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An Assessment of E-commerce Adoption in the Banking Industry of Ghana

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Abstract:

The purpose of this research was to investigate into the positive impacts of ecommerce adoption in the banking industry of Ghana. The driving force of this study include issues of the banking industries in the economy of Ghana that are ready to embrace the adoption of e-commerce in their operations. As indicated above, the use of e-commerce in the economy of Ghana and for that matter the banking industry of Ghana still remain relatively a new concept as not all banks use e-commerce in their operations and are yet to experience the implementation of e-commerce and its associated benefits. The methodology adopted for the study is the mixed method technique, consisting of both qualitative and quantitative. For the purpose of data collection, semi-structured interviews as well as survey questionnaires were administered to the respondents who are mainly staff of Fidelity Bank in the Head Office and across the fifty branches of the bank. A total sample size of 250 respondents consisting of some of the employees of the 46 branches of Fidelity Bank in Ghana were used. The study identified a positive significant between e-commerce and all the effects. The null hypotheses were thus rejected by the results. The results of the study generally indicated that, the e-commerce adoption has contributed positively to the provision of cost effective operations in the bank, improved communication within the bank and reduced paper work in the bank.

1. Introduction

Commercial banks that use ecommerce in their operations become candidates for success more than others who fail to embrace ecommerce. Banks in the developed economies have found this secret and are doing so well in the use of ecommerce in their banking operations but their counterparts in the developing countries still have more room for improvements. However, it is an open secret that ecommerce helps the banks to reduce operational cost, increase in market share and meet the expectations of its customers (Anthes, 1996). The importance of ecommerce in the execution of business transactions cannot be overemphasized be it general business or a financial institution as in the case of this research (Gross, Hester, & Javalgi, 1995). Lately Information Technology (IT) is considered as a very important and most useful part of industry, economic and culture. As a system of recording and summarizing business that provides information for decision-making, IT facilitates the operations of most financial institutions (Allahyari, Gharabaghi, & Ramazani, 2012).

The banking services provided by banks in Ghana have seen several changes over the years. The introduction of ecommerce in the operations and service delivery of the banks have brought about lots of changes. Initially in Ghana for customers to know the transactions on their accounts, what used to be savings passbooks were put in place by banks and these savings passbook were manually updated by the bank officials. At the time, customers of various commercial banks in Ghana were required to carry their passbook physically to the bank before they could transact on their accounts. Banks in Ghana used to operate with savings passbook. They also had limited closing time. Twenty-four hour banking services were out of the equation. There were also few banks in the country in the likes of Barclays Bank and Standard Chartered Bank. Customers did not have the luxury of getting access to their accounts regularly as they had to be physically be present at their various bank branch offices before they could access a service of the bank. Commercial banks did not have ecommerce fully implemented in their operations.

Following lots of technological revolutions that took place in the banking industry globally, banks in Ghana had no option but to introduce ecommerce into their banking operations. Currently, and unlike a few years ago, banks have seen lots of improvement in their operation as a result of the introduction of ecommerce in their operations. There has been an increase in profit, decrease in operational cost. Customers of the various commercial banks in Ghana now have access to their accounts countless times and can print their account statements without any limitations. With the help of ecommerce telephone and internet banking have been made possible, access to client's accounts have been made easier in the commercial banking industry of Ghana. Ecommerce has introduced greater efficiency in the services of the commercial banks. Customers have access to their accounts during week days and also at weekends as well as extended working hours which obviously is of great benefit to the bank since their ability to meet their customers' expectation goes a long way to help the bank experience increase in market share and growth. Since all the multinational commercial banks in the banking industry of Ghana are all using e-commerce and are fully networked now, they are have been able to reduce the queue in the banking hall, experienced efficiency in its operations. Even their customers are able to access the various access the bank without the need for them to be physically present at their accounts domiciled branches thereby giving the customers lots of

convenience and the bank smooth operations and growth. Thanks to introduction of e-commerce in commercial banking industry of Ghana as life is made easier and faster and eventually banks have seen increase in profit and profitability.

Information and Communication Technology (ICT) and for that matter ecommerce has seen massive advancement in recent times which in effects has impacted greatly on commercial banking industry of Ghana. Ecommerce has facilitated the ideologies, the organizational strategies, business structures, accurate record keeping, ability to produce timely information in its operations, reduced and possibly eliminated manual operations and other benefits to the financial sector. The importance of ecommerce even on various economies of the world cannot be over emphasized and more especially on the financial sector of the economy.

2. Problem Statement

The main reasons for conducting an investigation into this research topic are two. They are: (a) even though, the developed countries have benefited from lots of research works that are focused on them, only few research works have focused on e-commerce adoption and its associated benefits on West African country like Ghana; and (b) some industries in Ghana have been very successful with the use of ecommerce which include the commercial banking industry of Ghana even though the ecommerce concept has not reached every part of the banking industry of Ghana.

The appropriate and continuous use of e-commerce has helped shaped the future of the banking industry in developed countries. Many changes have taken place in the financial services industry in the developed countries. These changes find their bases to be the introduction of ecommerce into the industry. Any bank that is serious and want to become a leader in the banking industry of the developing countries cannot afford to ignore the adoption of the appropriate use of e-commerce in its operations. Banks in the commercial banking industry have resorted to employing appropriate e-commerce in their operation with the hope of generating lots of benefits, however, the exact benefits that e-commerce generate for these banks differ according to the banks in question, thus specific impact of e-commerce in the operations of commercial banks in developing countries are not clearly identified hence the need for this research work to identify the major benefits of e-commerce adoption in the operations of banks. Empirical studies assessing the exact positive impact of e-commerce in the commercial banking industry of Ghana are however limited and inclusive (Cook & Cohen, 1995).

A research by Quah et al., (1996) concluded that e-commerce has impacted the business of banking in a very positive way as lots of labor intensive works are automated which has brought increase in productivity, however, the specific benefits besides the ones mentioned above with respect to adoption of e-commerce with regards to the banking industry of Ghana still needs to be researched on, hence this study. Technology has changed the face of business over the years. It has changed the way businesses are structured as well as the way businesses are executed. It is acknowledged that there is an increasing concern about the level of competencies various professionals in the financial industry possess in the use of information technologies, and whether they are prepared to meet the challenges of contemporary business world (Bahador, Haider, & Saman, 2012).

Investigating the impacts of e-commerce in the banking industry, will help provide clear understanding of those benefits with particular reference to West Africa commercial banks and for that matter Ghana commercial banks. The study focused on Fidelity Bank Ghana because, the bank initially did not have e-commerce adopted in its operations but later embraced it which went a long way to help the bank. In the nutshell, the reason for this research work are: 1) there are limited research work on e-commerce impacts on commercial banks which focus on West Africa and 2) there are limited understanding of the exact benefits of ecommerce adoption in the commercial banking industry of Ghana.

3. Objectives

The main objectives of this study include;

1. To assess e-commerce effects on banking performance in Fidelity Bank
2. To ascertain whether the adoption of e-commerce has reduced paperwork in the banking industry
3. To find out how the adoption of e-commerce enhance communication in the banking industry in Ghana

3.1. Research Questions

The research questions that guided this study were:

1. Has the Adoption of e-commerce affected the performance in Fidelity Bank Ghana Ltd?
2. Has the adoption of e-commerce reduced paperwork in the bank?
3. Has the adoption of e-commerce made communication easy in the bank?

4. Review of Related Literature

Ecommerce in its self can be considered as a product of innovation and many research works have been carried out in ecommerce with the help of innovation diffusion theory (Quah, 1996) and therefore Innovation diffusion theory will form the basis of this research work. Quah (1996) indicated that, ecommerce innovation refers to information technology that is applied in the operations of the organization for purpose of eliminating manual processes and to achieve more efficiency in the operations of an organization. The innovation may be new to the firm adopting it but might not necessary mean that, it is a new invention.

The innovation may be in existing and may have been used by other firms in the same industry to generate some known benefits, however, the firm that is adopting it would have to see it as new in order to carefully use it to generate the expected impacts (Garber, Cook & Cohen, 1997). Thus, innovation diffusion theory is in this case, the appropriate theory to be used to research on the impact of e-commerce adoption on the operations of commercial banks in developing countries (Gurley, 1997)

Gurley (1997), identified some of the benefits of ecommerce in the banking industry. Quah (1996) identified and grouped the seven main benefits of ecommerce in banking under two characteristics of innovation. They are internal benefits and external benefits that impacts and influence decisions with regards to technological innovation in corporate environments like commercial banking industry (Hester & Javalgi, 1995). Hester and Javalg (1995) identified two groups of predictors of innovation: major benefits of innovation and challenges of adopting innovation in business. In the nutshell, two main issues are located in technological innovation literature: (a) benefits that is seen internally by the relevant stakeholders (internal benefits); and (b) benefits that are externally seen even though they have their basis from within the company (external benefits).

Researchers have identified the following internal benefits relating to ecommerce adoption in the commercial banking industry (and specifically the adoption of ecommerce in the operations of the commercial banks): accurate record keeping, reduce paper work, easy communication, reduce operational cost (Nash & Wallace, 1995).

External benefits include increase profit, increase competitive strength and growth of the bank (Garber, Cook & Cohen, 1997). The external benefits, even though, have its roots from the internal benefits but they are easily seen by the outsiders which becomes the image of the organization which comes from the implementation of ecommerce in business. In the adoption of ecommerce in the operations of business such as the commercial banks, management would have to expect to have some major benefits which will help the firm to grow internally and externally (Sullivan, 1997). Some researchers have integrated these internal and external benefits into one model (Seilheimer, 1987; Nash & Wallace, 1995) which has given room for putting all these benefits and their relations under one framework.

Such a framework has the capacity to link all the benefits in an excellent manner in such a way that, adopters of ecommerce would be assured of lots of benefits with respect to investment in ecommerce (Gerald, 1997). Feed (1997) integrated findings from studies that investigated various outcomes with respect to innovations and proposed a model of ecommerce adoption.

4.1. Diffusion of Information Technology Innovations

Innovation diffusion is a multidisciplinary field with contributions from sociologists, communication researchers, organizational researchers, IT researchers and many others (King, 1995). Kneen's (1994) classical model of diffusion greatly shaped the basic concepts, terminology, and scope of the field of innovation diffusion (Wilde, 1996). Innovation studies conform to one of two general styles of research: adopter studies and diffusion modeling studies (Thyfaut, 1994). Adopter studies are basically concerned about understanding differences in adopter innovativeness. The usual approach is to survey an organizations in some population of interest to capture data about: The characteristics of those organizations and their adoption context; and the timing and extent of adoption of one or more innovations. Diffusion modeling studies are primarily interested in what determines the rate, benefits and extent of technology diffusion (Takahashi, 1997).

4.2. Factors Affecting Diffusion of IT Innovations

The benefits of innovation (ecommerce) can be classified into seven broad groups: accurate record keeping, reduce paper work, easy communication, competitive strength, cost reduction, increase profit, and growth of the bank. The seven groups are related to the seven fundamental research questions identified in the previous section. The benefits of ecommerce adoption become the motivating factor which pushes firms to embrace the use of ecommerce in their operations (Frank, 1994).

4.3. E-commerce Adoption

The dependent variable is adoption of ecommerce. In this study, adoption of ecommerce is defined as the use of computer networks, principally the internet, for sharing of business information; maintaining of business relationships; and conducting of business transactions (Ziegler, 1996). The likelihood of ecommerce adoption was operationalized as a dichotomy: whether the business has or has not adopted ecommerce. A business is defined as having adopted ecommerce if it is achieved interactive ecommerce status. Wilde (1996) identified a seven-phase ecommerce benefits relevant to organizations in developing countries; they are: accurate record keeping, reduce paper work, easy communication, competitive strength, cost reduction, increase profit and growth of the bank.

4.4. Empirical Studies on E-commerce in the Banking Sector

Globally, retail banks are entering a new era. Setting out a clear strategy is becoming more difficult as regulatory and political intervention changes the market structure, and banks are under enormous pressure to restore public confidence in the role that they play in society. As banks respond to these structural pressures across markets and strive to obtain a competitive advantage, the challenge remains to keep the customer experience and wider brand perceptions central to all strategic thinking; in terms of technology and service quality (Ankrah, 2012).

Technological advancements in the areas of telecommunications and information communication technology over the past few decades has transformed business operation systems in both developed and the developing world especially in financial services delivery. The advent of Information and Communications Technology has led to the proliferation of electronic-based banking products as an alternative channel for routing banking services to customers (Narteh, 2012). This has positively influenced banking operations globally by transforming banking operations from paper-based operation to computer and internet oriented operations (Al-Jabri & Sahail, 2012). In fact, the financial services sector worldwide has experienced enormous innovation describing the sector as innovative, turbulent, and competitive to benefit all stakeholders especially customers.

Ghana today has experienced major transformation as most banks strive to serve Ghanaians in reasonable time compared to spending precious hours in most banking halls to access any form of financial service between 1980s and early 2000s. Further, critical factors

like technological developments and keen competition have forced banks to respond to challenges faced by the banking public hence rapid adoption of innovative marketing strategies to satisfy customers with innovative products and services to clients while reducing operational costs (Sohail & Shanmugham, 2003). It is worth noting however, that customers of some banks in Ghana become frustrated when transacting business with banks especially if one was not privileged to be a customer of the few elite banks. Long winding queues within banking halls are common phenomenon still portraying Ghana's financial market as transactional or sellers' market instead of being customer oriented.

5. Methodology

This study is based on exploratory and confirmatory research and more especially on confirmatory since it aims at finding the impact of ecommerce adoption on commercial banks in Ghana with the help of a known theory. In order for the researcher to gather the relevant and valid data in line with the object of this study as well as the nature of the questionnaires, the researcher used the mixed approach of data collection, where both qualitative and quantitative data collection methods were used. In this research, a sample size of 250 respondents consisting of some of the employees of the 46 branches of Fidelity Bank in Ghana were used. The study sought to review the use of e-commerce implementation in the commercial banking operations and its effects on the overall performance of the bank. Also, the staffs of fidelity bank who are in the head office IT department as well as some of the branch staff, especially the branch managers were interviewed in this study. With the help of semi-structured telephone interview the views of the managers and others who gave their opinion on the benefits of ecommerce as per this topic were assessed.

6. Findings and Results

The purpose of this research work was to ascertain the extent to which commercial banks in Ghana, and specifically Fidelity Bank Ghana limited has applied e-commerce in its operations to achieve reduced cost of operations and improved profit and profitability. In the international and local terms, the introduction of e-commerce into business and for that matter commercial banking industry has changed how banks undertake their banking operations which eventually results in increase in productivity and profitability (Quah et al., 1996). Even though some companies in the world are yet to fully embrace the use of e-commerce including some rural banks in Ghana.

6.1. Analysis of E-commerce Effects on the Bank Performance

Table 1 shows the summary statistics of E-commerce adoption and its effects on Fidelity Bank's performance. All the respondents support the idea that e-commerce has significantly contributed to the efficient operations of Fidelity Bank Ghana Limited. In more precise terms, in terms of decrease in operational cost, competitive strength of Fidelity bank, growth of the bank and, increased in market share, majority of the respondents strongly agreed that e-commerce adoption has had a positive effect on the bank's performance as they recorded mean values of 4.9900, 4.5692, 4.2269 and 4.2265 respectively on the five-band Likert scale. In the same way, increased in profits and accurate record keeping recording 3.7710 and 3.7696 means respectively on the same scale also show that some respondents were neutral.

Code	Regressor	M	SD
A1	Accurate record keeping	3.7696	0.56137
B2	Increase in profits	3.7710	0.56137
C3	Decrease in cost	4.9900	0.00099
D4	Increase in market share	4.2265	0.76979
E5	Competition strength	4.5692	0.79580

Table 1: Summary Statistics on E-commerce effects on the bank performance

Table 2 shows the correlation coefficients for the coded regressors. The performance of the bank and accurate record keeping were strongly correlated, $r(248) = 0.747$, $p = 0.000$; bank's performance a strong relationship with increased in profits, $r(248) = 0.849$, $p = 0.000$ and; again the bank's performance was also found to correlate strongly with increase in market share, $r(248) = 0.940$, $p = 0.000$.

Code	O	A1	B2	C3	D4	E5
O	—					
A1	0.747*	—				
B2	0.849*	0.715	—			
C3	1.000	0.821	0.260	—		
D4	0.940*	0.497	0.328	0.229	—	
E5	1.000	0.660	0.281	0.262	0.255	—

Table 2: Pearson Correlation Coefficients on the Bank's Performance

Code	B	SE B	B	p
K	0.361	0.205		
A1	0.620	0.072	0.556	0.0001
B2	0.391	0.074	0.411	0.0001
C3	0.622	0.089	0.654	0.0001
D4	0.251	0.085	0.236	0.0039
E5	0.956	0.098	0.875	0.0001

Table 3: Regression Coefficients for Bank Performance

The predictor model, using the structured beta coefficients as shown as follows:

$$O = 0.361 + 0.556A1 + 0.411B2 + 0.654C3 + 0.236D4 + 0.87E5$$

The model was found to be significant and explained variations in the total performance of Fidelity Bank given the accurate record keeping (A1), increase in the operational of the bank (B2), decrease in operational cost (C3), increase in market share (D4) and improved competitive strength (E5).The model provided an adjusted R² explaining 90.5% of variation of the population accompanying a statistically significant p-value of 0.0000.

6.2. Analysis of E-commerce Effects on the Bank Record Keeping

Code	B	SE B	B	p
K	0.361	0.205		
A1	0.720	0.072	0.756	0.0001*

Table 4: Regression Coefficients for Bank Record Keeping

Notes. Adjusted R² = 0.905*, p < 0.05. ** p < 0.10. r = 0.747.

The model was supported by a significant correlation between the bank’s performance and accurate record keeping, $r(248) = 0.747, p = 0.0001$. Thus, we derived a significant model with 0.747 correlations between the predictor and the bank’s performance.

Accurate record keeping helps to see the immediate and primary impact of ecommerce thus help to discriminate between dependent and the independent variables. It seems that the primary impact of ecommerce adoption sets the tone for greater impact of ecommerce in business. All the discussions within this variable were significant discriminators. The mean value for primary impact was significantly larger than the mean value for secondary impact. This is consistent with Wilde, (1996) assertion that accurate record keeping is crucial and a relevant benefit to be looked for in the acquisition and implementation of ecommerce in business and diffusion of innovation. Therefore, we conclude that ecommerce adoption positively impacts accurate record keeping in business.

6.3. Ease of Communications

Again, respondents were asked if ecommerce had made communication easy within Fidelity Bank. From the total sampled size, eighty seven percent of the population strongly agreed with the statement that adoption of ecommerce has made communication easy in the bank while thirteen percent of the population also agreed with the statement as well.

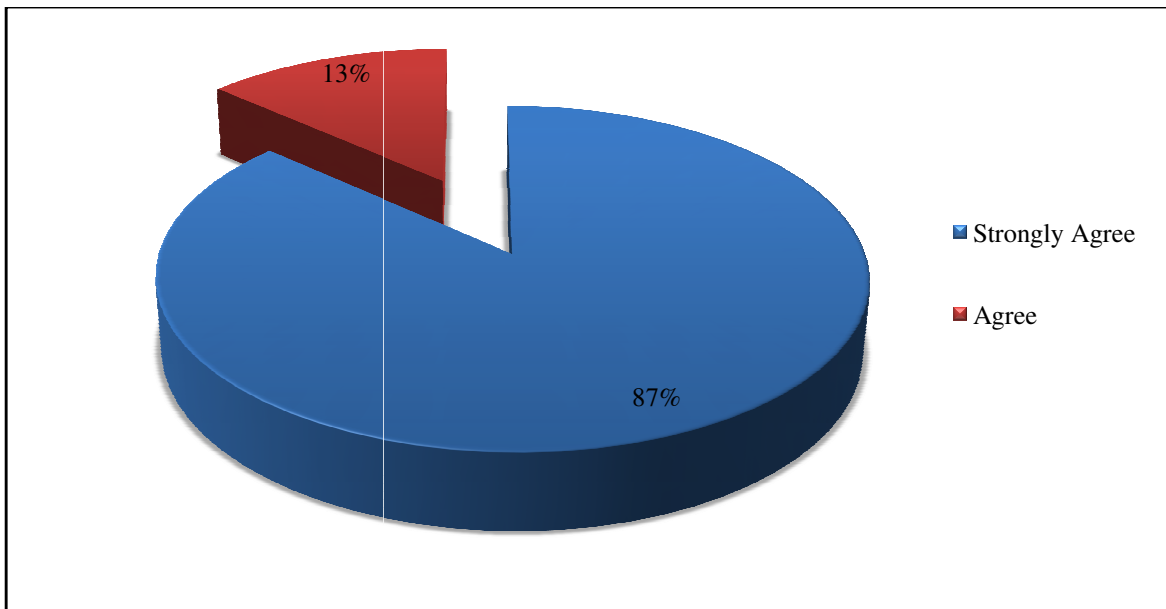


Figure 5: Adoption of e-commerce makes communication easy

Figure 4 shows that data collected from respondents indicated that eighty-seven percent of the population strongly agrees that e-commerce implementation has made communication easier in the bank while thirteen percent also agree that information technology has made communication easier. These findings collaborate with the earlier research works of Dvorak (1996) and Quah et al. (1996). These researchers observed that the use of e-commerce affects the operations of commercial banks positively by easing pressure in the banking halls (helps to overcome overcrowding) makes enquiry easy and less stressful, saves the time of customers, and removes commissions and omissions in service delivery. According to them, investment in e-commerce by commercial banks has helped to overcome human errors and delays and has helped the commercial banks increase their productivity and profitability making them more competitive against their peers.

7. Conclusion

From the findings, it was established that the performance of Fidelity Bank is affected by the e-commerce implemented in its core operations. There is a rapid development in technology and hence Fidelity Bank is not being left behind in the adoption of e-commerce, due to either pressure from the stiff competition in the industry or the desire to maximize the returns on shareholders' funds. The study used correlation and regression analysis to find the relationship between e-commerce and the overall performance of the bank. The findings of the study indicated that the model was significant. All the independent variables were also linearly related with the dependent. This paper has shown the importance of e-commerce in the overall productivity and profitability of Fidelity Bank limited in Ghana. Beyond the quantitative analysis, the paper presents an exploratory investigation into the various benefits of e-commerce in the operations of Fidelity Bank Ghana limited. All of this analysis points to the need for the bank to continually invest in e-commerce and effectively use them to achieve the expected results in the bank.

E-commerce application in the banking industry of Ghana has changed the way banks undertake their banking operations. It is argued that the commercial banking industry has experienced drastic changes of the years due to introduction of e-commerce into the industry and others also think the use of e-commerce has helped and will continue to help banks for it has come to stay (Quah et al., 1996).

The study indicated that the adoption of e-commerce by Fidelity Bank Ghana has helped the bank to reduce operational costs that were normally incurred before the use of e-commerce. The study showed that ninety-five percent of respondents agreed that operational cost has reduced leading to more efficiency in the operations of Fidelity Bank in the commercial banking industry of Ghana, which goes a long way to confirm the leadership role of the bank in the industry. Again, it was also realized from the study that e-commerce helps improve revenue and profits, eighty five percent of respondents shared this opinion and assertions collaborates the findings by Sullivan (1997) that information and communication technology impacts on how and when management decides with implications on the bottom line

Furthermore, it was realized from the study that e-commerce has helped to enhance the competitive strength of Fidelity Banks Ghana. It was clear that, the improve performance level with the help of e-commerce was what Fidelity Bank Ghana expected in the period within which they have implemented the required and the relevant e-commerce in their operations. The implemented e-commerce was intended to offer excellent customer service and eventually increasing their productivity and profitability in the commercial banking industry of Ghana. The implemented e-commerce has brought about accurate records keeping in the bank, service delivery with speed, customer satisfaction in the operations of Fidelity Bank Ghana. With elimination of manual processes by the e-commerce, customers no longer waste times in dealing with the bank.

8. Recommendations for Policy Formulation and Implementation

The managers and other decision makers of Fidelity Bank Ghana limited should try as much as possible not to be complacent in the use of e-commerce as it has already yielded positive results on their operations but should come up with policies and procedures that would ensure that the bank continue to use e-commerce in its operations. Now that the e-commerce has helped the bank to reduce operational cost, increased the profit of the bank and many other benefits, an enabling environment that will facilitate and continue to encourage easy adoption of e-commerce in the bank should be created to ensure sustained profits and profitability of the bank. The management of the bank should implement policies such as putting in place e-commerce oversight committee to ensure the bank achieve its targets of improved profit, increased in market share and improvement in the overall performance of the bank.

Again, for the implemented e-commerce to achieve the expectations of the various stakeholders of the bank, there is the need for management to provide the needed support to the e-commerce implementation committee, the Information Technology department, all employees and all the users of the system. The management should also put in place monitoring structures such as system down time monitoring software so as to ensure that the system continue to work effectively and efficiently in line with the expected outcome of the bank.

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