INFLUENCE OF REAL TIME GROSS SETTLEMENT ON SERVICE DELIVERY OF COMMERCIAL BANKS IN KENYA

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ABSTRACT

The main purpose of this study was to investigate the effects of real time gross settlement system on service delivery in commercial banks. The study was further guided by the following research objectives to assess the effect of transfer time on service delivery in commercial banks in Kenya. This study employed a descriptive research design. This design was considered ideal simply because the study aimed at investigating various commercial banks. The target population comprised of 11 commercial banks which are listed in the Nairobi Securities Exchange. From these banks, fifty staff members and five managers participated. Simple random sampling procedure was used to arrive at a representative sample. The data collection instruments used in the study included questionnaires for the staff members and interview guide for the managers. Collected data was analyzed both quantitative and qualitative data analysis approaches. From the analysis, the following key findings were made: Majority of the respondents agreed that there are circumstances that arise in bank that affected real time gross settlement system, Slightly over half of the respondents confirmed that timeliness of RTGS had made service delivery in the banks easier. Majority of the respondents indicated that RTGS timeliness led to satisfied customers and therefore better service delivery. The following recommendations were given: The banks should understand the information needs of their customer and effective communication channels should be enhanced in order realize potential benefits of RTGS and to remove the perceived concerns associated with the system.

Key Words: Real Time Gross Settlement; Timeliness; Service delivery; Commercial Banks

Introduction

Historically, interbank payments have been settled via end-of-day netting systems. In a netting system, payments are accumulated over the course of the business day. At the end of the day, all positions are tallied up, and money is exchanged on a net basis between the participants. The volume of interbank payments has increased dramatically over the last 30 years, mainly due to

the rapid financial innovation and the integration and globalization of financial markets. As the volume and value of transactions increased, central banks became worried about settlement risks inherent in netting systems. In particular, central banks were concerned about the potential for contagion or even a systemic event due to the un-wind of the net positions that would result if a participant failed to meet its obligations vis-à-vis the system when due. Consequently, over the last couple of decades, many countries have chosen to modify the settlement procedure employed by their interbank payment system with a view to reduce settlement risks and the potential for a systemic crisis. Most central banks opted for the implementation of a Real Time Gross Settlement (RTGS) system. An RTGS system eliminates the settlement risk from one or more participants failing to make due, as payments are settled irrevocably, with finality, on an individual gross basis and in real time (Morten & Bart, 2006). High-value payment systems are critical infrastructure for financial markets. To mitigate the systemic impact of a participant's default, most high-value payment systems now settle on a real-time gross settlement (RTGS) basis. But while RTGS eliminates credit risk between participants, it requires more liquidity since payments are settled individually. To limit the call on participants' collateral to secure additional intraday liquidity it is important that liquidity is recycled through the system efficiently (Bech, Preisig and Soramäki, 2008).

A growing recognition of the key role played by payments systems in modern economies has lead to increasing interest in the behavior of such systems. RTGS systems prevent systemic risks disruption at the expense of higher liquidity cost, either explicit or implicit. The proliferation of, and rapid advances in, technology-based systems, especially those related to the internet, are leading to fundamental changes in how companies interact with customers (Parasuraman and Zinkhan, 2002; Bauer et al., 2005). This trend is well established in the service industry, where service providers are increasingly urged to invest in technology to better secure their future in the electronic age (Zhang and Prybutok, 2005; Bauer et al., 2005). (Angelini, 1994) develops a model based on a trade-off between the settlement delay costs and the liquidity maintenance cost and derives equilibrium conditions for a bank's optimal decision on borrowing reserves at the central bank and delaying payments. The researcher shows that the individual bank's cost minimization entails externalities owing to which the results of the system deviate from the social optimum. An individual bank may be induced to delay payments at least for two reasons: first, the cost of a delayed payment is paid by the receiving bank and not by the sending bank; and second, the settlement delay cost is not perceived as a cost until the customers' dissatisfaction at the delay impinges on the individual bank's revenue or reputation. These effects imply that, in absence of corrective measures, the effectiveness of RTGS systems for the reduction of risk in financial market transactions, which constitutes their main attraction, may potentially be impaired. When this payment are delayed, the customers are greatly affected and they are dissatisfied with the banks service delivery.The researcher failed to show how the delays will affect service delivery in the banking sector. According to Ongwenyi (2013), the banking industry is in the midst of Information Technology (IT) revolution and in stiff competition with mobile money transfer. RTGS system is yet another IT solution to the major challenges that have

been constraining the industry in terms of security and timelines of making and receiving payments. The study revealed that bank has adopted RTGS in funds transfer with regard to procurement of services, procurement of goods, subscription to the government bonds, foreign remittances for Kenyans in the Diaspora and with regard to purchase of property and assets mainly from the government to a very large extent. The study established that adoption of the RTGS by the banking industry was important in the achievement in fighting for the liberalization and technology revolution. When the bank system fails, the RTGS process cannot take place. The receivers and senders of the payment are greatly inconvenienced by this. Both parties are left disgruntled and unhappy with their banks.

Research Objective

To determine whether the transfer time of RTGS affects service delivery of commercial banks.

Hypothesis

H01: There is no significant relationship between RTGS timeliness and its effectiveness in enhancing service delivery among the commercial banks in Kenya

Literature Review

Timeliness of RTGS system on service delivery

The nature and extent of access to central bank services was identified by Marquardt, (1994) as an important factor influencing the efficiency of the payment system. This analysis concluded that a policy of wide access to central bank services for institutions offering deposit money accounts would promote efficiency. The analysis noted that potential frictions in the correspondent banking system, for example, the bundling of services and resulting restrictions on respondent bank choice in the use of settlement services, and conflicting correspondent bank objectives related to the time value of money that could inhibit the speedy clearing and settlement of payments, argued for broad access to central bank accounts.

The principal goals of the international central banking community in offering RTGS services are to increase safety and efficiency in systemically important payment systems, thereby serving the wider objectives of large-value payment systems across the financial markets and the real economy. The effective functioning, day by day, of every RTGS system depends critically on the adequacy of the liquidity the immediately usable balances on an account with the settlement authority available within the day to each of its members to fund its payment obligations and those of its customers (World Bank Group, 2008).

The CPSS report (2003) on the role of central bank money in payment systems discusses, among other propositions, the ability and the willingness of central banks to extend intra-day credit to

participants in RTGS systems. The Basel Committee on Banking Supervision (2008) establishes the principles for sound liquidity risk management and supervision. Although its mainly concerned with funding risks for individual institutions, the Basel supervisors emphasize in their the importance for each bank to actively manage its intraday liquidity positions and risks to meet its obligations on a timely basis, under both normal and stressed conditions, and thus to contribute to the smooth functioning of payment and settlement systems.

The customary criteria for measuring the efficiency of a payment system, as discussed in (Rambure, 2008), are execution time, risk, and cost. Key factors in the cost calculation for an RTGS participant are the opportunity cost of having to hold on its balance sheet sufficient collateral-quality assets to be able to secure its funding needs from either the central bank or the inter-bank market; and the relationship between the opportunity cost and the rate of interest it receives on its overnight balances with the central bank including its required reserves. In this context, therefore, an "efficient" RTGS system can be regarded as one in which the available liquidity provided by incoming payments is promptly re-circulated among the participants, instead of being hoarded. Each participant is then in a stronger position to minimize it's costly stocks of potential collateral.

McAndrews & Rajan (2000) develop a model based on an intraday pattern of RTGS payments that attributes to strategic interaction. The researcher emphasizes the very high level of payment activity in the late afternoon, right around the time when the DNS payment system settles over RTGS. It is suspected that even payment orders received in the morning are often not executed until this time. This phenomenon plausibly reflects banks' desire to avoid being in a debit position, a motivation that is easy to understand because RTGS prices intraday credit.

An RTGS system essentially eliminates settlement risk by eliminating any delay between the time a payment message is sent and the time it is processed and settled. However, because an institution must have access to enough reserves at the time it wants to make a payment, RTGS systems are potentially much less liquid than DNS systems.

Service delivery

In today increasingly competitive environment, quality service and customer satisfaction are critical to corporate organizations. Delivering high quality service is linked to increased profits, cost savings and corporate image. Customer satisfaction is the route to sustained high performance. Organizations should be aware of the fact that customer dissatisfaction leads to defection and long term losses. Ensuring quality customer service is everybody's business in the organization. However, it is the top management responsibility of creating an environment that fosters customer driven services in a customer oriented organization (Lovelock, 1984).

Ensuring quality service is everybody's business in the organization. However, it is mostly a top management responsibility of creating an environment that fosters customer driven services in a

customer-oriented company. Top management consistently evaluates the importance of being a customer-focused enterprise and putting interest of the customer a head of all other clients of the company's resources. Achieving incredibly good customer service is a direct result of having incredibly good managers (Saleem, 1997).

Service quality can be seen as the extent to which a service meets customer's needs and expectations (Lewis and Mitchell, 1990). Service quality can thus be defined as the difference between customer expectations of service and perceived service. If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs (Parasuraman et al., 1985). Service quality has been recognized as having the potential to deliver strategic benefits, such as improved customer retention rates, whilst also enhancing operational efficiency and profitability (Cronin, 2003).

Banking can be traced back to the year 1694 with the establishment of the bank of England. The bank was started by a few individuals who were actually money lenders with an aim of lending money at interest. Banking in Kenya started in 1896 with the National Bank of India opening its first branch. Standard Chartered Bank opened its first branches in Mombasa and Nairobi in January 1911. The Kenya Commercial Bank was established in 1958 with Grindlays Bank of Britain merging with the National Bank of India. The Cooperative Bank of Kenya was established in 1965 for the express purpose of providing financial services to Co-operative societies. Three years later, National Bank of Kenya (NBK) was incorporated (Ojung'a, 2005).

There is about one Automated Teller Machine (ATM) for every 100,000 people in Kenya according to a paper presented at a South African university by Central Bank of Kenya (CBK) official. Among the more recent delivery channels introduced is electronic banking. In its simplest form, electronic banking means the provision of information about the bank and its products via a page on the internet.

Banks have largely implemented service delivery technology as a way of augmenting the services traditionally provided by bank personnel. Implementation results both from the need to reduce the cost of delivering service primarily through personnel, and, the corresponding need to meet the challenge posed by technologically innovative competitors (Byers & Lederer, 2001). The challenging business environment in the financial service market has also resulted in more pressure on banks to develop and utilize alternative delivery channels, with a view to attracting more customers, improving customers' perceptions, and encouraging loyalty (Bauer et al., 2005).

According to Dabholkar (2003) recent advances in technology have created a surge in technology-based self-service. Such developments are changing the way that service firms and consumers interact, and are raising a host of research and practice issues relating to the delivery of e-service. E-service is becoming increasingly important not only in determining the success or failure of electronic commerce, but also in providing consumers with a superior experience with respect to the interactive flow of information.

(Bitner, 2002) suggest that, customers need to understand what is expected of them, and to perceive benefits from the change in behaviour associated with adoption. Quality models suggest that customer's expectations towards particular services are in a constant state of evolution, and are influenced by the user's number of encounters, and the competitive environment.

Research Methodology

Research Design

The research used a descriptive survey approach. According to Mathooko (2011) descriptive research usually includes surveys and fact finding enquires. Its major focus is on the state of affairs as it exists at present. The researcher has no control over the variables and can only report what has happened or what is happening. This type of design is ideal because the research is looking for the effects brought about by RTGS and how they affect service delivery in commercial banks.

Target population

Mugenda & Mugenda (2003) define a study population as consisting of the total collections of elements about which the study wants to make some inferences. The target population of this study included the staff members and manager at the commercial banks in Kenya. 11 commercial banks listed in the Nairobi Securities Exchange (NSE) were also targeted (NSE, 2013).

Sampling frame

Sampling frame is the source material where the sample size will be drawn from. In Kenya there are eleven listed commercial banks in the Nairobi Securities Exchanges. According to Nairobi Securities Exchange, (2013) register there are 11 commercial banks which are listed in Kenya as listed in. However, from these banks at least 30% of them were selected to form the sample frame of this study.

Sample Size

Denscombe (1998) poised that, the sample must be carefully selected to be representative of the population and the researcher also needs to ensure that the subdivisions entailed in the analysis are accurately catered for. Simple random sampling procedure was used to arrive at a sample size of five (5) commercial banks out of the 11 commercial banks listed in the NSE. This represented at least 30% of the total population. This percentage according to Borg, Gall and Gall (2003) is considered as a representative sample. Moreover, 30% of the total number of staff members in the banks was also selected through simple random sampling procedure. As such, fifty (50) staff members got to participate in the study. The managers in the banks were also purposively picked

to participate in the study. They were considered to being in a position to provide adequate information on the area under study owing to their position in the bank.

Sampling Technique

The two major sampling techniques that were used in this study include the simple random sampling and purposive sampling procedure. The simple random sampling procedure was used in arriving at a representative sample of the staff members. This sampling procedure created an opportunity whereby all the staff members had an equal chance of participating in the study. On the other hand, the managers at the banks were arrived at through purposive sampling procedure. This was due to the fact that they were considered to being in a position of providing adequate and relevant information on the area under study.

Instruments

The researcher used a well-structured self-scoring questionnaire with both open and closed ended questions to collect quantitative data from the staff members. On the other hand, interview guide was used to collect qualitative data from the managers at the selected banks. The first section of the interview guide captured the background information of the managers whereas the other section solicited information on the effects of RTGS on service delivery in commercial banks.

Data Collection procedure

The researcher used both primary data and secondary data. Primary data was collected using self-structured questionnaire and interview guide which was administered to the 50 staff members and the managers in the selected commercial banks. A drop and pick later method was used to collect the data. This enabled a better understanding and provided an insightful interpretation of the results from the study.

Data Processing and Analysis

The data from the field was coded according to the themes researched in the study. Microsoft excel was used to aid in analysis. Quantitative data was analyzed through the use of a combination of descriptive statistics particularly frequency distributions tables, percentage and mean and also measure of dispersion such as variance and standard deviation. The data collected through the questionnaires was keyed in into the computer with the help of software known as Statistical Package for Social Science (SPSS). This enabled the researcher to present the data in frequencies and percentages. On the other hand, the data obtained from the interview guide was analyzed qualitatively. The responses provided were arranged according to the research objectives and presented within the quantitative data in a narrative form.

Research Results

The study sought to establish the effectiveness of RTGS in terms of timeliness and the extent to which it affects service delivery in commercial banks. In order to establish its effectiveness, the respondents were provided with various statements to respond to. These included time taken by banks to transact using RTGS, whether there are circumstances that arise in the bank that affect RTGS timeliness and whether RTGS is affected by other banks' transactions. The respondents were also asked to indicate the extent to which RTGS timeliness affects service delivery in commercial banks.

Timeliness of RTGS

The respondents were asked to indicate the time that RTGS took in transactions. Their answers were varied. On the maximum time it takes for RTGS to be executed in banks, slightly more than half of the respondents (52%) indicated that its takes between 3 to 4 hours; others (24%) indicated that it takes between 1-2 hours and above 4 hours respectively. In supporting this statement, there are a number of studies which have shown the efficiency in timeliness of RTGS systems. For instance, a report by the CPSS (2003) showed that banks used this system due to its convenience in delivering financial services to clients within a day. Additionally, a report by the World Bank Group (2008) showed that the effectiveness of the RTGS functionality based on a day to day perspective depended critically on the adequacy of the liquidity the immediately usable balances on an account with the settlement authority available within the day to each of its members to fund its payment obligations and those of its customers.

The study also sought to establish whether there are circumstances arising in bank that affected real time gross settlement system. On whether there are circumstances that arise in bank that affected real time gross settlement system, majority of the respondents, (64%) agreed with the statement while slightly more than quarter (32%) of them indicated there weren't. This shows that although the system is effective, there are still some circumstances that arise.

Asked whether other banks effected RTGS system effectively, majority of the respondents, (64%) confirmed. However, slightly over a third of them (36%) differed, implying that other banks too did no effect the system effectively.

The Extent to Which RTGS Timeliness Affects Service Delivery in Commercial Banks

This study sought to examine the respondents' view on whether the timeliness of Real Time Gross Settlement System has made service delivery in banks easier. They were provided with various statements and asked to indicate the extent to which they agreed or disagreed. These included: timeliness has made RTGS more common hence improving service delivery in bank and our bank adheres to the time rules set by the Central bank leading to better service delivery.

Slightly over half of the respondents, (52%) confirmed that timeliness of RTGS had made service delivery in the banks easier. This is in line with Rambure (2008) who indicated that RTGS was effective in terms of its service execution time. It is faster as compared to any other system. However, the remaining 48% indicated that the system had not improved service delivery in the banks. This could be attributed to various challenges that might be facing the system.

Regarding whether RTGS helped in services delivery owing to the regulatory environment set by the Central Bank, majority of the respondents (64%) confirmed that it did. In supporting this statement is a report provided by The Basel Committee on Banking Supervision (2008) which established that the RTGS systems were in line with the principles for sound liquidity risk management and supervision. Moreover, the system also minimizes paper work hence promoting tree conservation. However, the remaining 36% did not despite the regulation.

Majority of the respondents (64%) also indicated that RTGS timeliness led to satisfied customers and therefore better service delivery. This is in line with Campbell (1997) who observed that the introduction of RTGS in banks has been able to improve the quality of services provided to customers hence improving their satisfaction. However, the remaining 36% did not think so.

The respondents were also asked to indicate the extent to which RTGS timeliness affected service delivery commercial banks. When the respondents were asked to indicate the extent to which RTGS timeliness affected service delivery by the commercial banks, the majority of them, (68%) indicated that it did affect. Others, (28%) indicated it did not affect service delivery as such. The results clearly showed that RTGS system had a great impact on the service delivery in commercial banks owing to its timeliness.

When the managers were interviewed about the effect of RTGS timeliness on service delivery in commercial banks, they explained that the system had made it quicker to transact, hence customers are happy with the services. One of the managers reported that "the fact that money can be sent from one client to another and money is received the same day, makes the system very attractive to other potential clients" (Manager D, 2014).

However, according to the views of manager C, the system may at times face technical and regulatory issues. As such, some clients who use the system end up rising complains over delays and prefer to use other means of transfer. While RTGS timeliness has a positive impact on services delivery in commercial banks, there are certain unwarranted delays that may be experienced that can be a cause of dissatisfaction among some clients.

Hypothesis testing

H01: There is no significant relationship between RTGS timeliness and its effectiveness in enhancing service delivery among the commercial banks in Kenya.

ANOVA Results for relationship between RTGS timeliness and service delivery in commercial banks.

Table 1: Analysis of Variance (AVOVA)

		Sum of Squares	df	Mean Square	F	Sig.
Timeliness has made RTGS more common hence improving service delivery in my bank	Between Groups	9.819	2	4.910	6.537	.003
	Within Groups	35.301	47	.751		
	Total	45.120	49			

*Sig. 0.05

Since the obtained p value is smaller than the significance level, the null hypothesis is rejected and concluded that there is a significant relationship between RTGS timeliness and its effectiveness in enhancing service delivery among the commercial banks in Kenya.

Discussion

On the maximum time it takes for RTGS to be executed in banks, slightly more than half of the respondents indicated that its takes between 3 to 4 hours. Majority of the respondents agreed with the statement that there are circumstances that arise in bank that affected real time gross settlement system. Slightly over half of the respondents confirmed that timeliness of RTGS had made service delivery in the banks easier. However, the remaining indicated that the system had not improved service delivery in the banks. Majority of the respondents also indicated that RTGS timeliness led to satisfied customers and therefore better service delivery. However, the remaining did not think so. Majority of the staff indicated RTGS timeliness did affect service delivery by the commercial banks whereas a few of them indicated that it didn't. This is in line with Campbell (1997) who observed that the introduction of RTGS in banks has been able to improve the quality of services provided to customers hence improving their satisfaction.

Conclusions

From the analysis and summary of the findings, the following conclusions can be made regarding the effects of real time gross settlement system on service delivery in commercial banks. To begin with, it can be concluded that Real Time Gross settlement system has been able to address on the issues of transfer time of service delivery. However, it's there are certain underlying issues which are making its effectiveness not to be realized in terms of the time used in service delivery in the commercial banks.

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