

## Adopting Internet Banking in Ghana

<sup>1</sup>G.O. Ofori-Dwumfuo and <sup>2</sup>Betty A. Dankwah

<sup>1</sup>Methodist University College Ghana,

<sup>2</sup>Ghana Telecom University College, Accra, Ghana

**Abstract:** This study looks at the benefits, challenges and barriers in adopting Internet banking at a major bank in Ghana. The development of the Internet is changing the way financial services are provided in Ghana. The Internet banking facility has resulted in new ways of delivering banking services. The research is a case study based on the staffs that has worked with the bank for more than three years. In evaluating benefits, challenges and barriers to the bank in adopting Internet banking, interviews were conducted with some management staff and twenty other staff who were directly involved with customers with respect to daily banking services. Secondary data on Internet banking was available from the retail banking section of the bank. Literature on aspects of Internet banking (its adoption, benefits, challenges and barriers) was reviewed. The results of the study indicate that there are numerous benefits to the bank in adopting Internet banking, just as there are challenges and barriers. On the whole, however, the benefits outweigh the challenges and the barriers put together. This should encourage other banks to offer Internet banking to all of their retail customers in Ghana.

**Keywords:** Adopting ICT technology, challenges and barriers, Ghana banks, internet banking, internet banking benefits

### INTRODUCTION

Many banks are making huge investments in technology to maintain and upgrade their infrastructure, in order not only to provide new electronic information-based services, but also to manage their risk positions and pricing. At the same time, new off-the-shelf electronic services such as online retail banking are making it possible for very small institutions to take advantage of new technologies at reasonable costs. These developments may ultimately change the competitive landscape in the financial services (Abor, 2004).

The banking system in Ghana, until recently, has seen resistance to change as preserving its stability. But in recent times, the banks have been pushed into ICT and this is changing the way banking business is done. Internet or online banking is the current face in the development of banking services in Ghana. With more people using Internet these days, many bank customers expect to be able to carry out most of their banking transactions using safe websites. They expect to be able to access features and functions via the Internet that would enable them to transfer money from one account to another, view their account balances and summaries as well as handle other services. Many Ghanaian bank customers therefore want to be able to carry out financial transactions by simply using a computer with an Internet connection (Balachandher *et al.*, 2001).

**The need for Internet banking:** The importance of the use of telecommunications technologies in the banking sector has grown over the years, leading to present-day Internet banking. Internet banking has caught on well for some reasons. It makes the regular transactions for a client speedy and time-efficient, with little or no paperwork involved. Standing in long queues is avoided by customers making deposits or withdrawals. Banking has thus turned into a “24/7” service with the banks always available to their clients (Ciciretti *et al.*, 2009).

Many of the Ghanaian banks have overseas and foreign clients and online banking help cater for these clients who cannot cross the geographic barriers to undertake simple transactions. Internet banking has therefore increased customer diversity and improved the quality of clients (Calisir and Gumussoy, 2008).

**Project objectives:** Banking plays a crucial role as a major service for the growth development of all economies and it is even more important for emerging economies such as Ghana. As businesses usually need to find ways of improving their products and service deliveries, it becomes more essential to understand how the adoption and provision of Internet banking could be beneficial to a bank and its customers. The purpose of this study is to describe the status of adoption of Internet banking at a bank as a means of analysing its unique role for enhancing business (Dankwah, 2012).

The specific objectives are to:

- Identify the benefits of Internet banking with particular emphases on extending the service to all retail customers.
- Explore barriers to the adoption and implementation of Internet banking and
- Describe the perceived challenges faced by a bank in adopting Internet banking for all of its customers.

In this study the benefits of e-banking are conceptualized as issues or factors perceived by respondents as beneficial for Internet banking adoption. Similarly, barriers are those factors perceived to be impediments to the adoption of Internet banking. Finally challenges are taken to be the perceived factors that make it difficult to adopt Internet banking. We believe that the outcome of the study could be used as a help in deciding as to whether or not to offer Internet banking to all retail customers in Ghana, a guide in the setting up of Internet banking at all bank branches and a lead to the review of the challenges that banks would face in adopting and implementing Internet banking.

## LITERATURE REVIEW

**Internet banking:** Internet banking may be seen as an aspect that enhances electronic business (Seitz and Stickel, 2002). According to Zwass (1996), e-business probably began with the electronic data interchange in the 1960s. But Melão (2008) argues that it was not until the latter days of the 1990s that, with the coming into force of the Internet that e-business came up as a major part of many financial institutions. Financial services are thus being promoted because of the widespread use of the Internet. The Internet has turned out to be a tool of worldwide communication, promoting producers and entrepreneurs to sell their products online.

In the light of this, many banking and finance organizations have come up with the idea of banking online via the Internet. Internet banking is thus a facility provided by such institutions to enable the user executes bank related transactions through the Internet electronically without having to visit the brick-and-mortar bank (Al-Abed, 2003). Internet banking provides a variety of attractive possibilities for remote account self-service access, including (Furst *et al.*, 2002; Eriksson and Nilsson, 2007):

- Availability of enquiry and transaction services around the clock
- Worldwide connectivity
- Easy access to transaction data, both recent and historical
- Direct customer control of international movement of funds without intermediation of financial institutions in customer's jurisdiction.

Mols (2001) agrees that Internet banking is an innovative distribution channel that offers less waiting time and more convenience than traditional branch banking with significantly lower cost structure than traditional delivery channels. In addition to reduction in operational costs to the banks, Internet banking also results in higher levels of customer satisfaction and retention.

The first Internet banking service in the United Kingdom was launched by the Nottingham Building Society in 1983. This service formed the basis for most of the Internet banking facilities that followed. In the United States, the first online banking service was developed by Stanford Federal Credit Union, which is a financial institution and introduced in October 1994.

**Ghana banks and technological growth:** In Ghana, the growth in the use of technology in banks has been rapid in recent years. Focus has all along been on convenient service to clients at the most reasonable costs while making profit and staying competitive. The days of office automation devices lasted until the 1980s when the Personal Computer (PC) became popular and banking competition intensified. The Ghanaian banks began to use PCs in back-office operations and then later, tellers started to use them to serve clients. Progress in computer technology followed with banks networking their branches and operations. The major international banks led this electronic novelty that revolutionaries banking in the country (Abor, 2004).

The biggest change to the banking industry in Ghana came with the introduction of the ATM machine in 1995. Today, all the major banks operate ATMs. The current phase of development of the banking industry in the country, in line with the rest of the world, is the Internet banking which tends to provide bank clients with even more convenience. However, this technology is at a relatively infant stage as the banks only offer Internet banking services mainly to corporate clients.

**Adopting internet banking:** The adoption of Internet banking is influenced by several factors. Georgescu (2005) puts two of these factors as customer service enhancement and competitive costs. Huge investments made by Ghanaian banks have still not turned Internet banking into profitable customer service enhancement and competitive cost ventures for them; though they have enrolled some existing customers onto the Internet banking facility, they are not getting new customers in large numbers. Bauer and Hein (2006) argue that banks must make the effort to translate their investment in online banking beyond enrolling customers. To them, that is when banks will be able to derive maximum value that includes cost reduction opportunities and higher customer attraction and retention.

In order to acquire a holistic view of the electronic business adoption phenomenon, the academic and research community has focused its research attention on the analysis of the electronic business adoption process (Al-Mudimigh, 2007; Cotman *et al.*, 2007).

Within this framework, a great amount of effort has been placed on the examination of the electronic business adoption process as well as on the investigation of the significant factors that affect the specific process. The results of the specific research attempts and developments have led to the formulation of certain electronic business adoption models and theories (Lallmahamood, 2007; Lai and Li, 2004).

The Stages theory has been used as a tool for examining the adoption and progression of various aspects of electronic business in organizations. The Stages theory assumes that organizations progress towards electronic business through a number of clearly defined and successive stages or phases. Each adoption stage or phase is characterized by the existence of distinctive applications, benefits and problems, while it reflects a particular level of maturity in terms of the use and management of Information Systems and Technologies (Windrum and De-Berranger, 2002).

**Benefits of internet banking:** Benefits expected to be gained are major factors for a firm to decide to go the Internet banking direction. According to Basu and Muylle (2007), companies can gain two fundamental types of benefits from e-banking. These are generally described as value creation or value enhancement for one or more of a company's stakeholder groups and cost saving, increased market share, speed and efficiency of doing business and improvement in customer service. Value creation could also result in improvement in internal and external communication through effective e-marketing, increment of sales through e-commerce websites integrated with back office.

Akoh (2001) answers the question why firms should go the Internet banking way and outlines the tremendous benefits derived by firms who have already integrated electronics into their business processes. According to him it is shown that if the cost of a full-service trading transaction is about \$150, it will cost \$69 doing the same using a discount broker and \$10 using an online broker. He continued that it will cost all parties (the bank, consumer, service provider, etc.) \$1.27 for a banking transaction (eg., a simple cash withdrawal) at a bank branch, \$0.27 using an ATM machine and \$0.01 using the Internet. Akoh (2001) then adds that doing business electronically does not only reduce cost but tremendously affects the speed and efficiency of businesses.

Windrum and De-Berranger (2002) suggest that the commercial benefits of e-banking lie in five areas. Firstly, firms are able to expand their geographical reach. Secondly, important cost benefits lie in improved efficiency in procurement, production and logistics processes. Thirdly, there is enormous scope for gaining through improved customer communications

and management. Fourthly, the Internet reduces barriers to entry for new market entrants and provides an opportunity for small firms to reorient their supply chain relationships to forge new strategic partnerships. And finally, e-banking technology facilitates the development of new types of products and new business models for generating revenues in different ways.

**Barriers in adopting internet banking:** According to Windrum and De-Berranger (2002), it is hypothesized that many of the factors affecting the successful adoption of new technologies such as e-banking are generic in nature and that the successful adoption of Internet technologies in part depends on how these are used in conjunction with the other technologies and management practices that form a 'technology cluster'. However the most critical barrier can be ascribed to the very limited information and communication infrastructure available in most countries, especially in Africa (Akoh, 2001).

Gerrard *et al.* (2006) investigated why some consumers shy away from using Internet banking. Common barriers include unsuitability for the type of business; enabling factors (such as availability of ICT skills, qualified personnel, network infrastructure); cost factors (ICT equipment and networks, software and re-organization); security and trust factors (security and reliability of e-commerce systems, uncertainty of payment methods, legal frameworks and Intellectual Property Rights); and challenges in areas of management skills, technological capabilities, productivity and competitiveness. Lack of reliable trust and redress systems and cross-country legal and regulatory differences also impede e-banking adoption (Suh and Han, 2002). It is however important to note that barriers to e-banking adoption work differently according to organizational type and culture, as areas of training and people development also need to be addressed (Chitura *et al.*, 2008).

**Challenges to internet banking:** While many hold the view that Internet banking has many advantages for developing countries, there are a number of major challenges to overcome before it can fully exploit the benefits of e-banking (Liao and Cheung, 2003). A number of constraints, specific to doing e-banking in Africa, are also apparent (Akoh, 2001). These include low level of economic development and small per-capita incomes; limited skills with which to build e-banking services; the number of Internet users needed to build a critical mass of online consumers and the lack of familiarity with even traditional forms of electronic commerce, such as telephone sales and credit card use (Kose, 2009; Lee, 2009).

Perhaps one of the greatest challenges to the adoption of Internet banking is the cultural reluctance to interface with business electronically. Such

challenges remain major obstacles, limiting the potential benefits of Internet banking. Other challenges are the cost of implementation, security concerns, perceived customer readiness, lack of knowledge of ICT and e-banking, the relatively high costs associated with investments in ICTs, the lack of technical and managerial skills and reluctance on the part of companies to network with other enterprises, lack of executive support and concerns regarding the reliability of technology (Tan and Teo, 2000).

## METHODOLOGY

The purpose of this study, as stated earlier, is to conduct an exploratory and descriptive research in order to gather information on a bank adopting Internet banking as an option in a competitive business environment in Ghana. The focus will specifically be on our case study bank (at times referred to simply as “the bank”).

**The case study bank:** Our case study bank (which has opted for anonymity) has operated in Ghana for over fifty years and is a wholly-owned subsidiary of an international bank. Its vision is to become the best bank in Ghana and make lives easier for its customers, employees and other stakeholders. It has an extensive retail and corporate banking network in the country, comprising of many branches and agencies. It has a good number of Automatic Teller Machines (ATMs) spread nationwide and It offers a wide range of corporate, retail and treasury products and services, targeted particularly at business and corporate clients, local business banking products and services targeted at small and medium scale enterprises and indigenous businesses, while extending personal products and services to its retail customers.

**The bank and internet banking:** Until recently, branches of our case study bank were experiencing a high number of customers either calling or walking in to make enquiries (mostly on low value cash transactions). This tends to cause congestion and dissatisfaction among the customers. So, about a year ago, as a direct response to such customer demands, the bank launched Internet banking for retail customers with the following features among others: account specific enquiries, instructions/transactions and security. The aim was to introduce an alternative channel in the form of a state-of-the-art computerized solution for that class of customers, thereby serving as a means for handling enquiries and transactions and help cut down on the branch congestion.

The specific objectives of the Internet banking launch were as follows:

- Introduce an alternative channel for the retail segment
- Provide more convenience to customers

- Help mitigate the crowding situation in the branches
- Compete favourably with their competitors and
- Implement processes related to handling of instructions and fund transfers (Banibensu, 2011).

**Research method:** Creswell (2003) describes three approaches to research-quantitative, qualitative and the mixed methods. In our work, we seek to have a deeper understanding of Internet banking adoption and its ability to give competitive edge and not to explain Internet banking. The research method option used here was the qualitative approach i.e., collection of data through interviews and surveys, taking into account the nature of the enquiry, accessibility of the sources of data, the type of data required and the resources available. It was decided that interviews should be conducted in the first instance for exploratory purposes so that the data collected would be valid and reliable so that the results could be generalized to the population (Neumann, 2006).

**Data source:** The nature of the information required is that of drawing on the knowledge and opinions of those in the senior management levels at the bank, people who are involved in decision-making in order to find out their opinions on Internet banking. As these staff was quite accessible, we felt that a face-to-face interview would be appropriate. The second stage of the data collection was interviewing front desk staff at banking halls, frontline staff that face customers directly and are expected to implement the bank’s Internet banking strategies. The population of interviewees for the second category will be greater than that for the first stage (Saunders *et al.*, 2009).

**Data collection:** According to Collis and Hussey (2003), there are two main sources of data: primary and secondary data. The research began with the collection of secondary data on what had already been written about the research topic and on documents available from the bank. We then progressed with the collection of primary data through semi-structured one-on-one interviews. This method allowed us to ask open-ended questions where the interviewees could feel free to share their views and express themselves. A few closed questions were also asked for comparison with the data collected from secondary sources. Naturally, interview responses could be easily influenced by the interviewer’s personal biases and idiosyncrasies. Our interviews were conducted in an open and friendly manner in a bid to avoid interviewer biases.

Our interviews were conducted on the Chief Executive Officer and the six other divisional heads (Internet Banking Executive, Finance, Chief Operating Officer, IT, Change and Business Improvement, Retail Banking) who form the executive committee

responsible for setting strategies for the bank. It is believed that their positions could have significant influences on the adoption and implementation of Internet banking at the bank. Findings from these initial interviews with the management staff were used as basis for the interview with the banking hall staff.

The population of the frontline staff sampled was mostly head office branch staff (40%) and the other 60% from three other branches. Each category involved the branch manager, two tellers and a personal banker.

### PRESENTATION AND ANALYSIS OF FINDINGS

Based on the objectives of the study, the interview questions and the outputs covered three main areas; these are presented to indicate the responses to the corresponding three research questions:

- What are the benefits that may be derived by adopting Internet Banking at the bank?
- What are the barriers to the adoption of Internet banking at the bank?
- What challenges does the bank face in adopting Internet banking?

**Benefits of adopting internet banking:** An overwhelming majority of the interviewees, 99%, are comfortable with and happy about the Internet banking and how it was impacting on their jobs. All the management staff (100%) and nearly all the personal bankers and tellers were in agreement that the provision of an alternative channel through Internet banking has been beneficial for the bank and its customers. Even though the bank's customers were not interviewed, it could be deduced from the feedback

gained from interviewing the frontline staff that the customers seemed satisfied.

Out of 20 members of staff interviewed, 16 (75%) answered the question that they are not likely to look for another job outside the bank within the next three years after the implementation of the Internet banking. One person or 6.3% of the interviewees was unsure if they would consider another job outside the bank whilst the remaining 18.7% said they were likely to consider another job outside the bank (Fig. 1). Improved working conditions will positively impact on the morale of the staff as work load will be reduced through customer education. Happy members of staff are generally content to stay longer with their current employers.

Secondary data provided by the bank showed that there had been a steady growth in the number of people registering for Internet banking. For example as at middle of June 2012, there had been a total of 7,010. This gives an average of over 8 I70 new registrations for internet banking every month. The growth in new registration is illustrated in Fig. 2 (which shows the weekly registration data for Internet banking as a proportion of total Internet banking registration). From the graph (Fig. 2), it is realized that apart from the two weeks commencing the 29th April when figures dipped 140 and 160, respectively, there has been a steady rise in the weekly number of new registration, peaking at 352 people in the second week of June 2012.

The response from interviewees indicates that there has been a proportionate decline in the number of customers either calling or walking in to make enquiries (especially for low value cash transactions). This means that the banking halls are less congested and they experience shorter queues. This is in agreement with the official figures from the bank

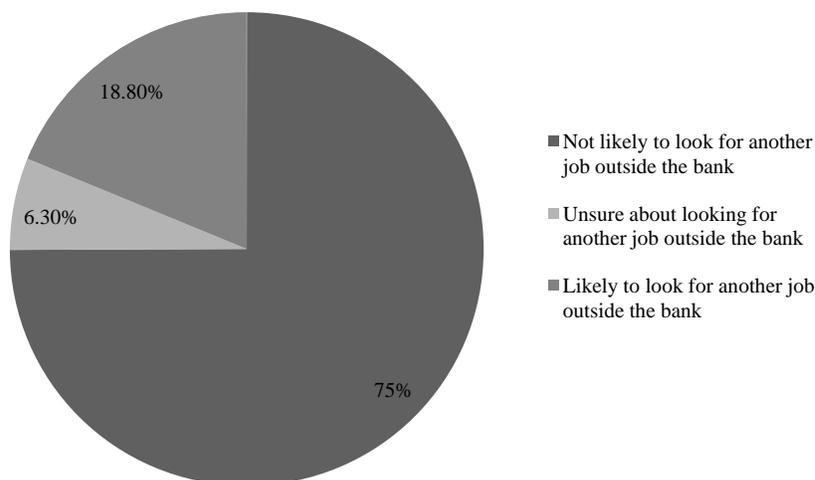


Fig. 1: Staff retention probability

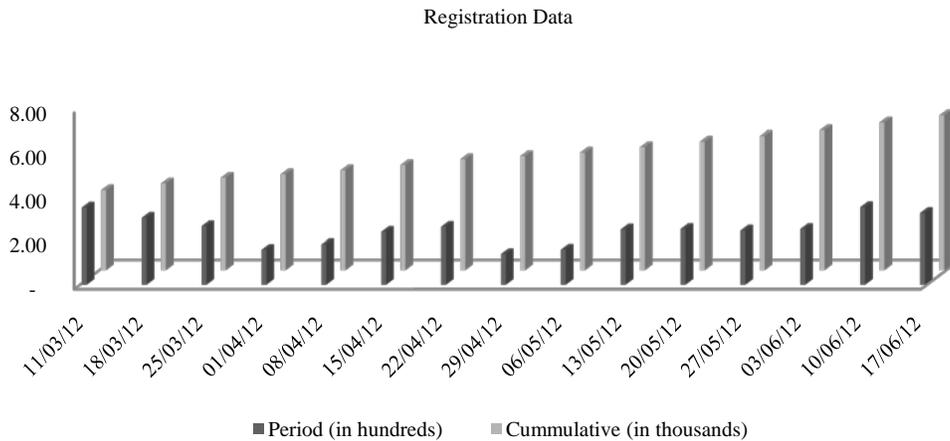


Fig. 2: Registration data for Internet banking

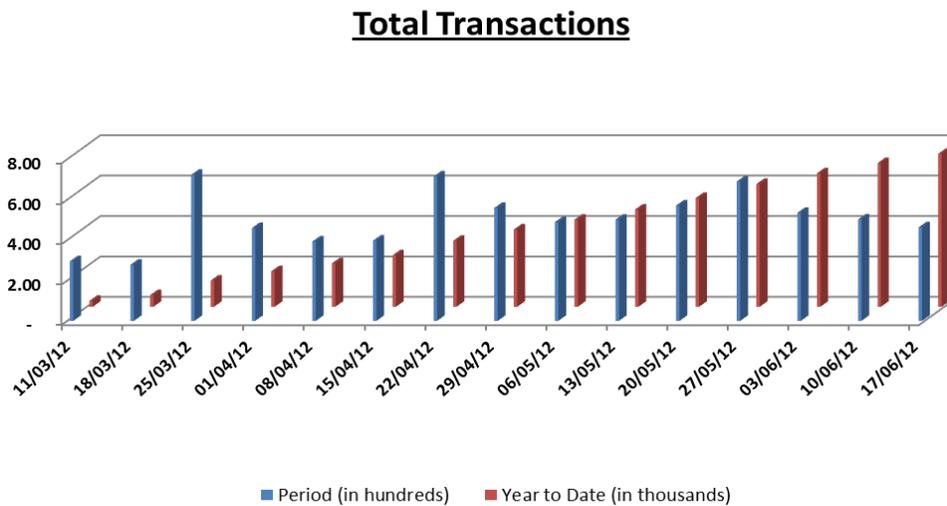


Fig. 3: Total number of weekly Internet transactions

that show that the peak hour visits to the bank’s branches has fallen by as much as 38% since the introduction of Internet banking to all retail customers i.e., customers do not have to visit their branches for some transactions.

From our results, introducing Internet banking at the bank has increased customer primacy through the quick response to account enquires, thereby reducing queuing and congestion in the branches. The rising number of Internet banking transactions bears testimony to this as shown in Fig. 3 which shows the total number of weekly Internet transactions as a proportion of the total transactions over the period.

To say that the bank adopted Internet banking as a response to new market trends and as a competitive strategy is an under-statement. Even though no specific margin was given to the question because of company policy, it was agreed by all the interviewees that turnover of the bank has increased since the adoption of Internet banking. While they did not attribute the

whole increase in turnover to the introduction of Internet banking, they agreed that the larger-than-usual growth in the present turnover had more to do with the adoption of Internet banking.

Respondents were asked how confident they were in their new jobs with the introduction of Internet banking. The responses were as in Table 1. On this question, 90% of the respondents said they are very confident, while 10% were fairly confident. There was none among the banking hall staff that was not confident. When the same question was posed to the bank’s management team, an absolute 100% was happy and confident as well as going on to say that the image of the bank has improved nationwide.

**Barriers to the adoption of Internet banking:** For the question as to what could have been the main hindrances to the adoption of Internet banking at the bank, the summary in Table 2 helps in our discussion. It was clear (Table 2) that funds to invest in the project had never been a problem for the bank, but rather

Table 1: Confidence in internet banking job

Answer options	Response count
Extremely confident	18
Fairly confident	2
Not at all confident	0
Total	20

Table 2: Barriers to the adoption of Internet banking

Response	Count
Lack of Resources (Funds)	0
Not sure	2
Retail customer base not big enough to merit the investment	2
Did not see the need for it	0
Socio-cultural attitude	3
We just took our eyes off it	2

Table 3: Total number registered for Internet banking

Total customers	596,000
Total registered Internet banking users (since inception)	6,928
Adoption rate	1.16%

socio-cultural attitudes in Ghana. It is also true that the main computer file server for the bank's Internet banking is sited in another country, which is in a different time zone. This tends to be a problem, especially with the I.T set-up necessary to support the Internet banking.

Another barrier faced is that the bank does not provide all the advertised Internet banking services that the mother bank provides. An example is the suppression of the online bill payment facility (which the mother company provides in other African countries) on the grounds of security. All the frontline staff interviewees expressed concern about complaints from customers about not being able to use the bill payment facility when using Internet banking.

**Challenges to the adoption of Internet banking:** The bank had challenges as it sought to adopt Internet banking. These include customer illiteracy and fear, as well as power outages and resistance to change. The bank has to deal with low levels of registration for Internet banking particularly among the farming communities (who form a major part of its clients). Generally the level of illiteracy of these farmers is high and they are not able to use computers or do not have access to Internet facilities. The study showed that such customers are almost impossible to convince as they fear the possibility of someone accessing their accounts in their absence.

The level of power outage in Ghana is quite high. Thus, customers may still have to visit the branches on some occasions as they might not have electricity supply at the time they need to undertake transactions on the Internet. There is also an element of cultural reluctance to change among some of the bank's customers to adopt Internet banking. This was evident from the responses that some customers just feel okay with their traditional way of banking and will therefore

not sign up for Internet banking even though they do understand the benefits and have the resources to use them. Table 3 gives a picture of the number of customers signed up for Internet banking compared to the total number of the bank customers.

According to the data provided, out of a total of 596,000 customers of the bank, only 6,928 have registered as users of Internet banking eight months after the scheme was launched for retail customers. This gives an adoption rate of 1.16 per cent-which is rather low.

As a final word, it is worth adding here that from our interviews, it came to light that adopting Internet banking at the bank fits within the bank's Africa strategy of introducing alternative channels to reduce congestion at branches. All the management staff reiterated that adopting Internet banking was in support of the bank's guiding principle of customer and client focus. The platform for Internet banking had therefore been set as part of a strategic project to modernize all the bank's branches in Africa.

## CONCLUSION

From the study, it is clear that the benefits to the bank served as a motivating factor for it adopting the Internet banking product. The salient benefits as realized could be summarised as to include higher operational efficiency which leads to improved customer service and customer satisfaction; enhancement of the bank's brand and improved competitiveness of the bank; enhancement in the bank's earning capacity and therefore better positioning of the bank within the market; better staff morale as a result of better working conditions, as well as the bank's income protection through attracting and retaining existing customers.

The bank, being a wholly owned subsidiary of an international bank, does not face challenges such as limited skills base, security concerns, high investments costs in ICT, etc. These were covered by the mother company which is a global brand with large market shares. Instead, the bank faces its own local challenges in the socio-cultural set-up in Ghana. This includes, primarily, resistance to change to adopt the Internet banking scheme. The sitting of technical equipment outside the country of operation also means that geographical differences have direct impact on both IT staff and other accessories supporting the e-banking systems. Also, the banks inability to unify the features and services internationally from a common platform is a challenge that has become a barrier for them to attract certain types of customers, e.g., those who would like to make online bill payment when transacting business via Internet banking. Other general barriers, however, do not have significant impact on the bank's quest to adopt Internet banking.

In conclusion, in the bank adopting Internet banking, there are benefits, challenges and barriers that the bank faces, but as has been established from our

study, the benefits outweigh the challenges and the barriers. What is needed is for the bank to take steps to minimize the challenges and overcome the barriers. Finally, it is recommended that the findings in this study should be adopted by all banks to offer Internet banking to retail customers in Ghana.

## REFERENCES

- Abor, J., 2004. Technological innovation and banking in Ghana: An evaluation of customers' perceptions. *Am. Acad. Financ. Manage.*, 1: 1-16.
- Akoh, B., 2001. E-business in developing world Africa and Ethiopia (Ethiopia in the knowledge age). Unpublished Report, 2001.
- Al-Abed, S.A., 2003. Electronic Banking. Retrieved form: [http://www.bankersonline.com/technology/gurus\\_tech081803d.html](http://www.bankersonline.com/technology/gurus_tech081803d.html).
- Al-Mudimigh, A.S., 2007. E-business strategy in banking services: A case study of internet banking and commerce. *J. Internet Banking Commerce*, 12(1): 1-8.
- Balachandher, K.G., V. Santha, I. Norazlin and R. Prasad, 2001. "Electronic Banking in Malaysia: A Note on Evolution of Services and Consumer Reactions."
- Banibensu, E., 2011. Seven Quality Tools for Process Improvement. Retrieved form: <http://www.elikebanibensu.com/seven-quality-tools-for-process-improvement.html#more-111>.
- Basu, A. and S. Muylle, 2007. How to plan e-business initiatives in established companies. *MIT Sloan Manage. Rev.*, 49(1): 28-36.
- Bauer, K. and S.E. Hein, 2006. The effect of heterogeneous risk on the early adoption of internet banking technologies. *J. Banking Financ.*, 30(6): 1713-1725.
- Calisir, F. and C.A. Gumussoy, 2008. Internet banking versus other banking channels: Young consumers' view. *Int. J. Inf. Manage.*, 28(3): 215-221.
- Chitura, T., S. Mupemhi, T. Dube and J. Bolongkikit, 2008. Barriers to electronic commerce adoption in small and medium enterprises: A critical literature review. *J. Internet Banking Commerce*, 13(2): 1-13.
- Ciciretti, R., I. Hasan and C. Zazzara, 2009. Do internet activities add value? Evidence from the traditional banks. *J. Financ. Serv. Res.*, 35(1): 81-98.
- Collis, J. and R. Hussey, 2003. *Business Research*. Palgrave MacMillan, New York.
- Cotman, T.R., T.M. Devinney and D.F. Midgley, 2007. E-business strategy and firm performance: A latent class assessment of the drivers and impediments to success. *J. Inf. Technol.*, 22(2): 87-101.
- Creswell, J.W., 2003. *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. SAGE Publications, Los Angeles.
- Dankwah, B.A., 2012. Adopting internet banking in Ghana: The case of barclays Ghana limited. M.Sc. Thesis, Centre for Communication, Media and Information Technologies (CMI), Aalborg University, Copenhagen, Denmark.
- Eriksson, K. and D. Nilsson, 2007. Determinants of the continued use of self-service technology: The case of Internet banking. *Technovation*, 27(4): 159-167.
- Furst, K., W. Lang and D. Nolle, 2002. Internet banking. *J. Financ. Serv. Res.*, 22(2): 95-117.
- Georgescu, M., 2005. Some Issues about Risk Management for E-Banking. Silesian University, Karvina, Retrieved form: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=903419](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=903419).
- Gerrard, P., J.B. Cunningham and J.F. Devlin, 2006. Why consumers are not using Internet banking: A qualitative study. *J. Serv. Market.*, 20(3): 160-168.
- Kose, A., 2009. Determination of reasons affecting the use of internet banking through logistic regression analysis. *J. Glob. Strateg. Manage.*, 6: 1-10.
- Lai, V.S. and H. Li, 2004. Technology acceptance model for Internet banking: An invariance analysis. *Inf. Manage.*, 42(2): 373-386.
- Lallmahamood, M., 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 ecommerce: Using an extension of the technology acceptance model. *J. Internet Banking Commerce*, 12(3): 1-26.
- Lee, M.C., 2009. Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electron. Commer. Res. Appl.*, 8(3): 130-141.
- Liao, Z. and M.T. Cheung, 2003. Challenges to internet e-banking. *Commun. ACM-Mob. Comput. Opportunities Challenges*, 46(12): 248-250.
- Melão, N., 2008. E-business, E-business process and E-business process modelling: A state of the art overview. *MIS Quarterly*, 21(1): 55-98.
- Mols, N.P., 2001. Organizing for the effective introduction of new distribution channels in retail banking. *Eur. J. Market.*, 35(5): 661-686.
- Neumann, W.L., 2006. *Social Science Research: Qualitative and Quantitative approaches*. Allyn and Bacon, Boston.
- Saunders, M.N.K., A. Thornhill and P. Lewis, 2009. *Research Methods for Business Students*. 5th Edn., Financial Times Prentice Hall, Harlow.
- Seitz, J. and E. Stickel, 2002. Internet banking: An overview. *J. Internet Banking Commerce*, 3(1).
- Suh, B. and I. Han, 2002. Effect of trust on customer acceptance of Internet banking. *Electron. Commerce Res. Appl.*, 1(3): 247-263.
- Tan, M. and T. Teo, 2000. Factors influencing the adoption of Internet banking. *J. Assoc. Inf. Syst.*, 1(5): 1-42.

Windrum, P. and P. De Berranger, 2002. The adoption of E-Business Technology by SMEs Infonomics Research Memorandum Series. Retrieved form: <http://arno.unimaas.nl/show.cgi?fid=205>.

Zwass, V., 1996. Electronic commerce: Structures and issues. *Int. J. Electron. Commerce*, 1(1): 3-23.