. 10 October 2006 www. nigeria.gov.ng

Onwuka, E.C. (2006) Another Look at the Impact of Nigeria's Growing population on the Country's Development, African Population Studies/ Etude de la Population Africaine, 21, 1, 1-18

Pohjola, M. (2002) "The New Economy: Facts, Impacts and Policies,"Information Economics and Policy, 14, pp. 133-144.

Rahul, D., M. Biju and D. Abraham (2001). "Critical constructs for analysing e-business: investment, user experience and revenue models." Logistics Information Management 14(1/2): pp. 137 - 148.

Riggins, F., 1999, "A framework for Identifying Web-based Electronic Commerce Opportunities", Journal of organisational computing and electronic commerce, Volume 9, Issue 4, pp. 297 - 310.

Salnoske, K., (1997), "Building Trust in Electronic Commerce", Credit World, Vol. 85 No 6. pp. 9-11.

Schwartz, E., (1999,) "Digital Darwinism: 7 Breakthrough Business Strategies for Surviving in the Cutthroat Web Economy", Broadway Books, New York.

Turban, E., Lee, J., King, D., Chung, M.,(2000), "Electronic Commerce: A Managerial Perspective", Prentice Hall International, Inc. New Jersey.

Watson, R., Berthon, P., Pitt, L. and Zinhan, G., 1999, "Electronic Commerce : A Strategic Perspective", The Dryden Press, USA

Whinston, A., Stabl, D. and Soon-Yong, C., 1997, "The Economics of Electronic Commerce", Macmillan Technical Publishing, Indianapolis.

Winner, L., (1997), "The Neverhood of Internet Commerce", MIT's Technology review, Volume 100 No 6 p. 31.

Sathye, M. (1999), Adoption of Internet banking by Australian customers, International Journal of bank marketing, Vol. 17, No. 7, pp. 324-334.

Schaechter, A., (2002) Challenges of the "E-banking Revolution. Finance & Development

Sannes, R. (2001) Self-service banking: value creation models and information exchange, Informing Science, 4, 4, 226-2