# Adoption and effectiveness of electronic banking in Kenya

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## ARTICLE INFO

## ABSTRACT

A global explosion in the use of electronic commerce has been witnessed in recent times with the monetary value of products and services exchanged electronically being estimated at above US$ 7 trillion in the year 2004. Research has followed the same pattern especially in investigating factors influencing the adoption and effectiveness of e-commerce in retail businesses. However, little has been done to establish these factors in electronic banking (e-banking) in developing countries. The aim of this research was to investigate the factors influencing the adoption and effectiveness of e-banking in retail banking. Initial and follow-up surveys were carried out in the years 2005 and 2009, respectively, which involved banks controlling approximately 90% of formal retail banking in Kenya. The follow-up survey was meant to monitor trends between the periods of the two surveys. Results varied across the period.

## 1. Introduction

In recent years profound technological changes among which is the advent of e-commerce or the exchange of products and services and payments through telecommunication systems have been witnessed. Aladwani (2001) identified it as the fastest growing area for businesses. The monetary value of products and services exchanged electronically was projected to be approximately US$ 7 trillion (Sanders 2000) and based on the results of the current survey many respondents felt the estimates may have been surpassed by the close of year 2004.

Most industries have been influenced in different ways by e-commerce (Foxall et al. 2003) and that the banking industry has been subject to this technological change (Bradley and Stewart 2003). It is evident that banks and other financial institutions in developed and emerging markets are embracing e-banking. For example, in Kenya, a recent survey indicates that there is steady increase in use of e-banking technologies such as automated teller machine (ATM), mobile and Internet (online) banking, electronic funds transfer, direct bill payments and credit card (CBK 2008). Fig. 1 shows the trend of ATM banking growth in Kenya over a period of 5 years, between the years 2002 and 2007, as evidenced by the increase in the number of ATMs.

ATM banking is one of the earliest and widely adopted retail e-banking services in Kenya (Nyangosi et al. 2009). However,

according to an annual report by Central Bank of Kenya (CBK), its adoption and usage has been surpassed by mobile banking (M-banking) in the last few years (CBK 2008). Currently, there are about 8 million users of M-banking services compared to 4 million people who hold accounts in conventional financial institutions in Kenya (CBK 2008). The tremendous increase in number of people adopting M-banking has been attributed to ease of use and high number of mobile phone users. This is consistent with the theory of consumer choice and demand as conceptualized in Au and Kauffman (2008) in relation to mobile payments. Based on their observation, customers can choose to adopt a particular banking technology such as M-banking, perceived to offer such advantages as ease of use.

There is also a growing partnership in financial institution and non-financial service providers where consumers through use of e-banking and other e-commerce services such as M-banking can transact and clear utility bills through shared banks' platforms. Fig. 2 shows a sample representation of a functional design of a shared ATM network in Kenya under brand name Kenswitch (Kenya switch). It is a national network of interconnected ATMs, a project owned by a group of banks which was launched in 2002. It had about 14 ATM locations by the end of 2002, which has now grown to about 152 (CBK 2003, 2007).

It had been projected that more than 32 million households globally will bank online by 2003 (Simpson 2002). Banks and other financial institutions have moved to e-banking in their efforts to cut costs while maintaining reliable customer service (Kolodinsky and Hogarth 2001). However, as the industry embraces these new opportunities they have to contend with issues and face challenges that arise in the context of banking risks. As such, an inno-

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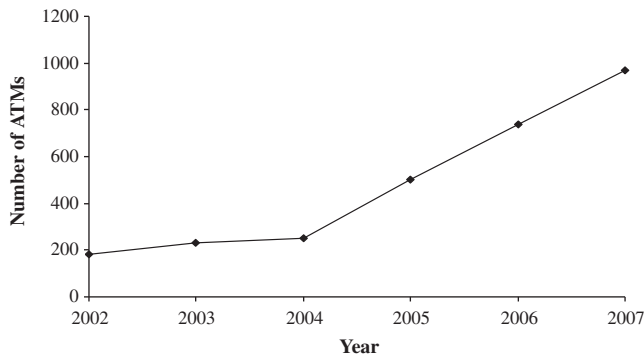E-mail address: joyce.gikandi@pg.canterbury.ac.nz (J.W. Gikandi).

**Fig. 1.** Trend of ATM growth in Kenya over a period.

vative and proactive approach to risk management is vital as banks move into the new territory (Pennathur 2001).

The strategic choice that a bank makes in response to these issues and challenges will determine the future of e-banking and the degree of effectiveness it realises in its context. Results from this study has shown that e-banking is the way forward in reducing costs and remaining competitive in comparison with conventional banking practices. The main question would be how to establish it without severe organisational problems. In Kenya, no study has been carried out to establish the factors influencing the adoption and effectiveness of electronic retail banking. This study was thus designed to identify these factors.

## 2. Materials and methods

A three-stage survey was carried out amongst banks controlling approximately 90% of Kenya's formal banking industry based on data obtained from an annual financial report prepared by CBK (2003).

Initially, a pilot study was carried out to assess the feasibility of the survey. This entailed exploratory interviews with senior banking officials regarding the possibility of obtaining adequate quality data. Based on the information obtained, relevant published literature on e-banking was used in development of a questionnaire which was used in this study. The questionnaire coupled with face-to-face interviews was used to provide reliable data necessary to addressing factors under investigation in the 2005 survey. This multi-method approach was chosen since it facilitates explanation and prediction as well as assisting in developing a more holistic view of the aspects under investigation (Bradley and Stewart 2003). Only the questionnaire was used in data collection in the year 2009. All the banks surveyed are structured such that a central point exists (head office), and a national branch network. The head office acts as the converging point of the branches and is where a bank's major decisions are made. It would be possible to obtain all the information required in this survey from the head offices but to avoid potential systematic bias, the survey treated the head office as a branch in the year 2005 survey. However, only respective banks head offices were surveyed in the 2009 follow-up survey. Furthermore, results obtained from the 2005 survey were similar between the surveyed branches and head office for a particular bank.

The results obtained in the 2009 comparative survey were intended to test the emerging trends following the 2005 survey and hence presented in a section devoted to study implications. Constant change in technologies is another impact factor in e-banking development. Indeed, constant changes in technology have resulted in ceasing operations of some development projects and starting a new project (Aladwani, 2001). The current study has revealed that banks in Kenya have been affected by constant changes and they have always been trying to catch as technology evolves. Additional data were obtained by examining various documents including banks' annual reports, local and international newspapers on issues touching on e-banking specifically and e-commerce in general. Experts in statistics analysis were consulted to ascertain that the questionnaire was adequate in content and structure in answering the targeted concerns and conformity to the statistical package used. Data were analysed and results were interpreted, discussed and reported.

## 3. Results and discussion

Table 1 shows results from data analysis on drivers of e-banking in Kenya. The drivers were ranked in order of importance as deemed by bank management, ranging from 1, which represented least importance to 4 representing drivers of extreme importance.
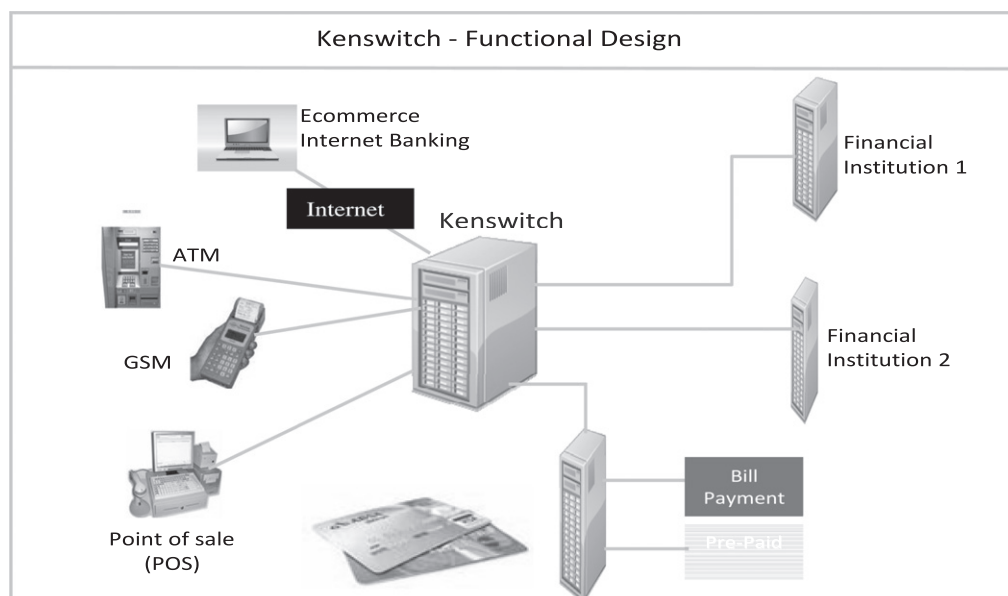


**Fig. 2.** Functional design of a shared ATM in Kenya (adapted from CBK 2007).