



The Prospects of E-Commerce Implementation in Nigeria

Journal of Internet Banking and Commerce, December 2006, vol. 11, no.3
(<http://www.arraydev.com/commerce/jibc/>)

Ayo Charles. K., Dept of Computer and Information Sciences, Covenant university, Nigeria

Email: ckayome@yahoo.com

Ayo Charles. K holds a B.Sc. M.Sc. and Ph.D in Computer Science. His research interests include: Mobile computing, Internet programming, e-business and government, and object oriented design and development. He is a member of the Nigerian Computer Society (NCS), and Computer Professionals Registration Council of Nigeria (CPN). A Microsoft Certified Professional (MCP), and a Cisco Certified Network Associates (CCNA). He is currently the Head of Computer and Information Sciences Department of Covenant University, Ota, Ogun state, Nigeria, Africa.

Abstract

The Internet has brought about the emergence of virtual markets with four primary distinct characteristics, which are real-time, shared, open and global (Mohammad, 2003). The growing rate of ICT utilization particularly the Internet has influenced at an exponential rate, online interaction and communication among the generality of the populace. The shortcomings notwithstanding, most people are connected through their cell phones, home PCs and others through corporate access and public kiosks. The patronage of the Internet allover the world is monumental and has remained on the increase from inception. However, with the enormity of businesses on the Internet, Nigeria is yet to harness the opportunities for optimal financial gains.

This study is exploratory in nature as it attempts to unveil the prospects of e-commerce participation based on the ability-motivation-opportunity (AMO) framework. The paper proposes to investigate the ability of consumers to purchase online, the available motivation to do so, and the opportunities for Internet access.

Findings revealed that Nigerians have the ability to participate in e-commerce, but there is need for improved national image to bring in the element of trust and discipline within, and before the international communities. Furthermore, there is need to encourage public and private initiatives in the provision of the basic infrastructures for improved motivation and opportunities for e-commerce implementation. Currently, consumers source for information online but make purchases the traditional way.

Keywords: E-commerce, AMO framework, E-payment, ICT, Web presence and Internet access.

INTRODUCTION

E-commerce refers to the use of communications technology particularly the Internet to buy, sell and market goods and services to customers. The Internet has brought about a fundamental shift in national economies that are isolated from each other by barriers to cross-border trade and investment; isolated by distance, time zones and language; and isolated by national difference in government regulations, culture and business systems (Mohammad, 2004).

E-commerce offers a level playing ground for large businesses, as well as small and medium-scale enterprises (SMEs) to operate in the global market-place; and for regional businesses and communities to participate in social, economic and cultural networks seamlessly across international boundaries (Mary-Anne, 1998).

It equally fosters direct access to distant markets and promotes globalization of commercial activities; and blurs many of the current distinctions between domestic and foreign companies to an extent that it becomes practically impossible to determine the origin of products (Georges, 1997). Hitherto, multinationals that operated in a number of countries had to adjust their products and services to accommodate the diverse operating environments at a relatively high cost, which the virtual marketplace has reduced.

However, with the paradigm shift in the mode of operation occasioned by the advent of the Internet, global corporations now operate with much consistency and at reduced cost of transactions as if the entire world were a single entity. The Internet has changed the face of businesses and is providing consumers with the ability to bank, invest, purchase, distribute, communicate, explore, and research from virtually anywhere, anytime there is Internet access (Anup, 1997).

The public nature of the Internet has made it vulnerable to a lot of security threats. Thus, it requires a systemic approach to guarantee its security on the fronts of web clients, data transmission, web server, and network server operating system. Similarly, moving businesses online requires efficient and effective management of operations in the contexts of security (integrity, non repudiation, encryption), confidence (credit, payment, confidentiality), and control (traceability, transparency, authenticity) (Ramaswami, 1998; and Larry, 1998).

Andrew (2004) put the total amount realized from e-commerce at \$233 billion in 2000 and an estimated figure of \$6.8 trillion in the year 2004. This amount is much and is expected to be a lot more by now. However, cyber-crime is another major threat to the survival of e-commerce. It has a direct economic damage which was estimated in the year 2000 to be at par with the benefits of IT in business (Vasili, 2003). According to the FBI report of 2004, the cost of cyber-crime was put at about \$400 billion (Miami Herald, 2005).

Consequently, the issue of cyber-crime has been largely responsible for the low level of e-commerce implementation in Nigeria.

The rest of the paper is arranged as follows: section 2 presents the statement of problem, while section 3 presents the objectives of research and section 4 presents the efforts of the Nigerian government which cut across legislative efforts, the national IT policy and the on-going projects. Section 5 presents the research methodologies and the AMO model. Section 6 contains analysis of result and the conclusion of the paper is presented in section 7.

Statements of Problem

The electronic payment system is a major pre-requisite for e-commerce implementation, but the Nigerian economy is largely cash-based with over 90% of funds in circulation. Thus payment for goods and services is mostly by cash due to reasons largely attributed to ignorance, illiteracy and lack of adequate infrastructure to guarantee availability and security of transactions (Ojo 2004, Ovia 2002, and Bickersteth 2005). Other factors that are responsible for the low level of e-commerce participation is the image problem (Olesin 2006, and Ezeoha 2006a). Payment cards with origin from Nigeria are rejected outside because of the level of Internet fraud and Advance Fee Fraud known as 419.

All these put together have influenced in one way or the other the implementation of e-commerce in Nigeria. The recent reform in the banking sector was responsible for the drastic reduction in the number of banks from 89 to 25 banks with strong capital base. The resulting banks are strong, vibrant and highly competitive and are operating at the cutting-edge of ICT. Thus, these banks are expected to bring about a radical change towards embracing e-banking culture, particularly, the use of e-payment system.

Objectives of Research

The main objectives of this paper include an assessment of the prospects of e-commerce implementation in Nigeria, the largest black populace in Africa; an assessment of the level of participation of major companies as well as the level of participation of the citizens. Also, it unveils the ability of the populace to participate in e-commerce, the motivations for participation and the available opportunities in the country to do that.

Efforts of the Nigerian Government

i. Legislative Efforts

Government had instituted a number of regulatory measures to sanitize the finance sector of the economy, such as: the Independent Corrupt Practices Commission (ICPC) Act of 1999; the National Drug Law Enforcement Agency (NDLEA) Act of 1989; the Failed Bank (recovery of debt and financial malpractice of banks) Act of 1994; and the Money Laundering Act of 1995. They were set up to check the tide of fraudulent practices in the country with a view to laundering the image of the country before the international community and within. The other bodies constituted to check the menace of fraud are: the National Cybercrime Working Group (NCWG); and the Economic and Financial Crimes Commission (EFCC) among others (Ezeoha, 2006b).

As part of the efforts to curb the tide of fraudulent practices in the financial institutions in Nigeria, a Nigerian IT solutions provider is already in partnership with SAS of South Africa to introduce an anti-money laundering solution for the financial service institutions (Chibueze, 2006).

ii. IT Policy

The Nigeria National IT policy, formulated in the year 2000 is responsible for the monumental developments in the sector. The vision is to make Nigeria an IT capable country in Africa and a key player in the information society. Its primary mission is to "Use IT" for: education; creation of wealth; poverty eradication; job creation; governance; health; agriculture; etc. (Ajayi, 2005). However, during the year 2006, Nigeria was reported as the fastest growing Telecoms nation in Africa.

iii. On-Going ICT Projects

a. The Mobile Internet Units (MIUs)

These include busses equipped with ICT facilities such as PCs, peripheral devices and VSATs which are used to carry ICT education to rural areas.

b. The WIN Project

This project is tagged "Wire Nigeria". It was intended to provide ICT infrastructure to all the nooks and crannies of the country. The project includes the provision of VSAT to the 774 local governments in the country, and the installation of the necessary infrastructures particularly, fibre optic backbone across the nation.

c. The E-Government Project

This is part of the civil service reforms which was designed to make the Nigerian civil service proactive and respond quickly to the needs of the general populace. The project is a joint initiative between the public and private sector operators under the aegis of National e-Government Strategies Limited (NeGST) and the National Information Technology Development Agency (NITDA).

The project was designed to reduce the bureaucracy that attends to government businesses in the country through the introduction of e-tax, e-learning, e-traffic, e-procurement, e-pricing, e-mail, e-tourism, e-payment, e-revenue, e-legislation, e-policing, e-judiciary, e-health, e-agriculture, e-services, e-kiosk, e-buka etc (Soun, 2004).

Research Methodology

There are at least two major parties involved in e-commerce transactions. They are the customer and the merchant. Some of the other parties involved are the acquirer, the issuer and the switching/clearing house. In this research, interest is on both the customer (the individual who is interested in purchasing goods) and the merchant (the organization or individual who is interested in selling some goods). Therefore two separate sets of questionnaires were administered across these entities.

i. The Organization (Merchant)

A total of 100 questionnaires were administered randomly among the major organizations within the Lagos metropolis (the commercial nerve centre of Nigeria). The organizations cut across the aviation, finance, conglomerates, petroleum, IT and private organizations. The organizations within a particular sector were randomly selected but with fair coverage and representation. 99 of the questionnaires were returned which represents 99% of the total number administered.

Pertinent questions such as web presence, Internet access, level of web patronage, level of web marketing and the nature of problems encountered were posed to them.

ii. The Individual (Customer)

A total of 500 questionnaires were administered and 390 of them were returned, which represent 78% of the total. Relevant questions such as: Internet access, availability of payment cards, level of web commerce patronage and likely challenges were posed to them. This group is composed of randomly selected individuals who are predominantly working-class part-time postgraduate students of an institution, and some few members of the general public.

The AMO/MOA Model

Available research has identified three major factors that impact message elaboration and message-evoked thinking as motivation, opportunity and ability (MOA) that moderate or serve as antecedents to information processing by individuals (Hallahan, 2000). Ramaswani et al.(1998) presented the same model as AMO model. That is, a determinant for online purchasing characteristics by determining the customers' ability to purchase online, their motivation to do that, and the available opportunities for Internet access.

Therefore the collected data was analyzed based on the ability, motivation and opportunity (AMO) framework, and descriptive statistics using the SPSS package.

Analysis of Result

Definitively, in the light of the above, it seems that the offer of a digital newspaper should provide substantially different features from that of the printed version of the same paper, in such a way that the two products are clearly differentiated and fit more closely the preferences of different consumer groups. Logically, this differentiation of form should be based on the different peculiarities or advantages these mediums provide.

Ability to Participate in Web Commerce

Ability refers to the skills or proficiency in understanding a concept. That is, maximizing an individual skills and proficiency in interpreting the concept. Generally, lack of ability portends lack of knowledge to make online purchase or lack of access to the medium.

Therefore, the ability analysis was based on the following factors: web presence, Internet access, availability of payment cards, and participation in online purchase. The results are presented in the table below.

Table 1. The e-commerce ability analysis table

S/N	FEATURES	Individuals		Organizations	
		Yes	No	Yes	No
1	Web Presence	148 (47%)	196 (50.3%)	88 (88%)	11 (11%)
2	Internet Access	283 (72.6%)	100 (25.3%)	97 (97%)	2 (2%)
3	Payment Cards Availability	141 (36.2%)	241 (61.8%)	NA	NA
4	Participation in online purchase	82 (21%)	296 (75.9%)	***	***

*** Much of the payment activities are limited to payment for utilities/services with ATM cards and credit cards used in supermarkets and filling stations and not for purchases on the web.

Discussion

Virtually all organizations in Nigeria have online presence and Internet access. In fact it is a status quo. Their goods and services are displayed online but no sales because of poorly embraced payment instrument. Sales are still done the traditional way. Similarly, Internet access is fairly popular among the citizens, particularly for sending mails and sourcing for information. This is primarily due to the high number of cybercafés that offers Internet access to all and sundry for a fee. Furthermore, the percentage of individuals with payment card is low (36.2%) considering the sample and population used (working-class part-time postgraduate students). The reason for this low result is not unconnected with the economy of the country which is cash-based coupled with the fact that the available cards are mostly ATM cards that are used for settlement of local transactions. Accordingly, the percentage of individuals that is involved in online purchase is pretty low (21%).

Motivation for Web Commerce Participation

Motivation refers to availability, affordability, security and trust in the use of the medium. It arouses the interest, willingness and readiness of customers to patronize the medium.

Therefore, in addition to web presence, Internet access, and availability of payment cards, the tables below shows the level of web commerce.

Table 2. Level of Web Commerce Participation table

Feature	Individuals			
	Very High	High	Average	Low
Level of Web Commerce	6 (1.5%)	41 (10.5%)	121 (31%)	192 (49.2%)
Feature	Organizations			
	Very High	High	Average	Low
Level of Web Commerce	3 (3%)	12 (12%)	38 (38%)	45 (45%)

Discussion

The level of web commerce as presented in table 2 above is generally low. The total percentage below average is 80.2% for individuals and 83% for organizations. This goes a long way to corroborate the perception that consumers source for information online but make purchases the traditional way. Furthermore, the poor response may have been as a result of lack of popularity and low patronage of web commerce. Therefore there is need for awareness and sensitization campaign, motivation and availability of payment instruments for better result.

List of problems encountered

A total of 350 respondents responded to this question. Fraud represents 40.8% of the problems, followed by security and lack of payment with 22.8% and 8.7% respectively among others. Considering the issue of fraud, the expressed level may have been a perceived notion arising from the rejection of payment cards on the international scene. Furthermore, the level of online participation is very low and not much has been recorded in terms of fraud, hence the high level of fraud recorded may have been a general belief.

Opportunities for Web Commerce Participation

This refers to the legal and operational framework offered by both government and operators to guarantee the smooth, efficient and satisfactory running of the medium. The factors considered for analysis include the number of PC owners, the number of Internet users, the number of telephone lines as well as the number of payment cards available.

From available information from the Nigerian Communications Commission reports (NCC, 2006), the IT facilities in Nigeria are as summarized below:

The information available above shows that Nigeria, with a population of 140 to 150 million:

1. The number of PC owners is 867,000
2. The number of Internet users is 1,769,661
3. The number of Telephone (Fixed and Mobile) owners is 27,947,894
4. The number of Payment card owners is 600,000

Consequently, much is desired on the provision of basic infrastructures, considering the current population of the country which is put between 140 and 150 million. There is a need for public partnership, foreign investors, and general deregulation of some major sectors of the economy for improved facilities. According to Ayo (2006), the available payment instruments are few compared to the population of the country. The few cards available are used mostly in supermarkets and filling stations and not for web commerce. However, with the current regulatory effort of government in the area of fraud, the notion may soon give way for a healthier operating environment.

Conclusion

On the basis of ability, virtually all companies in Nigeria have Internet presence and access. Thus, they have the ability to display their goods and services on the web. However, considering the location of administration of the questionnaire (Lagos), the best result is expected because of its commerce centric nature, with a lot of telecoms and cybercaf  operators but the result of 47% Internet access for individual is just fair and much is desired particularly in the provision of basic ICT infrastructure.

Considering motivation, the level of web commerce participation is generally low, although there are other forms of e-payment through the use of ATM and credit cards in the supermarkets and payment for utilities, which are very prevalent. However, for web commerce, because of the rejection of payment cards that originate from the country, some individuals offer payment services through their international payment cards to consumers for a fee.

Furthermore, the available opportunities for e-commerce are very limited considering the number of PC owners, the number of Internet users and the number of available payment cards which are ridiculously low among other things.

Therefore, it is recommended that government and private initiatives be encouraged to improve this sector of the economy. There is a need for improved national image on the international arena and an appropriate legislation put in place to guide the operations of web commerce. Similarly, concerted efforts are required for the provision of basic infrastructure in the areas of web presence, Internet access, and e-payment. The entire populace must be encouraged to embrace the e-banking culture as this will in turn reduce the amount of cash in circulation and boost the e-commerce culture.

REFERENCES

- Ajayi G.O, "e-Government in Nigeria's e-strategy", [online], <http://www.nitda.gov.ng/papers>, 2005.
- Andrew B (2004): "Legal aspects of e-commerce", Computer Crime Research Centre, [online], <http://www.crime-research.org/articles/Belousov.asp>/ April 2004.
- Anup K. G (1997): "Securing E-Commerce: A Systemic Approach", Journal of Internet Banking and Commerce, vol 2, no 4, [online], <http://www.arraydev.com/commerce/JIBC/9704-04.htm>, April 1997.
- Ayo Charles. K and Babajide Daniel O. (2006), Designing a Reliable E-payment System: Nigeria a Case Study, Journal of Internet Banking and Commerce, August 2006, vol. 11, no.2, <http://www.arraydev.com/commerce/JIBC/2006-08/AYO.asp>
- Bickersteth S (2005): "Making e-commerce a reality in Nigeria", Financial Standard Newspaper, vol 7, no: 1, pg 5, Oct. 2005.
- Chibueze J. (2006): "S/Africa firm launches anti-money laundering solution in Nigeria", Financial Standard, vol 7 no: 150 , Oct. 2006.
- Ezeoha A. S (2006a): "Regulating Internet Banking in Nigeria: Problems and Challenges Part 1", Journal of Internet Banking and Commerce, vol 10, no: 3, [online], <http://www.arraydev.com/commerce/JIBC/2006-02/abel.asp>, , Feb. 2006.
- Ezeoha A. S(2006b): "Regulating Internet Banking in Nigeria: Problems and Challenges Part 2", Journal of Internet Banking and Commerce, vol 11, no: 1, [online], http://www.arraydev.com/commerce/JIBC/2006-04/Nigeria-2_F.asp, April 2006.
- Georges F (1997): "Electronic Commerce: A new economic and Policy Area", Journal of Internet Banking and Commerce, vol 2, no.4, [online], <http://www.arraydev.com/commerce/JIBC/9704-08.htm>, April 1997.
- Hallahan K (2000): "Enhancing Motivation, Ability and Opportunity to Process Public Relations Messages", Public Relations Review, 26(4), pp 463-480, ISSN: 0363-8111, 2000
- Larry I (1998): " The Risk and Rewards of Electronic Commerce:", Journal of Internet Banking and Commerce, vol 3, no 1, [online], <http://www.arraydev.com/commerce/JIBC/9801-3.htm>, Jan. 1998.
- Mary-Anne G (1998): "E-COMM-AWARE! E-Commerce awareness programme for regional communities", Journal of Internet Banking and Commerce, vol 3, no 2, [online], <http://www.arraydev.com/commerce/JIBC/9806-13.htm>, June 1998.
- Miami Herald (2005): "Cybercrime Cost about 400 billion", Computer Crime Research Centre, [online], <http://www.crime-research.org/>, July, 2005.
- Mohammad T (2003): "Roles of E-Commerce in 21st Century, Journal of Internet Banking and Commerce, vol 8, no 2, [online], <http://www.arraydev.com/commerce/JIBC/0311-06.htm>, Nov. 2003.
- Mohammad T. et al (2004): "Problems and Prospects of Internet Marketing", Journal of Internet Banking and Commerce, vol 9, no 1, [online], <http://www.arraydev.com/commerce/JIBC/0402-02.htm>, Feb. 2004.
- NCC (2006): "Industry Statistics", available at: <http://www.ncc.gov.ng/index5.htm>
- Ojo A. T. (2004): "Enhancing the efficiency of the payment system: Conceptual Framework", A paper presented at the 9th CBN Monetary Policy Forum, Abuja, May 2004.
- <http://www.arraydev.com/commerce/JIBC/2006-12/AYO-Ecommerce.asp>

Olesin Ayo (2006): "E-payment-Stakeholders worried over switching system", The Punch Newspaper, May 2006.

Ovia Jim (2006): "Payment System and Financial Innovations", A paper presented at the Annual Policy Conference, Nov. 2002.

Ramaswami S. N. et al (1998): "Identifying Customers for Online Financial Services", Journal of Internet Banking and Commerce, vol 3, no 2, [online], <http://www.arraydev.com/commerce/JIBC/9806-05.htm>, June 1998.

Soun T (2004): "Nigeria: Government/Private Sector Partner to deliver e-government, [online], <http://www.e-lo-go.de/html/>, 2004.

Vasili Polivanyuk (2003): "Cybercrime criminological research", Computer Crime Research Centre, [online], <http://www.crime-research.org/>, 2003.