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A Framework for e-Commerce Implementation: Nigeria a Case Study

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Abstract

The advent of the Internet has transformed the business environment in no small measure and has influenced the ways and manner businesses are transacted. This platform has brought about enhanced electronic and mobile business transactions. However, the advent of e-Commerce, m-Commerce or i-Commerce has placed a premium on the participating organisations or nations in terms of provision of the basic infrastructure for a secure, seamless and trusted business environment through the electronic media.

This paper presents an exploratory study of the prospects of e-Commerce implementation and the factors inhibiting its growth. A set of questionnaire was designed, administered and analysed based on political, economic, social and technological (PEST) analysis. The PEST analysis is to help review the current practices with a view to developing a framework for Nigeria and other developing nations in Africa.

Findings revealed that the Automatic Teller Machine (ATM) is the most widely used medium of e-Payment in Nigeria, which is not very suitable for e-Commerce implementation. Similarly, the Internet penetration is still abysmally low and is one of the major threats to e-Commerce implementation. However, the nascent democracy enjoyed in Nigeria is faced with some teething problems, but it promised with time, relative

political stability, direct foreign investment, improved economical atmosphere, improved social services and technological development more than ever witnessed in the country.

Therefore, a viable framework for Nigeria and Africa would be such that involves the private and public partnership (PPP). This consortium is expected to provide the platform for access to the Internet and popularize the use of e-Payment among other things.

Keywords: i-Commerce, e-Commerce, m-Commerce, e-Business, m-Business, Internet, e-Payment and PEST.

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INTRODUCTION

The advent of the Internet has brought about a dramatic growth in the volume of online transactions all over the world. These business activities include electronic fund transfer (EFT), supply chain management, e-Marketing, online marketing, online transaction processing, electronic data interchange (EDI) and automated data management among others (Vladimir, 2003). The current dot com era has witnessed a lot of changes arising from the growth in information and communication technology (ICT). The ICT has remained the dominant factor and platform for business transactions. The platforms offered for commercial transactions include the Internet (i-Commerce), the web (web-Commerce), the mobile devices (m-Commerce) and all are collectively referred to as electronic commerce (e-Commerce).

Consequently, the arrival of the Internet, driven by the World Wide Web subset has redefined the traditional e-Commerce. The traditional e-Commerce simply refers to carrying out commercial transactions electronically using technology like EDI and EFT (Haaq et al, 2000). Currently, e-Commerce has emerged as the convergence of business practices and information technologies such as computer networking and telecommunications; client/server computing, multimedia and hypermedia systems; information retrieval systems; electronic data interchange; message handling and workflow management systems; groupware and electronic meeting systems; and public-key cryptography (Vladimiri, 1996).

The difference between the platforms of operation, particularly, the electronic and mobile, prefixed 'e' and 'm' respectively, is that the electronic medium offers "anytime access", while the mobile medium offers "anytime and anywhere access" to business transactions respectively (Tiwari et al, 2006). On other hand, Internet commerce (i-Commerce) or web commerce is a commercial transaction on the information superhighway, that is, the Internet. The benefit of this medium is that it offers wider scope and a reduced cost.

The rest of the paper is arranged as follows: section 2 presents the review of related literature; sections 3 and 4 present the objectives and the research methods respectively; section 5 outlines the research findings, while the conclusion to the work is presented in section 6.

REVIEW OF RELATED LITERATURE

There were a lot of research efforts aimed at reviewing the current state of developments in the areas of e-Commerce and e-Business in Nigeria. Chiemeké (2006), presented the problems inhibiting the growth of Internet banking in Nigeria as insecurity, inadequate operational facilities such as telecommunications and electricity supply.

In a similar research that was aimed at evaluating the prospects of e-Commerce in Nigeria, it was observed that virtually all the companies assessed in Nigeria had online presence but with little or no commercial activities taking place (Ayo, 2006). That is, there were enormous motivation and opportunities for e-Commerce implementation but the ability of the populace to participate in it was very low because of the low level of e-Payment infrastructure.

Ojo (2004) and Ovia (2003) reported the state of e-Payment in Nigeria; that the economy was described as largely cash-based with over 90% of cash in circulation as against the developed world which is about 7%. However, in view of the recent efforts of government to fast-track e-Commerce and e-Payment developments in Nigeria, the amount of cash in circulation is still on the increase (CBN Report, 2006). The value of cash in circulation is presented in figure 1.

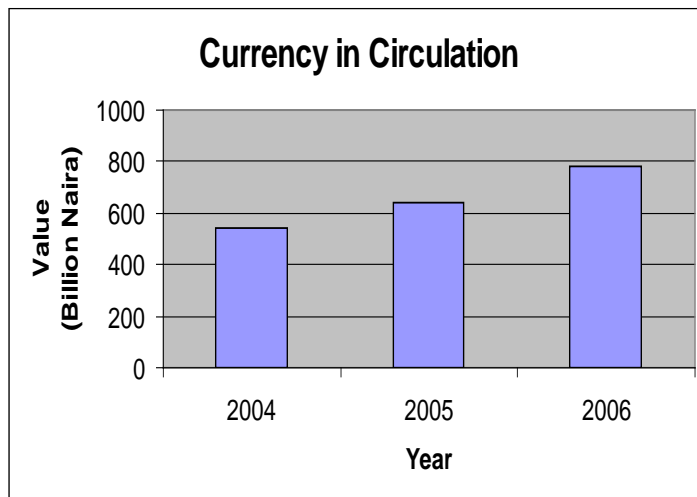


Figure 1: The Value of Currency in Circulation (2004-2006)
Source: CBN Annual report 2006.

OBJECTIVES

There had been several efforts to boost the development of e-Commerce infrastructure in Nigeria but with little results. Similarly, there had been scholarly researches to assess the prospects of e-Commerce implementation in Nigeria based on ability, motivation, and opportunity (AMO) model as well as strengths, weaknesses, opportunities and threats (SWOT) analysis. Therefore, this paper is aimed at accessing e-Commerce implementation based on political, economical, social and technological (PEST) analysis.

RESEARCH METHODS

The principal tool used for this research is the PEST analysis. However, the survey instrument was used to administer questionnaire randomly to 600 respondents within a major metropolis in Nigeria, while the rest of the analysis was based on classified documents, archival searches and annual reports. 576 out of 600 questionnaires were returned valid and analyzed based on descriptive statistics using the statistical package for social sciences (SPSS). Some of the prominent questions posed to the respondents were centred on availability and familiarity with online banking and electronic services among others.

PEST stands for Political, Economic, Social and Technological factors of the external environment. That is, the external factors that are usually beyond the firm's control that may constitute threats to the organization, hence the name 'PEST' (NetMBA, 2007). Thus, PEST analysis is found suitable for this paper because it is expected to unveil the threats to the e-Commerce implementation and offer suggestions that will fast-track its adoption and successful implementation. Each of the factors considered in PEST analysis is composed of several other issues for analysis, but the ones chosen for this research are as listed below:

1. Political analysis: we considered the political and the democratic processes in Nigeria; the risk of military invasion; trade and price regularization.
2. Economic analysis: we considered the poverty level and inflation rate.
3. Social analysis: we considered the demographics, class structure, education, gender. and availability of e-banking services.
4. Technological analysis: we considered the recent technological developments; the rate and diffusion of telephone or Internet services.

RESEARCH FINDINGS

Political Analysis

The low level of developments in Nigeria was attributed to the long years of military rule, having ruled for about 30 years out of the 47 years of independence. The era of military rule was characterized by lack of vision, economic depression, looting and inadequate infrastructural development. Similarly, there were incessant military coup detat that made the polity so unstable, and unattractive for investment with a huge debt overhanging (Iyayi, 2006). In the history of Nigeria, the nation has just had a successful civilian to civilian transition, though, the elections were characterized by unimaginable flaws.

However, it is on record that Nigeria has just begun to witness meaningful developments in the polity, economy, and technology since the year 1999 when the last military regime handed over to a democratic rule that was sustained since then. Since the present civil rule, the nation had embarked on a number of reforms that is aimed at sanitizing the economy and the polity in general. The notable reforms include: the bank recapitalization reform that led to a reduction from 89 weak banks in the country to 25 strong banks, with about 12 of them being listed among the first 1000 banks in the world, a feat that has never been achieved before (Soludo, 2007); another is the telecoms reform/deregulation among others that has made the country to be the fastest growing telecommunication

country in Africa and 3rd in the world (Nigeria2Day,2007).

Consequently, the economy is liberal, the polity is stable and there is high hope of foreign investments in the major sectors of the economy such as power, oil and gas, mineral resources, transportation among others.

The Economic Analysis

Poverty Level

The household economic situation report showed that 32.0% in 2006 as against 30.9% in 2005 of households in rural and urban Nigeria were worse-off. In general, two-thirds of the households in Nigeria are poor, this represents 68.8%. Poverty was more pronounced in the rural areas (65.5%), while for urban areas it was 56.8%.

Inflation Rate

The inflation rate from year 2003 to 2006 is presented below:

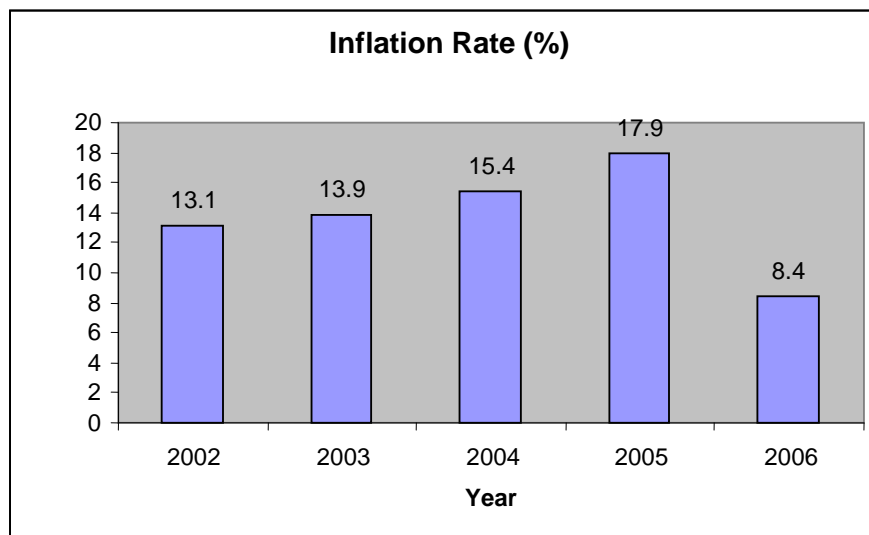


Figure 2: Rate of Inflation
[Source: CBN Report 2006]

The rate of inflation was on the increase from the year 2002 to 2005. However, the single digit inflation recorded for the year 2006 was attributed to good weather and harvest for agricultural commodities, relative stability in the exchange rate and the effects of sound macroeconomic policies, particularly the banking reforms introduced in the year 2004/2005 (CBN Report, 2006).

Social Analysis

The social analysis is based on the administered questionnaire. The findings are presented in tables 1 and 2.

Demographics**Gender**

		Frequency	Percent
Valid	Male	346	60.1
	Female	219	38.0
	Total	565	98.1
Missing	System	11	1.9
Total		576	100.0

Age

		Frequency	Percent
Valid	21-30	133	23.1
	31-40	172	29.9
	41-50	174	30.2
	above 50	76	13.2
	Total	555	96.4
Missing	System	21	3.6
Total		576	100.0

Educational Background

		Frequency	Percent
Valid	ND/NCE	88	15.3
	HND/B.Sc	255	44.3
	Higher Degree	192	33.3
	Total	535	92.9
Missing	System	41	7.1
Total		576	100.0

Table 1: Gender, Age and Educational Background of Respondents

Out of the 565 respondents to the issue of gender, there were 346 male and 219 female. Similarly, the age distribution shows 133 of them within 21-30 years, 172 within 31-40 years, 174 within 41-50 years while 76 of them were above 50 years, 21 of them did not respond to the age issue and were reported as missing system. Furthermore, the educational background of the respondents revealed that out of the 535 persons, 88 had Diploma/NCE, 255 had HND/B.Sc, while 192 of them had higher degrees. Generally, the gender distribution is fair, the average age is between 30-50 years and the respondents are well educated.

Electronic Services

Online Banking

		Frequency	Percent
Valid	High	69	12.0
	Average	46	8.0
	Low	17	3.0
	None	33	5.7
	Total	165	28.6
Missing	System	411	71.4
Total		576	100.0

Electronic card IT services

		Frequency	Percent
Valid	High	63	10.9
	Average	41	7.1
	Low	15	2.6
	None	37	6.4
	Total	156	27.1
Missing	System	420	72.9
Total		576	100.0

ATM

		Frequency	Percent
Valid	High	156	27.1
	Average	85	14.8
	Low	21	3.6
	None	21	3.6
	Total	283	49.1
Missing	System	293	50.9
Total		576	100.0

Electronic Fund Transfer IT services

		Frequency	Percent
Valid	High	62	10.8
	Average	52	9.0
	Low	11	1.9
	None	36	6.3
	Total	161	28.0
Missing	System	415	72.0
Total		576	100.0

Table 2: E-banking Services

Only 165 out of the 576 respondents assessed the level of online banking. Others are probably not familiar with it. Thus, 132 out of the 165 respondents rated online banking as low and above. On electronic card services, only 156 out of the total respondents (576) responded and 119 of them rated the services as low and higher. On ATM services, a higher number of respondents answered the question more than other e-Banking services. It is obvious that ATM is the most prominent method of payment in Nigeria. However, from the respondents, 262 of them rated the services as low and above, while 156 of them rated it as high.

Furthermore, EFT is another popular e-Banking service in Nigeria after ATM. EFT is a medium by which Nigerians abroad send monies to their families at home. Therefore, from the respondents, 125 out of the 161 respondents to the question rated the services as low and above.

Generally, an average of 66.8% of the respondents (576) was recorded as missing system, which is an indication that they are not familiar with e-Banking services.

Technological Analysis

The technological analysis is based on the available infrastructure, the spread of telephone usage and the level of Internet usage in Nigeria. There was little or no significant record of technological development in Nigeria before the year 1999, 39 years after independence.

Telephone diffusion

The nation had witnessed a commendable growth in telephone services since 2001 to October 2007, moving from a teledensity of 0.73 to 37.05. Similarly, from available statistics, presently there are well over 50 million subscribers in the country. Thus, Nigeria is currently rated the fastest growing telecoms industry in Africa (Nigeria2Day, 2007).

OPERATOR	2001	2002	2003	2004	2005	2006	Oct-07
Mobile (GSM)	266,461	1,569,050	3,149,472	9,174,209	18,587,000	32,322,202	49,057,883
Mobile (CDMA)	N/A	N/A	N/A	N/A	N/A	N/A	424,579
Fixed Wired/Wireless	600,321	702,000	872,473	1,027,519	1,223,258	1,687,972	2,391,442
Total	866,782	2,271,050	4,021,945	10,201,728	19,810,258	34,010,174	51,873,904
Teledensity	0.73	1.89	3.35	8.50	15.72	24.29	37.05

Table 3: Distribution of Telephone Usage in Nigeria
[Source: <http://www.ncc.gov.ng/subscriberdata.htm>]

Internet diffusion

Coming from a level that was non-existent in 1999, to a total population of 5 million is very commendable. It is noteworthy, that without the Internet, we would not be talking of e-commerce in its modest sense. Thus the level is encouraging, though, much is still expected from a nation with a population of 140 million.

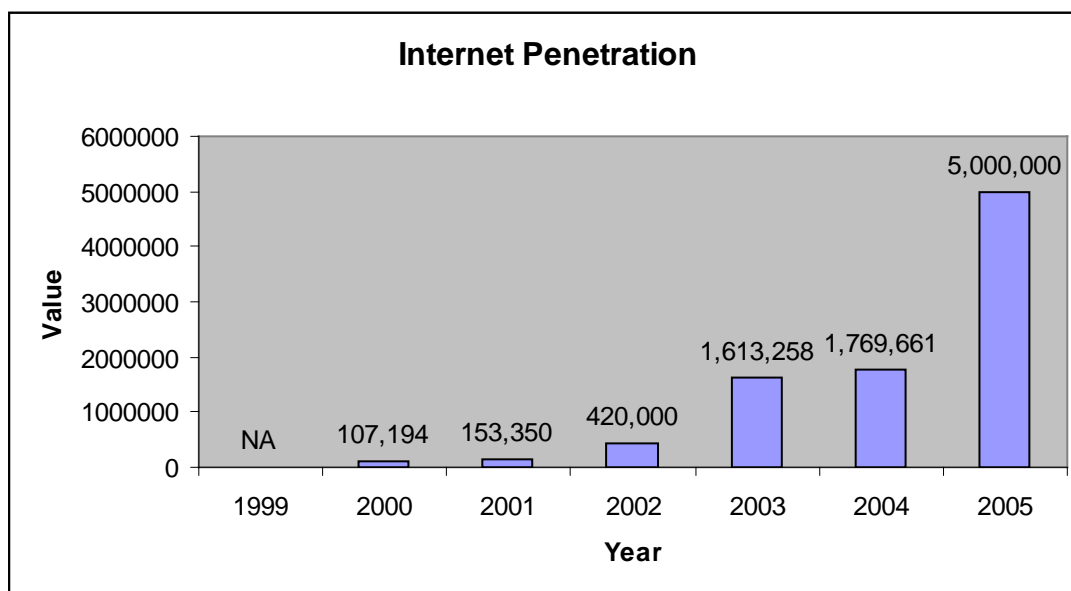


Figure 3: Internet Usage in Nigeria
 [Source: <http://www.ncc.gov.ng/subscriberdata.htm>]

CONCLUSION

Nigeria started the road to socio-political, economic, and technological development after the year 1999. The year marked the debut of democratic rule after long years of military dictatorship, characterized by lack of vision, economic depression, looting and inadequate infrastructural development.

Consequently, the year 1999 marked the nation's journey to civilization, economic growth and technological development. The e-Banking services are still at their lowest ebb with only the ATM services rated highest among others. An average of 66.8% of the respondents did not answer the questions on e-Banking Services. However, ATM is only a means for making local payments and not for e-Commerce services; this explains why the level of e-Commerce implementation is too low.

Furthermore, the rate of Internet penetration is encouraged since the year 2000, but in terms of teledensity, it is still abysmally low. However, without the Internet facilities, there would not be e-Commerce implementation in its modest sense.

Going by the PEST analysis carried out, with the democratic rule in place, there are prospects of political stability, direct foreign investment, improved economic atmosphere, improved social services and technological development more than ever witnessed in the country. Thus, 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.

Therefore, a framework for e-Commerce implementation entails constituting a

consortium of stakeholders (private and public partnership) consisting of merchants, customers, issuers, telecoms operators, card manufacturers and government officials among others. This consortium would be saddled with the responsibility of:

- Popularization of the e-Payment systems (online, web and e-Cards)
- Provision of infrastructure for increased access to Internet services.
- Provision of trusted and secured transaction.
- Constitution of a consortium of stakeholders (private and public partnership) consisting of merchants, customers, issuers, telecoms operators, card manufacturers and government officials among others.

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