

## EXAMINING ONLINE BANKING INITIATIVES IN NIGERIA: A VALUE NETWORK APPROACH

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### ABSTRACT

The central banks of several developing nations have encouraged financial institutions to provide strategic online banking services and products to remain competitive. This is in recognition of the cheaper cost of information and communication technologies (ICT) that support the delivery of such products and services. In this paper, we use a value network theoretical model to examine the electronic banking services and products provided by banks in Nigeria. We visited the websites of banks and identified the different services they provide using Southard and Siau's [24] framework. We also interviewed operations managers of these banks to validate the data collected from the websites. We discuss the implications of our findings using the value network model as a lens, and suggest appropriate strategies that will enable banks provide competitive products and services, and create value for the banks and their customers.

**Keywords:** Electronic banking, online, developing nations, website, value network, ICT

### 1. INTRODUCTION

The importance of online banking in developing countries cannot be overemphasized as the cost of information and communication technology (ICT) is falling. The availability and use of ICT enhances efficient delivery of basic amenities, which facilitates the social, economic, cultural and political growth of developing countries [6, 7, 13, 26]. Certain international organizations including the World Bank, the United Nations and the International Telecommunication Union have argued that investments in ICT are essential for development in the information age [30, 31, 32]. Several developing nations have taken heed of the call by increasing their investments in ICT infrastructure to provide enhanced economic and social services to their citizens which also help address the digital divide problem [16, 19, 28]. In fact, the UNDP states that at the end of 2003, over 90 developing nations had formulated information and communication policies to stimulate the development of ICT infrastructure [29]. Consequently, financial institutions in these countries have taken advantage of available ICT infrastructures to provide online services to their customers. However, 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 [15].

With a population of over 130 million that is growing at 3 percent annually, Nigeria has witnessed an increased demand for improved service delivery and convenience by consumers [17, 18]. Banks can provide improved service delivery and convenience by enhancing their value networks through online banking [4, 21]. Some banks in Nigeria, amongst other facets of the economy, have taken advantage of the country's ICT infrastructure to improve services to customers. ICT infrastructure currently used in Nigeria includes: Very Small Aperture Terminal satellite (VSAT), telephones, facsimile, telegraphy and computer systems [28]. Although these infrastructures have the potential to transform the banking sector in Nigeria, like other African nations especially those south of the Sahara, social, technical and economic challenges could prevent the banks from providing those services and products [1]. The goal of this paper is to examine whether banks in Nigeria are enhancing their value networks through online banking.

Quite recently, Southard and Siau [24] developed a framework for assessing the kinds of online services provided by banks in the United States. The list of services consists of informational, administrative, transactional, portal and others. In this paper, we visited the websites of banks in Nigeria and identified the different products and services they provide using Southard and Siau's [24] framework. We also interviewed the operations managers of these banks to validate the data collected from the websites. We use the value network model [4] to explain the implications of the findings from this study and offer prescriptions for banks in Nigeria to enhance value-added services through online banking to boost competitiveness and connectedness to their customers. These strategic formulations are made cognizant of the technical, economic and social challenges in Nigeria (e.g., [1]).

The rest of the paper is presented as follows. First, a review of relevant literature on electronic banking is discussed. We also discuss the theoretical models upon which Southard and Siau's [24] framework was built. Next we briefly present an overview of the banking environment in Nigeria and the benefits that online banking promises. In section 4, we present our research methodology. Here we describe the details of the categories of the features used in assessing the online banking sites. We also discuss how we classified web features of the banks in Nigeria into the categories of the framework and present a brief description of the interview with operations managers. The results of the study and discussions are presented in section five: we propose strategies that banks in Nigeria can employ to enhance their competitiveness. Finally, in section 6, we conclude the paper.

## **2. THEORETICAL BACKGROUND**

Several models have been employed to study electronic banking services. Ainin et al. [2] identified different products and services provided online by banking institutions. The category of services and products were savings account, checking account, current account, fixed deposit account, transfer of funds, and balance inquiry. Southard and Siau [24] used a broader set of categories to study electronic banking services for large and small banks in the United States. The categories are informational, administrative, transactional, portal and other services such as wireless capabilities and the provision of search functions. This set of categories enables inquiry into the products offered such as short and long term financial instruments, availability of internal customer information management such as internal and external funds transfer. It also identifies the bank's social and economic networks and other activities that make a bank different. The paper concluded that while most banks focus on maximizing internal information services, they fail to explore how an external portal (links to community information, local businesses and financial information) has the potential to strengthen the relationship between banks and their customers. Southard and Siau's [24] framework is based on theoretical models of electronic banking [4, 21].

Crane and Bodie [4] developed a framework that looked at six core banking functions: payment methods, mechanisms for pooling resources, approaches for transferring economic resources, risk management methods, price information, and ways for handling incentive problems. Sannes [21] suggests that electronic banking can best be viewed as a value network with the basic logic of linking customers. A value network uses mediating technology to link customers [21]. According to Sannes [21] model, the website should support the primary activities of a value network. Three primary activities are proposed: network promotion and contract management, service provision, and infrastructure operation. These activities are needed to support three important online banking functions: transactions, customer service and self-help. Southard and Siau [24] redefined the customer service and self-help areas as informational and administrative respectively. Sannes' [21] theoretical model discusses how electronic banking should create value for the customers as well as the banking institutions. Thus a bank's strategy for online banking can be guided by Sannes' [21] model.

Idowu et al. [11] surveyed a sample of banks to assess the quality of technology-enhanced banking services in Nigeria. The paper revealed that ICT has significant positive effects on the banks' operational efficiency but that banks experience certain problems such as lack of customers' trust in the new technology, security, and inadequate electric supply. Efficient deployment of ICT infrastructure requires a reasonably reliable electricity supply, which ironically is an issue of national concern in Nigeria. Inadequate electricity supply as well as technical and other socio-economic issues such as security, trust, literacy of the customers, availability of Internet infrastructure, and cost of Internet use may prevent certain banks from effectively implementing electronic banking. This paper uses Southard and Siau's [24] framework to examine the kinds of services provided by banks in Nigeria. In addition, we offer relevant prescriptions for enhancing online banking services in Nigeria.

### **3. BANKING SYSTEM IN NIGERIA**

Deregulation measures introduced in the 1980s drastically increased the number of banks in Nigeria from 32 to 81 by 1989 [8]. In 2005, a minimum capital base of 25 billion naira was mandated in order to strengthen the financial sector in preparation for foreign competition [5]. This reformation in the financial sector mostly in the form of mergers reduced the number of commercial banks to 25 [5, 20]. A recent merger between some banks has further reduced the number of commercial banks to 23. In recent times, Nigerian banks have realized the importance of prompt and effective customer service as a result of increase in the number of customers flocking to the banks to make transactions mostly in the form of transfers, withdrawals and deposits on their existing accounts [11]. Banks have realized that technology enhances the delivery of quality services to their customers, hence an increased rate of ICT adoption in banking activities. Recent research found that customers associate the quality of services provided in a bank with the possession of an online banking system [11, 22]. Hence, for a bank to gain the trust and acceptance of its customers, the assurance of the use of ICT to deliver those services in a timely, warm and considerate manner, at no additional charge to the customer is necessary [11].

A few financial institutions in Nigeria automated some activities early in the 1980s but not until the late 1990s did such banks introduce intra-branch financial networks. Automation and the intra-network facilitated the incorporation of electronic banking, which used the established networks to further enhance transactions between branches. Banks that offer such services mostly operate in large cities.

Electronic banking presents benefits such as anywhere banking, anytime banking and elongated banking hours to customers. These benefits provide comfort, convenience and ease of use for bank transactions. Before the advent of electronic banking, customers could only

make transactions from a bank's brick and mortar branch offices. Electronic banking has facilitated the integration of the functions of some large banks that have several branches around the country on a centralized network so that transactions can be carried out at any branch on the network without the customer being physically present in the branch. In addition, the inception of electronic banking in Nigerian banks enables customers to access their accounts and perform online transactions anytime of the day, as they would on the physical floors of the bank at their own comfort, pace, and convenience without any human intervention. The omission of middlemen in the electronic banking operation is also beneficial to the bank in terms of reduced labor costs and increased efficiencies in the banking operations which may enable the bank to provide value-added services such as free online banking to its customers.

#### 4. RESEARCH METHODOLOGY

This research uses Southard and Siau's [24] framework to evaluate the online banking services provided by banks in Nigeria by collating website features, which can be used to study the functionalities and Internet strategies of the banks [3].

##### 4.1 Description of the Research Framework

Table 1 shows the framework, which includes broader categories as well as the sub-categories that depict the specific features or functions provided on a bank's website.

<b>Table 1: Generic list of website features (adapted from [24])</b>		
<b>Service Category</b>	<b>Service Sub Category</b>	<b>Description</b>
Informational	I1	General Bank information and history
	I2	Financial education
	I3	Employment information
	I4	Interest rate quote
	I5	Financial calculators
	I6	Current bank and local news
	I7	Customer service
Administrative	A1	Account information access
	A2	Application for services
	A3	Personal finance software applications
Transactional	T1	Account transfer capabilities
	T2	Bill pay services
	T3	Corporate services (e.g., cash management, treasury)
	T4	Online insurance services
	T5	Online brokerage services
	T6	Online trust services
Portal	P1	Links to financial information
	P2	Links to community information
	P3	Links to local businesses
	P4	Links to non-local businesses (and/or advertisers)
Others	O1	Wireless capabilities
	O2	Search functions

The information category represents online documents that are general bank information typically available to customers in print form. This information includes the bank's background information and the services that it provides to customers, which may include both online and branch services. As noted in Table 1, seven sub-categories labeled I1-I7 are identified in this category. Features in this category do not require the bank to provide interaction with its internal network and therefore are simple, and do not pose security and privacy problems. It is therefore relatively easy for banks of all types to provide informational services. Banks may even include their privacy policies as part of informational services.

The administrative category, with three sub-categories A1-A3, provides features, which allow customers to perform routine activities like ordering checks and obtaining account balances. Features in this category utilize the bank's infrastructure in terms of interaction with databases and the network to fulfill the required tasks. Although this interaction does not involve actual transfer of funds, it requires some measure of security to protect customers' privacy.

The transactional category contains the "back bone" features of the bank that enable customers to manage their accounts with capabilities to pay bills, and perform internal and external funds transfer. This category therefore, requires a high level of security as a result of the interaction with the bank's network and databases, which access and change both the customer's and the bank's financial positions.

The portal category includes features that provide customers with links to external websites. Customers can view information such as stock market quotes or other valuable financial information deemed appropriate by the bank. Finally, the "others" category includes the search function and wireless capabilities which do not appropriately fit into any of the previous categories.

## **4.2 Classification of Banks**

We searched each bank's website and identified the kinds of services that are provided. For the informational, portal and other categories, we primarily identified the presence or absence of the specific feature on the website. We analyzed both iconic and textual information provided on bank websites in order to identify the specific features available on the website for the administrative and transactional categories.

## **4.3 Interview of Operations Managers**

From each bank's website, we assessed the specific features (see Table 1) that were provided online. However, in some situations it was difficult to determine whether a bank provides certain online features, especially for transactional sub-categories. Hence we followed up the online analysis with an interview with the management of the banks to validate our understanding of the services and products provided online. We noted that there were a few cases where the banks indicated on the website that they provide certain services, yet in the follow-up interviews, the banks' management indicated that although the services and or products were provided by the banks, they were not yet functionally online. Thus the messages or information provided online were to inform customers about services provided by the banks and did not necessarily suggest that they could be performed online.

## 5. RESULTS AND DISCUSSION

The results of the website analysis and the follow-up interviews with operations managers of the banks are described in this section. In addition, we discuss strategies that banks can use to address online banking implementation challenges.

### 5.1 Results

Table 2 shows the results of the assessment of the web features provided by the banks in Nigeria as well as the validation of the data collected through interviews with operations managers of the banks. The assignment of a particular service or product from the website analysis is marked by an X if the service or product is provided online; otherwise it is marked by an O. In the case where the website analysis is also validated by the interview, the assignment is marked by a bold X or an O. However, in the case where we were either unable to classify or the interview indicated that our classification was wrong; we marked the cell as X<sup>1</sup> and O<sup>1</sup> accordingly. The agreement between the website feature analysis and follow-up interview was about 65% (i.e., bold X and bold O). Features that we did not identify from web analysis but were determined from the follow-up interview (X) accounted for about 14%. The remaining 21% were features that we recorded as being available online but the follow-up interview indicated that they were not functional online (i.e., O). Generally, only a few of the banks provide all the features in a single category. Taking all the banks and the total number of features together, the banks on the average provide 65% (i.e., X, bold X and X<sup>1</sup>) of the full spectrum of online services (informational, administrative, transaction, portals and others). The description of the specific features provided in each category follows.

Typically, organizations announce online presence through the provision of informational features. On the average, each bank provides 80% of the informational services. All the banks provide I1 feature. With the exception of four, all the banks provide I6-I7 as well. The two features that were provided by only few banks are I4 and I5. More importantly, only 43% of the banks provide a financial calculator (I5). While all the banks provide account information access (A1) in the administrative category, only 39% offer personal finance software (A3). Each bank provides only about 49% of the transactional services. In fact only about one-third of the banks provide each of T4, T5 and T6, i.e. online insurance services, online brokerage services, and online trust services respectively. Only a few banks are socially and economically connected by providing links to other local and non-local businesses as well as providing community information as depicted in the portal category [24]. In fact the category with the least available features is the portal. Specifically, 96% of the banks provide P1, i.e. links to financial information, but only about 30% of the banks offer P2, P3, and P4. All banks provide search functions and only a few do not provide wireless capabilities. The results reveal a disconnect between the bank and the community and also show that banks in Nigeria are not taking advantage of the full spectrum of electronic banking features available to them.

**Table 2: Assessment of Websites Features of Nigerian Banks**

Bank	Informational							Administrative			Transactional						Portal				Others		
	I							A			T						P				O		
	1	2	3	4	5	6	7	1	2	3	1	2	3	4	5	6	1	2	3	4	1	2	
1	X	X	O <sup>1</sup>	X <sup>1</sup>	O <sup>1</sup>	X	O <sup>1</sup>	X	X	O <sup>1</sup>	X	X	X	O	O <sup>1</sup>	O	X	O	X	O	X	X	
2	X	X	O <sup>1</sup>	X	X	O <sup>1</sup>	X	X	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	O	O	O	O <sup>1</sup>	O	O	O	O	O	X
3	X	X	X	X	X	X	X	X	O <sup>1</sup>	O	X	O	O <sup>1</sup>	X <sup>1</sup>	O	O	X	O	O	X	X	X	X
4	X	X	X	X	X	X	X	X	O <sup>1</sup>	X	X	O	X	O	O	O	X	O <sup>1</sup>	O	O <sup>1</sup>	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X <sup>1</sup>	X <sup>1</sup>	X	X <sup>1</sup>	X	X <sup>1</sup>	X	O	O	X	X	X	
6	X	O <sup>1</sup>	X	X	X	X	X	X	X	X	X	X	X	O <sup>1</sup>	X <sup>1</sup>	X	O	O	O	X	X	X	
7	X	X	X	O <sup>1</sup>	O	X	X	X	X	X	X	X	O <sup>1</sup>	O	O <sup>1</sup>	O <sup>1</sup>	X	O	O	O	X	X	
8	X	O <sup>1</sup>	X	X	O <sup>1</sup>	X	X	X	X	O	X	X	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	
9	X	O <sup>1</sup>	X	O <sup>1</sup>	O	X	X	X	X	O	O	X <sup>1</sup>	X	O	O	O	X	O	O	O	X	X	
10	X	X	X	O <sup>1</sup>	O <sup>1</sup>	X	X	X	X	O	X	X	X <sup>1</sup>	O	O <sup>1</sup>	O <sup>1</sup>	X	O	X	O	X	X	
11	X	X	X	X	X	X	X	X	X	X	X	X <sup>1</sup>	X	O <sup>1</sup>	O	X	X	X	X <sup>1</sup>	X <sup>1</sup>	X	X	
12	X	X	X	X	X	X	X	X	O <sup>1</sup>	O <sup>1</sup>	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	O <sup>1</sup>	X	X	X <sup>1</sup>	X <sup>1</sup>	X	X	
13	X	X	X	X	X	X	X	X	X	O	X	X	O <sup>1</sup>	X <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	
15	X	O <sup>1</sup>	X	X	O <sup>1</sup>	X	X	X	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	O	O <sup>1</sup>	O <sup>1</sup>	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	X	
16	X	X	X	O <sup>1</sup>	O <sup>1</sup>	X	X	X	X	O	X	X	O <sup>1</sup>	X <sup>1</sup>	X	O <sup>1</sup>	X	O <sup>1</sup>	X	X	X	X	
17	X	X	X	X	O <sup>1</sup>	O	X	X	O <sup>1</sup>	O	X	O <sup>1</sup>	O <sup>1</sup>	O	O <sup>1</sup>	O	X	O	O	O	O <sup>1</sup>	X	
18	X	X	X	O	O	X	X	X	O <sup>1</sup>	O	X	X <sup>1</sup>	X	X <sup>1</sup>	X	X <sup>1</sup>	X	O	O	O	X	X	
19	X	O <sup>1</sup>	X	X	X	O <sup>1</sup>	X	X	X	O <sup>1</sup>	X	X	O	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	X	
20	X	X	X	O	O <sup>1</sup>	X	X	X	X	O <sup>1</sup>	O <sup>1</sup>	X	O <sup>1</sup>	O <sup>1</sup>	X <sup>1</sup>	O	X	X	X	O	X	X	
21	X	X	X	X	O <sup>1</sup>	X	X	X	X	X <sup>1</sup>	X	X	O <sup>1</sup>	O	O <sup>1</sup>	X	X	O	O	O	X	X	
22	X	O <sup>1</sup>	X	O	O <sup>1</sup>	X	X	X	X	X	O <sup>1</sup>	O <sup>1</sup>	X	X <sup>1</sup>	X <sup>1</sup>	X	X	X	X	X	X	X	
23	X	X	X	X	O <sup>1</sup>	X	X	X	X	X	X	O <sup>1</sup>	X	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	X	X	O	O	O <sup>1</sup>	X	
<b>N*</b>	<b>23</b>	<b>17</b>	<b>21</b>	<b>16</b>	<b>10</b>	<b>20</b>	<b>22</b>	<b>23</b>	<b>18</b>	<b>9</b>	<b>18</b>	<b>15</b>	<b>13</b>	<b>8</b>	<b>7</b>	<b>7</b>	<b>22</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>17</b>	<b>23</b>	
<b>P*</b>	<b>100</b>	<b>74</b>	<b>91</b>	<b>70</b>	<b>43</b>	<b>87</b>	<b>96</b>	<b>100</b>	<b>78</b>	<b>39</b>	<b>78</b>	<b>65</b>	<b>57</b>	<b>35</b>	<b>30</b>	<b>30</b>	<b>96</b>	<b>26</b>	<b>30</b>	<b>26</b>	<b>74</b>	<b>100</b>	
<b>A*</b>	<b>80</b>							<b>72</b>			<b>49</b>						<b>45</b>				<b>87</b>		

N\* -# of banks offering service, P\* - % of all banks of banks offering service, A\* - Average offering (%)

## 5.2 Discussion

Banks can provide a value network by linking to their customers through mediating technology such as the Internet [21]. For the Internet to serve its value network purpose, the website should support the primary activities of a value network: network promotion and contract management, service provision, and infrastructure operation to support online banking functions: informational, administrative, transactions, portal and others services [21, 24].

This study indicates that banks in Nigeria in general link to their customers with respect to informational services where the infrastructure and network requirements are

readily available and do not pose security and privacy problems. It is therefore relatively easy for banks of all types to provide informational services.

Southard and Siau [24] found that most banks in the United States focus on maximizing internal information services but fail to explore external portal (links to community information, local businesses and financial information) with the potential to strengthen the relationship between banks and their customers. In this study, we observed that Nigerian banks fail to maximize online banking services both in the transactional and portal categories. Thus, we note that the banks are not using online banking in the provision of short and long-term financial instruments, as well as internal customer information management such as internal and external funds transfer. In addition, the banks have not fully built their social and economic networks through online banking. Thus, Nigerian banks are not effectively using these networks to support differentiation strategies to enhance their competitiveness [3, 24].

It is plausible to maintain that Nigerian banks do not provide the full spectrum of online services as the benefits that are expected are not realized because of the problems that the banks and their customers face. Sannes [21] suggests that customers would prefer self-service (ability to perform service independent of direct service employee involvement) only when it is convenient to the customer and also enhances efficiencies and effectiveness.

An operations manager stressed that the key reason why customers are reluctant to use Internet banking is information dissemination between the banks and their customers. This problem was expressed this way “the youth are more likely to use Internet banking than the older citizens because they are more familiar with the Internet but for older customers, there is a need to entice them through Internet awareness programs”. Another operations manager indicated that “Internet services are sometimes referred to as ‘specialized services’ by some banks and so individual consumers feel that the such services are available only to corporate entities and may incur financial costs”.

The information dissemination problem is part of the reason why our website analysis data differed from that collected during the follow-up interviews. We noticed from our study that there are cases where information on a bank’s website suggested that a service could be performed online. It was noted however that the service is provided by the bank but not available online. This misinformation can frustrate customers and dissuade them from using online banking services. One of the operations managers offered the following explanation “All users with access to the Internet can see information about the bank. However, only users that sign up for specialized services can enjoy the services provided online”. It is clear therefore that the banks are not effectively communicating to their customers which services are provided online and which are not. Effective communication can help increase the use of online banking services by customers.

Idowu et al. [11] also identified several factors that prevent customers in Nigeria from using online banking. These include cost of surfing on the web, insufficient electricity/telecommunication infrastructure, computer unavailability, computer illiteracy, reluctance on the part of customer to attain new skills, fear of changing methods of performing banking transactions, security and trust concerns with the Internet, and lack of Internet banking in rural areas and places with poor road networks. The operations managers also corroborated these problems during the follow-up interview. For instance, the operations manager of Bank 18 listed the following as challenges to online banking: (1) risk, (2) lack of security, (3) customers reluctance/resistance to change, and (4) fear of cost of Internet services.

Another manager stated the problem this way:

Online banking constraints from the customers' viewpoint are security and awareness. Customers are not confident about transactions made without being physically present to ensure that the notes are for instance, complete, and indeed handed over to the register. Users are skeptical about "online" transactions as a result of prevalent scams and fraudulent activities. There are no avenues for users to gain educative information about services provided online and the benefits it provides.

Thus, we argue that the lack of web features on the website of the banks is related to the factors that hinder the effective implementation of the electronic banking in Nigeria. Not only will understanding the economic, social and technical challenges in the implementation of online banking services in Nigeria enable well formulated strategies for ensuring creation of value for banks and their customers, but it will also lead to effective strategies relevant to the nation.

The government owns the electricity company and the main telephone provider in Nigeria. Most telephone services in Nigeria rely on analog technology, which is often unreliable as a result of obsolete equipment. Electricity supply is also insufficient in the country. It is difficult for ICT infrastructure to thrive under such inadequate conditions. The poverty level in Nigeria is very high, with a national minimum wage of US\$42.80 per month [14]. As at the end of 2008, the cost of Internet usage, which includes the cost of a personal computer or laptop, electricity charges and about US\$300 for telephone charges (excluding the cost of installing Internet facilities) is more than an average Nigerian can afford [1, 12].

Computer literacy in Nigeria is very low. Records show that 5% of the total population is computer literate and only 3.1% of the population is Internet literate. Of this percentage, 20% are in the high-income bracket, 30% are from National Companies and 50% from the multi-national companies [1]. It is difficult for a bank to reach its customers through online banking if the majority of its customers do not have computers and or are computer illiterate. Records show that about 75% of the total population in Nigeria resides in rural areas [14]. Hence, lack of Internet banking services in the rural areas may contribute significantly to the low usage of Internet banking as the majority of the bank's customers may not be able to use the service which invariably prevents the banks from realizing the promised benefits of online banking. Fear of change can significantly affect the acceptance of Internet banking by Nigerians. Most people are used to making transactions physically and attributing feel and touch to the medium of exchange. The average Nigerian may not be comfortable yet with the digital form of transaction. They may be worried about others using their account information to perform unauthorized transactions. Change is a problem with almost every society. People are comfortable with what and how they do things. Getting people to change requires a great deal of change management. Since Internet banking is in its infancy in Nigeria, the majority of Nigerians, unlike customers in developed nations, have not yet come to embrace online banking.

### **5.3 Strategies for Addressing Online Banking Implementation Challenges**

Based on the discussion we propose strategies that the government and banks in Nigeria may develop and implement so as to improve the use of online banking activities in the nation. Some of these strategies may require the banking industry to work with other facets of the economy. Sannes [21] observes that banking is a low cost business model with low margins. Hence a bank requires a large volume of self-service customers. Thus the strategies in the following section are focused on encouraging a large size customer based and fostering value

network between customers while presenting attractive package for customers to use online services. In fact bundling and cross-selling are some of the strategies that have been proposed to enable banks enjoy competitiveness through differentiation [9]. While similar strategies are useful for the Nigerian banks, here we suggest specific services that are relevant to the nation.

### **5.3.1 ICT Expansion**

Ngwenyama et al. [16] showed that complementary investment in ICT, health and education is critical to significantly increase the development of West African nations such as Nigeria. The implication for this study is that the mediating technology must support the primary activities of a value network [21]. These activities are network promotion and contract management with the intent of attracting more customers and essentially managing the relationship with customers. It may be appropriate for the government in Nigeria to partner with international institutions such as World Bank and International Telecommunications Union to develop effective strategies to balance investments in these three important areas. It is critical that the Nigerian government invests in the power supply and the telecommunication sector of the economy on which the ICT infrastructures runs. This will ensure efficient operability of the infrastructures and consequently enable banks to maintain good performance reputation with the existing customers. The government could privatize the telecommunication sector to improve efficiencies and productivities which are necessary to increase capacities in the sector.

### **5.3.2 Literacy Improvement**

It is incumbent on the federal and state governments to ensure that individuals are computer literates in the current information age. Recent studies show that education level and exposure to the Internet are significant predictors in explaining the rate of adoption of e-commerce [23]. Banks in Nigeria may participate in literacy improvement as they stand to benefit from such initiatives. For instance, banks can organize computer training sessions for their customers, especially for those in the rural areas where 75% of the population resides. We echo Sannes [21] who suggested that an intuitive interface is critical if customers are to learn how to operate the website and get accustomed to the services available so that banks can achieve the goal of effectively providing efficient service, which is a primary activity of the value network.

### **5.3.3 Enhance Self-Service**

Sannes (2001) observed that customers would prefer self-service, which means they would like to perform services without service employees' involvement. This gives customers a sense of connectedness to the bank knowing they are knowledgeable enough to make financial decisions on their own. However, we observed that information such as financial calculators, interest rates, and current bank and local news are not provided on the websites of the Nigerian banks. Absence of such information may persuade customers to contact customer service for consultation which is rather expensive for the bank. Therefore, providing such information would enable customers make informed decisions based on sufficient operational data in comparison with the banks' competitors.

One item that is missing from websites of some banks is frequently asked questions (FAQ). FAQs enable organizations to reduce the volume of direct communications of customers with employees as most of the questions that customers have may be presented in the FAQ. Feedback of web experience provided by customers to the banks could be used by decision makers to strategize ways of adding value to services provided to customers.

In general, the information dissemination problem needs to be effectively addressed. Web site should be designed in such a way that customers can clearly understand what

services are provided online and what services are not. In addition, customers should be well informed that online services are available to both individual consumers and corporate entities and that online banking service are free (if the bank offers free online banking services).

#### ***5.3.4 Navigation and Wireless Capabilities***

Notwithstanding the fact that all banks provide wireless access, the continual demand for enhanced services and population growth in the nation requires proactive strategies to build wireless network capacity. Banks might also consider utilizing a search feature on their websites that will allow customers to query the site with questions on services and problems while performing online transactions. This query, when logged, can be useful as it gives banks ideas of what services need improvement to enhance further connection with their customers.

#### ***5.3.5 Alternative Services***

In Nigeria, the cost of surfing the Internet at an Internet café varies from US\$0.4 – US\$1.1 per hour during peak time [14]. The cost of owning a computer and having online Internet services at home will even be higher. As few customers can afford such costs, banks may provide alternative means for online services for the customers. One strategy that banks can use to create value through the facilitation of a network relationship is by providing an in-house Internet café in a bank's branch offices or community centers where customers are allotted a reasonable number of one hour timeslots during the week for their online banking transactions. This will enable customers who do not have access to the Internet to perform online banking services. As customers come to accept online banking, the banks could form some strategic partnerships with technology and computer hardware companies to supply the bank's customers with computer and Internet products through promotions such as interest free payments and monthly deductions.

#### ***5.3.6 Security/Change Management***

There has been a perception of insecurity and lack of privacy attached to electronic banking [27]. Therefore, banks in Nigeria have to disseminate information on security of online banking as well as the benefits of online banking to their customers on regular basis to enable them to consider online banking as viable alternative to branch banking. Security issues are very critical if a bank seeks to implement online strategy that includes deployment of administrative and transactional features since it involves interactions with networks and databases that change the customer's as well as the bank's financial statements. The existence of a privacy statement on a company's website was found to be effective in communicating a company's privacy practice [10]. Thus providing privacy assurance through artifacts such as privacy statements and seals on the bank's website can encourage customers to use online banking.

#### ***5.3.7 Incentives***

The primary activities of a value network are network promotion and contract management with the intent of attracting and selecting customers and managing the relationships so formed [21]. In the United States and other developed nations, customers are offered free online checking accounts for customers to have online banking [24]. Sometimes the banks require their customers to sign up for direct deposit in order to qualify for free online banking. Nigerian banks may use these kinds of strategies to motivate customers to use online banking. Only when most customers use online banking will banks reap substantial benefits from online banking services [21].

### **5.3.8 Collaborative Banking**

Groups of banks may stand to benefit if they could together develop online banking systems so that the cost of online delivery may be shared. While some may consider this proposal to be “risky”, it is possible that banks can do this without sharing competitive information. Sannes [21] and Southard and Siau [24] have discussed cases where large banks had to form alliances to compete in several niche markets. These benefits have been noted elsewhere “The business value system in a mediation industry is potentially a set of co-producing, layered and interconnected networks that enhance the range and reach of the services provided” [25: 429].

## **6. CONCLUSION**

The study has illustrated that banks in Nigeria are not taking advantage of the full spectrum of electronic banking features. Our framework is based on previous electronic banking value creation theoretical models. Some of the challenges to the electronic banking implementation are insufficient electricity supply, inadequate telecommunication, literacy of the customers, cost of surfing the Internet, lack of understanding of the benefits of online banking and the security/trust issues with online banking. More importantly are the challenges faced with the effective deliverance of the products and services to the customers. We have provided some strategies that banks in Nigeria can implement to enable them maximize the provision of online banking services to enhance their competitiveness. These strategies follow the network theoretical model while taking into consideration the economic, technical and social constraints of the nation.

Research has shown that complementary investment in ICT, health and education is key in significantly increasing the development of West African nations such as Nigeria. It therefore behooves the Nigerian government to invest in the power supply and the telecommunication sector of the country’s economy, on which the ICT infrastructures rely. It may be necessary for the government to privatize this sector to improve efficiencies and productivities that are necessary to increase capacities in the sector.

The paper makes contributions to both research and practice. For practice, the strategies proposed, which are relevant to other developing nations especially those South of the Sahara, could be used by decision makers to enhance online banking operations and to remain competitive. From a theoretical perspective, we demonstrate the applicability of the value network model in understanding the value creation potential of online banking services in developing nations. We show that combining website analysis and an interview of the banks’ employees led to the development of more accurate results. We argue that such an approach can be useful for studies involving analysis of organizations’ websites. Finally, the study helps bridge the gap in research between developed and developing nations.

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