CHALLENGES OF E-BANKING ADOPTION AMONG THE COMMERCIAL BANKS IN KENYA

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ABSTRACT

The objective of this study was to investigate the factors influencing e-banking adoption among commercial banks in Kenya, and the challenges faced by commercial banks in the adoption of E-banking. Descriptive research design was adopted for the study. The study population comprised of all the 44 commercial banks in existence at the time of study. The study was conducted by use of questionnaires which were distributed to all commercial banks in Kenya

The results showed that banks had only partially adopted e-banking as a strategy. The issue of security was found to be the most critical factor influencing e-banking adoption. Other major inhibitors were inadequate regulatory support, lack of in-house it professionals and quality of infrastructure.

Key words: *e-banking, adoption,*

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Introduction

A strong banking industry is important in every country and can have a significant effect in supporting economic development through efficient financial services. In Kenya the role of the banking industry needs to change to keep up with the globalization movement, both at the procedural level and at the informational level. This change will include moving from traditional distribution channel banking to electronic distribution channel banking. Given the almost complete adoption of e-banking in developed countries, the reason for the lack of such adoption in developing countries like Kenya is an important research that will be addressed by this paper.

Environmental changes create pressure for change in the organization and this means that they have to respond to relevant central change to ensure that they survive (Ansoff and Mc Donnell 1990). Technology which is a constituent of the environment has facilitated electronic commerce, which has in turn relied heavily on the presence of a stable and secure means of payment. The banking industry has taken advantage of the opportunities presented by electronic commerce. Electronic Banking is a complimentary to, and a manifestation of electronic commerce, for the simple reason that electronic commerce requires a payment system that is easily and readily processed.

As the internet becomes more important for commerce, internet websites will take on a more central role in most companies' strategic plans. The success of electronic banking is determined not only by banks or government support, but also by customers' acceptance of it. Electronic banking acceptance has gained special attention in academic studies during the past several years as banks move towards implementing electronic banking as part of their overall strategy. The business benefit of the electronic banking is to generate additional revenue, improve customer service, extend marketing, and increase cost saving.

Continuous technology development, particularly information technology revolution of the last two decades of the 20th century has forced the banks to embrace e-banking as a strategy for their sustainable growth in an expanded competitive environment. E-banking has made the financial transactions easier for the participants and has introduced wide range of financial products and services.The internet has changed the operations of many businesses, and has been becoming a powerful channel for business marketing and communication (American Banker, 2000). The banking has followed this trend in recent years, and sometimes called E-Banking referring to all banking transactions now completing through Internet applications (Fugazy 2000).

Electronic banking is defined by Barron’s Dictionary (2006) as a form of banking where funds are transferred through an exchange of electronic signals between financial institutions, rather than an exchange of cash, checks, or other negotiable instruments.Electronic banking has changed the way the banking industry does business by

forcing the industry to consider non-traditional channels of delivering services to customers. No doubt in the future, the banking environment will be more paperless and will overcome traditional barriers of distance and geographic boundaries.

While e-banking has grown rapidly, there is not enough evidence of its acceptance amongst customers. Robinson (2000) reported that half of the people that have tried online banking services will not become active users.

The Kenyan banking industry has been expanding branch networking amid the introduction of branchless banking system, which include the use of EFTs, ATM cards, SMS banking etc. The annual reports of CBK clearly indicate that, branch network has been slowly expanding since 2002. By the end of December 2006, Kenya had a total branch network of 575, as compared to 486 branches in the period ended December 2002.

Banks in Kenya have exponentially embraced the use of information and communication technology both in their service provision and as a strategy to ensure their survival. They have invested huge amounts of money in implementing the self and virtual banking services with the objective of improving the quality of customer service. Some of the ICT-based products and services include the introduction of SMS banking, ATMs, Anywhere banking software's, Core banking solution, Electronic clearing systems and direct debit among others.

The banking industry has also over years continued to introduce a wide range of new products, prompted by increased competition, embracing ICT and enhanced customer needs. As a marketing strategy, the new products offered in this segment of market, continue to assume local development brand names to suit the domestic environment and targeting the larger segment of local customer base. All the above clearly indicate that, Kenya's banking Industry has great developments like any other banking market in the world.

Despite its importance in the economy, e-banking remains largely unexplored, with an exception of a few studies. The objective of this study was to investigate the factors influencing e-banking adoption among commercial banks in Kenya, and the challenges faced by commercial banks in the adoption of E-banking

The definition of e-banking varies amongst researchers partially because electronic banking refers to several types of services through which a bank customer can request information and carry out most retail banking services via computer, television or mobile phone (Daniel 1999; Sathye, 1999). Burr (1996) describes e-banking as an electronic connection between the bank and customer in order to prepare, manage and control financial transactions. On the other hand , Leow, Hock Bee (1999) state that the terms PC banking, online banking, internet banking, telephone banking or mobile banking refer to a number of ways in which customer can access their banks without having to be physically present at the bank branch. E-Banking is therefore a generic term which can be separated into two categories; electronic money products mainly in the form of stored value cards, and electronic delivery channel products. Electronic money products are issued in exchange for cash or deposit or credit. Electronic delivery channel products are arrangements for giving instructions for funds transfers, electronically.

Organizations will continue to invest in IT in the hope that it will improve their business process and increase their productivity. However, for technologies to improve productivity, they must be accepted by intended users (Venkatesh et al., 2003). Venkatesh et al., (2003) note that research in understanding user acceptance of new technology has resulted in several theoretical models with roots in information systems, psychology and sociology.

Theoretical Framework

Daniel (1999) in his study on provision of electronic banking in UK described electronic banking as the provision of banking services to customers through Internet technology.

Other authors (Daniel, 1999; Karjaluoto, 2002a) found out that banks have the choice to offer their banking services through various electronic distribution channels technologies such as Internet technology, video banking technology, telephone banking technology, and WAP technology. The study of Karjaluoto (2002a) further found that Internet technology is the main electronic distribution channel in the banking industry.

Factors affecting customer acceptance and adoption of internet banking have been investigated in many parts of the world (Williamson, 2006, Daniel 1999). On the other

hand, not much has been done on this area concerning electronic banking among commercial banks in Kenya.

Electronic banking acceptance has gained special attention in academic studies during the past five years as, for instance, banking journals have devoted special issues on the topic (e.g. Karjaluoto et al., 2002) There are two fundamental reasons underlying electronic banking development and diffusion. First, banks get notable cost savings by offering electronic banking services. It has been proved that electronic banking channel is the cheapest delivery channel for banking products once established (Sathye, 1999; Robinson, 2000). Second, banks have reduced their branch networks and downsized the number of service staff, which has paved the way to self-service channels as quite many customers felt that branch banking took too much time and effort (Karjaluoto et al., 2003). Therefore, time and cost savings and freedom from place have been found the main reasons underlying electronic banking acceptance

Several studies indicate that online bankers are the most profitable and wealthiest segment to banks (Robinson, 2000, Nyangosi, 2006). Electronic banking thus offers many benefits to banks as well as to customers. However, in global terms the majority of private bankers are still not using electronic banking channel. There exist multiple reasons for this. Foremost, customers need to have an access to the internet in order to utilize the service. Furthermore, new online users need first to learn how to use the service .Secondly, nonusers often complain that electronic banking has no social dimension, i.e. you are not served in the way you are in a face-to-face situation at branch (Mattila et al., 2003). Finally, customers have been afraid of security issues (Sathye, 1999). However, this situation is changing as the electronic banking channel has proven to be safe to use and no misuse has been reported by the media in Finland.

Many factors influence the adoption of electronic banking and it is important to take these factors into account when studying consumer attitudes towards electronic banking. These include:

i. **Effect of perceived ease of use on intention to adopt and use E-Banking.** Consumers will seek out those financial products and suppliers which offer the best value for money and they are educated about it. Hence, for adoption of electronic banking, it is necessary that the banks offering this service make the consumers aware about the availability of such a product and explain how it adds value relative to other products of its own or that of the competitors. An important characteristic for any adoption of innovative service or product is creating awareness among the consumers about the service/product (Sathye, 1999)

ii. **Awareness Of services and its benefits.** The amount of information a customer has about electronic banking and its benefits may have a critical effect on its adoption. Moreover, Sathye (1999) notes that low awareness of Internet Banking is a critical factor in causing customers not to adopt internet banking

iii. **Perceived risk.** Perceptions of risk are a powerful explanatory factor in consumer behavior as individuals appear to be more motivated to avoid mistakes than to maximize purchasing benefits .The construct Perceived Risk reflects an individual's subjective belief about the possible negative consequences of some type of planned action or behavior due to inherent uncertainty.

iv. **Quality of Infrastructure.** Quality of the internet connection is seen to be an essential component of any internet-based application. Sathye (1999) used internet access as one of the factors affecting the adoption of Internet Banking. Without a proper internet connection the use of electronic banking is not possible.

v. **Trust.** Customer attitudes towards electronic banking are driven by trust, which plays an important role in increasing usability within the electronic banking environment. The issue of trust is more important in online as opposed to offline banking because transactions of this nature contain sensitive information and parties involved in the financial transactions are concerned about access to critical files and information transferred via the internet.

vi. D**emographic Characteristics.** Many studies have investigated the effects of customers' demographic characteristics such as age gender, income and educational level on their attitude towards different banking technologies and individual acceptance of new technology. Literature shows that there is a strong relationship between age and the acceptance of new technologies . Older customers tend to have negative attitude towards technology and innovations. On the other hand, younger adults are seen to be more interested in using new technologies, like the internet to conduct activities such as looking for new products and product information to compare and evaluate their options.

Another demographic factor of interest is income. Income has been shown to potentially exert a strong effect on the adoption and diffusion of technology. Older individuals between 26 and 45 are over-represented in categories of higher income, higher occupational positions, and higher educational qualifications (Venkatesh and Morris, 2000). studies have found that there is a difference between the males and females in using various types of technology (Burke, 2002; Li et al., 1999). Venkatesh and Morris (2000) investigated gender differences in the context of individual adoption and sustained usage of technology in the workplace, and found gender an important determinant of short-term usage, and can be used to predict sustained usage behavior in individual adoption and continued usage of technology in work places.

Education also plays a significant role with regards to attitude toward technology use. Higher educated customers such as university graduates are more comfortable in using technology, like the internet or internet banking. A reason for this is that education is often positively correlated with an individual's level of Internet literacy (Burke, 2002).

Research methodology

This study adopted a descriptive survey design which. The study was cross-sectional in nature in that the respondents were only interviewed once. The study population comprised of the 44 commercial banks in Kenya in existence at the time of study. Since the population was relatively small and manageable, it was a census study hence no sampling was done. Information was sought from the managers of the various commercial banks in Kenya. Managers responsible for electronic banking per bank were selected for the data collection.

Data was analyzed using SPSS and presented using frequency tables and charts. The data analysis involved the initial steps of coding, editing and tabulation as a basis for further analysis. The data was then analyzed by use of descriptive statistics such as mean, variance and standard deviation.

DATA ANALYSIS AND PRESENTATION

A total of 300 questionnaires were distributed to the individuals working in the 44 commercial banks identified. Of these 161 questionnaires were successfully completed and returned by respondents from 27 commercial banks, giving a response rate of 54%.The respondents were asked to indicate the number of years their bank had been operation. The results are shown in table 1.

Table 1: Years of Operation

No Of Years In Operation	Frequency	Percentage	cumulative percentage
0- 10	15	56%	56%
11-20	9	33%	89%
Above 20	3	11%	100%
Totals	**27**	**100%**	

The results in table 1 show that 56.0% of the banks had been in operation for less than 10 years, while only 10% have been in operation for 20 years and above. This indicates that majority of the banks have not operated more a decade and their macroeconomic experience in the financial sector is in cycles of three years.

The respondents were asked to indicate the e-banking services that their banks offered. The available e-banking services offered by the various commercial banks are listed in table 2

Table 2: E-Banking Services Offered

E-Banking Services Offered	Frequency	Percentage
SMS Banking/ Mobile Banking	21	78%
Internet Banking	13	48%
Electronic Funds transfer	27	100%

The study found that all the banks utilized EFT as one of the e-banking services to its customers. SMS banking was adopted by 78% while internet banking was being adopted by 48% of the banks.

Respondents were asked to estimate, the proportion utility of e-banking services by their customers as presented in Table 3

Table 3: Customer E-Service Utility

Customer E-Service Utility	Frequency	Percentage	cumulative percentage
Less than 20%	4	15%	15%
21% - 40%	13	48%	63%
41% - 60%	7	27%	90%
61% -80%	2	7%	97%
Over 80%	1	3%	100%
Totals	**27**	100%	

As indicated in table 3, 48% of the respondents indicated an e-banking customer utility level of 21% to 40%, while 27% of the respondents indicated an e-banking customer utility level of 41% to 60%. Only 10 % of the respondents indicated an e-banking customer utility level of more than 60% .This means that customer utility levels of e-banking services is just moderate.

Factors affecting the adoption of E-banking by commercial banks in Kenya

The respondents were asked to rate, on a five-point scale, the extent to which they agreed or disagreed with statements describing why e-banking was not being adopted by their clients. The points ranged from 1 for strongly disagree to 5 for strongly agree. The results are given in Table 4

Table 4: Factors affecting the adoption of E-banking by commercial banks in Kenya

	Statement	Theme	Mean	Std Deviation
1	Security positively influences the perceived ease of use of electronic banking.	Security	4.7431	0.25437
2	Quality of electronic connection and infrastructure has a positive impact on customer's perceived ease of use.	Quality of ICT	4.6634	0.27986
3	Awareness of electronic banking services and its benefits has a positive impact on customer's perceived usefulness.	Awareness programs	4.5673	0.25497
4	Electronic banking adoption has been slow since its introduction in the bank.	Slow Adoption	4.5437	0.22239
5	Customer's attitude towards using electronic banking has a significant impact on his/her intention to use it.	Customer intention drivers	4.1875	0.26987
6	Customer's perceived usefulness has a positive impact on his/her attitudes towards using electronic banking.	Customer attitude	4.1413	0.42333
7	Customer's perceived ease of use has a positive impact on his/her attitude towards using electronic banking.	Ease of usage by customer	4.1191	0.25569
8	Customer's perceived ease of use has a significant impact on his/her perceived usefulness of electronic banking.	Usefulness of e- service to customer	4.1095	0.25415
9	Customer's trust has a positive impact on his/her attitude towards using electronic banking.	Customer Trust	4.0924	0.26392
10	Age has a significant impact on customer's attitude	Age of	4.0923	0.47821

	towards electronic banking. Young customers are more likely to adopt electronic banking.	customer		
11	Income has a significant impact on customer's attitude towards using electronic banking.	Income levels	4.0404	0.48291
12	Education has a positive impact on customer's attitude towards using electronic banking	Level of education	4.0238	0.28349
13	Gender has a significant impact on customer's attitude towards electronic banking. Males are more likely to adopt electronic banking.	Gender	4.0024	0.27396

The mean value of security was (4.7431) and a standard deviation of (0.25437). This indicates that the ICT security is the highest factor affecting the adoption of E-banking by commercial banks in Kenya. Conversely, gender is the lowest factor in consideration with mean of (4.0024). Quality of ICT (4.6634), Awareness programs (4.5673) and slow adoption (4.5437) has high means that show a higher significant influence of the adoption of E-banking in Kenya by commercial banks. Customer driven factors such as customer intention drivers, customer attitude, ease of usage by customer, usefulness of e- service to customer and customer trust respectively in the analysis were also rated highly. Age of customer, income levels and level of education had lower means signifying lesser impact. Income levels, age and customer's perceived usefulness had a significant standard deviation of 0.48291, 0.47821 and 0.42333 respectively indicating that the banks did not consider it as a determining factor in e-banking adoption. The standard deviation for slow e-banking adoption was the lowest indicating that the respondents agreed that e-banking adoption has been slow.

Challenges faced by banks in employing electronic banking as a strategy

The respondents were asked to rate, on a five-point scale, the extent to which they agreed or disagreed with statements describing the challenges faced in implementing ICT related service in the banking main stream, with respect to ICT industry readiness, inadequate regulatory support, Quality of ICT infrastructure and lack of in-house IT professionals. The ratings ranged from 1 (strongly disagree) to 5 (strongly agree). Responses to various statements were collapsed and a composite index (mean score) computed for each function. The results are presented in Tables 5.

Table 5: The challenges faced by banks in employing electronic banking as a strategy

Theme Statement	*Mean*	*Std Deviation*
Inadequate regulatory support	4.13	0.80
Lack of in-house IT professional	3.99	0.96
Quality of ICT infrastructure	3.59	0.78
ICT industry Readiness	3.23	0.78

The results in Table 5 indicate that inadequate regulatory support was rated highest on average with a mean of 4.13 with responses deviating from this mean by a standard margin of 0.80. This is followed closely by lack of in-house IT professional with the mean of 3.99, with standard deviation (STD DEV) of 0.96, Quality of ICT infrastructure (mean = 3.59, STD DEV = 0.78) and ICT industry Readiness (mean = 3.23, STD DEV = 0.78) in that order.

These findings indicate that inadequate regulatory support and lack of in-house IT professional are the greatest challenges facing commercial banks towards the provision of e-banking services. ICT industry readiness was lowest on the scale of effect, although it was still well above the average (mid-point), implying it is a factor imprinting challenges to bank ICT strategy.

When asked what strategies had their banks put in place to respond to the challenges they had discussed, all the respondents stated that they had outsourced IT support. 70% had resulted to advertising so as to create customer awareness so as to change their perception. 60% of the banks had partnered with other players in the telecommunication industry so as to come up with innovative e-banking products and services hence increase the number of e-banking users. One good example given by the respondents is where banks had partnered with mobile operators to offer a money transfer service to their customers.

Summary and Discussion

The study revealed that e-banking is a relatively new banking distribution channel in Kenya and it is at the early stages of growth and development. The study identified critical issues that stood out as being inhibitors to e-banking adoption, among them being security, quality of ICT , awareness programs , slow adoption , customer intention drivers , customer attitude, ease of usage by customer, usefulness of e- service to customer, customer trust , Age of customer, level of education and gender. These findings were all in line with previous studies that were earlier mentioned in this paper with authors like Sathye, (1999). The study revealed that security was the most important attribute that could drive attitudes towards the adoption of e-banking. Quality of infrastructure and awareness of electronic banking services were also a major inhibitor on the adoption of e-banking.

There are also indicators that there are magnificent efforts on the part of the banks to create greater usage of the e- banking, its benefits are also quite crucial for the success of the commercial banks competitive advantage. This was observed on the demographic analysis. Responses indicated that there was a perceived risk element and high cost in electronic banking investment besides other limiting factors identified in the study such as inadequate regulatory support, Lack of in-house IT professional, Quality of ICT infrastructure and ICT industry Readiness.

Recommendations

This study came up with several recommendations which have both policy as well as academic implications. Foremost, it is evident that one major challenge of e-banking adoption is the issue of security. It is perceived that these channels do not provide guaranteed security. It is therefore important that banks constantly improve and upgrade their e-banking system's security. In order to change the perception, the bank will be required to post security provisions on their websites so as to increase confidence and improve trustworthiness of the e-banking systems. In Electronic transactions, which utilize the PIN, the PIN must be recognized by the Court as being key and crucial to such transaction and there must be a method of upholding its validity in a transaction. The issue of digital signatures must also be addressed.

Secondly, the study showed that awareness of electronic banking services and its benefits has a positive impact on customer's perceived usefulness. Banks should therefore continually train their employees who will in turn pass the knowledge to their customers hence the issue of perception is dealt with. Training will help improve confidence as well as improve innovation. By training its employees they will realize the benefits of e-banking services both to them and to their customers hence improve on the adoption of e-banking services.

Thirdly, banks need to carry out marketing research to identify the factors inhibiting e-banking adoption. Very limited research has been carried out in this area. In this regard, banks need to regularly carry out customer surveys so as to understand what their customer's needs are and as they develop their e-banking strategy then they will formulate consumer driven strategies.

Fourthly, banks should seek to collaborate with internet service providers so as to gain high quality internet infrastructure to enable the banks offer better quality services and at the same time enhance internet accessibility.

Finally, this study was based on the challenges commercial banks in Kenya face during e-banking adoption. It is therefore recommended that further study be conducted based on the customer's perspective.

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