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Assessment of Factors Influencing Decision to Outsource Information and Communication Technology by Commercial Banks in Kenya

Edward Muchai, M. Commerce
Kenya Revenue Authority, Nairobi, Kenya
edward.muchai@kra.go.ke

Dr. Freddie Acosta
Strathmore Business School, Nairobi, Kenya
facosta@strathmore.edu

Information and communication technology outsourcing is a major part of outsourcing decisions by commercial banks operating in Kenya and has registered a rapid growth recently. The study sought to find out the information systems (IS) functions which were outsourced by the banks and rank the factors influencing IS outsourcing decision according to importance. To achieve this, the study adopted an exploratory study in which all the 45 banks in Kenya were studied. The study used self administered questionnaires to collect data, which was analysed using various analytical tools.

The study established that commercial banks mainly outsource functions such as systems implementation, network services, software and hardware maintenance, and Automated Teller Machine (ATM) services. The study further established that factors such as cost, desire for quality, size of organization, and business strategy, among others, influenced the banks' decisions to outsource IS functions to a large extent. The study established that the small banks had a higher level of IS outsourcing as compared to large and medium banks. This is attributed to lack of technical capacity and need to deliver quality service at a minimal cost. The study revealed that operational costs was ranked as number one driver of outsourcing decision by commercial banks operating in Kenya followed by the desire for quality and organizational size respectively. The study concluded that though cost was the main driver of outsourcing decision, there existed other factors which were equally important such as desire for quality and business strategy among others.

*Keywords***:** Outsourcing, ICT, Commercial Banks

INTRODUCTION

Background

There has been a rapid growth in outsourcing globally particularly in the management of Information Systems (IS) (Suhaimi, Husnayati & Muzzafar, 2007). Outsourcing has dramatically increased especially during the 1990s and has attracted much attention (Schniederjans & Cao, 2006). This increase may be attributed to the fact that many organizations have found it difficult to develop, control, and maintain IS functions in-house for varied reasons. Such organizations have tended to transfer their IS functions to specialized third-party vendors. The transfer enables these organizations to focus on their core business. It is this process of delegation of one or more business processes to an external service provider that is known as outsourcing.

The external service provider manages the selected processes based on defined and measurable performance metrics (Brown & Stone, 2004). Sengupta & Zviran (1997) defined outsourcing as the transfer of the management and/or day-to-day execution of an entire business function to an external service provider. IS outsourcing is the sub-contracting of part of or all of a company's IS function to one or more external vendors (Loh & Venkatraman, 1992). Loh and Venkatraman (1992) further defined outsourcing as the significant contribution that external vendors provide in physical and/or human resources associated with the entire or specific components of the IS infrastructure in the user organization.

The scope of outsourcing can range from selective outsourcing where critical IS activities are retained in-house to total outsourcing where a firm transfers all the IS assets, leases, staff, and management to third parties (Tafti, 2005). The extent of outsourcing also takes many forms ranging from contractor-like relationships, which are short-term outsourcing contracts, to long-term partnership/strategic alliances (Federal Reserve Bank of New York, 1999).

IS outsourcing is important to many organizations for different reasons. Some companies seek to outsource for tactical reasons while others it is for strategic reasons (Mui, 2003). Many organizations tend to separate the support functions from the core activities of their businesses. They find it more effective and efficient to focus on the business' core competencies and to outsource the support tasks to a highly specialized third party vendor. The question this study sought to establish was what exactly influences the decision to outsource information technology by the commercial banks in Kenya.

Due to the benefits associated with outsourcing, IS outsourcing has exploded in recent years as more and more companies recognise these benefits. Gartner Group cited in Gonzalez, Gasco, & Llopis (2005) has estimated global IS outsourcing market to be over US$253 billion in 2008. This trend is set to continue. Cullen et al. (2001) have estimated that organizations in developed countries are spending an average of 30% of their IS budgets on outsourcing.

Lacity and Willcocks (2001) attributed the growth of IS outsourcing market to two main phenomena. The first one is the need to change business strategy where organization leaders realise that in order to achieve sustainable competitive advantage, it is necessary to focus on core competencies while outsourcing non-core functions. Second, there is a perception that IS internal department is a cost burden that should be reduced and whose value is unclear. The growth of outsourcing has also been attributed to expected benefits, improved strategic focus, and structural change generally hyped by IS service providers, press releases, or publications.

According to Dibbern, Goles, Hirschheim, & Jayatilaka (2004), this growth in outsourcing arises due to the fact that most of the data and information needed to carry out business tasks is now available digitally and the majority of the processing is done with the aid of specialised software packages augmented by increased automated routines. Dibbern Goles, Hirschheim,

& Jayatilaka, (2004) also attributed the growth to the increasing acceptance of the Internet as a means of communication. Many organizations are looking toward outsourcing as standard management tool that can help them achieve many strategic objectives.

Lacity and Willcocks (2001) have noted that the most advanced outsourcing nations are USA, United Kingdom, and Australia. These are followed closely by the Western European countries, South America, and Japan. The rest of the world, including Africa, has been lagging far behind. In Kenya, the Information and Communication Technology (ICT) sector has seen phenomenal growth in recent years (Onsongo, 2009) and the Ministry of Information and Communication, in its ICT Strategy Paper of 2006, noted that Kenya is emerging as one of Africa's forerunners in the development of Information Technology and, with the exception of South Africa, has one of the fastest growing Internet sectors in Africa.

According to the paper, there is significant rise in outsourcing activities in most services sectors including banking, accounting, communications, manufacturing, and transportation in Kenya. This growth is expected to continue especially with the phenomenal growth on mobile telephony experienced in the country. The Minister of Information and Communication has estimated that by 2012, the Business Process Outsourcing sector in Kenya will generate a Gross Domestic Product of about KES 100 billion and employ 37,500 people (Senelwa, 2010). It is however noted that despite this growth and characteristic of many developing countries, there is little documented information on IS outsourcing and little regulatory guideline on the same in Kenya (Barako & Gatere, 2008).

The Banking Sector in Kenya

A bank can be defined as a company, which carries on, or proposes to carry on banking business (Kenyan Banking Act, 1995). Banking in Kenya started with British colonialist and few Indian traders towards the end of the 19th century. The first bank to start in Kenya was the National Bank of India which was re-named Kenya Commercial Bank in 1896, followed by the Standard Bank in 1910. The banking sector has been changing steadily in many areas such as asset base, target customers, marketing strategies, competitive strategies, information technology, and their role in the economy. Up to the 1980s, regulation in the financial services was mainly based on restriction of both the range of products that a bank could offer and the nature and volume of contracts in the geographical area in which the services could be offered. The banking sector was liberalized in 1995.

The liberalization brought about many changes, which have impacted the banking business both positively and negatively. One major positive change is the lifting of foreign exchange control. The reforms also increased the intensity of competition among banks (Oloo, 2007). As a result, organizations are made to change their ways of doing business so often and almost constantly in some environments in order to remain competitive.

According to the Banking Survey Report of 2009 (Oloo, 2009), five players—Kenya Commercial Bank, Barclays Bank, Standard Chartered, Cooperative Bank, and CFC Stanbic Bank—are the main players in the market, controlling 34% of the total customer deposits and with 52% of the total assets in the banking sector in Kenya. But other players are coming up and staking their claim to the cake. Most notable among them are Equity Bank whose market share of total assets has grown from 1.15% in 2005 to 6.49% in 2008 and Diamond Trust Bank whose market share rose from 2.53% to 4.62% in the same period. Overall, the banking sector in Kenya has grown from an asset base of KES 548 billion in the year 1999 to KES 1.2 trillion in 2008. Over the same period, customer deposits have increased from KES 290 billion to KES 900 billion (Oloo, 2009).

It is also worth noting that mobile banking has become a way of banking in Kenya as more and

more Kenyans acquire mobile telephone services. The Central Bank of Kenya has estimated the value of M-Pesa (Mobile banking services by Safaricom Mobile Telephone Company) transactions at KES 26.99 billion in December 2008 up from KES 0.06 billion in March 2007 (Oloo, 2009). The total number of transactions rose from 0.02 million to 10.21 million over the same period.

The significant rise in use of mobile telephony is expected to continue and has made banks keen to use the mobile bank services in an effort to bank those who have no formal banking services in Kenya. Studies done by Finaccess (2001), have noted that only about 19% of Kenyans are banked (have formal access to financial services through commercial banks). A further 8% are served by Savings and Credit Cooperatives (SACCOs), Rotating Savings and Credit Associations (ROSCAs) and Accumulating Savings and Credit Associations (ASCAs). Thirty-eight percent of Kenyans are financially excluded (have no access to financial services). This exclusion is both for the poor and a large segment of non-poor . The Government of Kenya, through the Central Bank of Kenya, is keen to increase the access to financial services and mobile banking is expected to play a big role.

Problem Definition

Outsourcing is a common practice among both private and public organizations and has become a major element in business strategy (Downing, Field, & Ritzman, 2003). Perhaps most organizations now outsource some of the functions they used to perform themselves. Goldsmith (2003) found that 79% of companies surveyed outsourced IS processes and that IS processes were outsourced three times as much as any other functional area within the firms surveyed.

It is noted that the front-runners of IS outsourcing were the commercial banks in the developed countries (Schniederjans & Cao, 2006). Dickerson (2004), Soliman and Chen (2003) have noted that the banking industry tended to rush to outsource without adequately investigating their practices and technological abilities, which has resulted in the banks spending a lot of money for low quality services with detrimental results. Cullen, Seddon, and Willcocks (2005) concurred and noted that the success of IS outsourcing has been mixed. Hirschheim and Lacity (2000) found that a large number of IS outsourcing contracts were being re-negotiated or terminated. Failure rates for banks and the outsourcing industry as a whole have been reported as high as 50% (Hall, 2003). Yet, despite the high failure rate, banks world over seem to be driven to continue in IS outsourcing.

Berger (2003) noted that the banks have been found to be the most IS intensive industry globally. Deutsch Bank Research (2004) and the Basel Committee (2005) have noted that more and more IT processes are being outsourced by German banks and the world over. In Kenya, Barako and Gatere (2008) noted that banks have increasingly been engaging in outsourcing and with the government of Kenya keen to develop Kenya into a global outsourcing destination, outsourcing is expected to increase in the future (Kenya Vision 2030 policy paper (2007).

Outsourcing of IS is dependent on availability of a well developed ICT sector. Chinn and Fairlie (2006) noted that the use of IT in developing countries differs markedly from the developed countries with the developing countries having low levels of computer technology use which they attributed to factors like low income, telephone density, legal quality, and human capital. They noted that in 2004, Kenya Internet users were about 4.63 out of every 100 persons. The world average is 13.65 while the one for developed countries is 51.83. Fong (2009) concurred that there exists a big digital divide not only between developing and developed countries but also within regions in a given country.

Barako and Gatere (2008) has also noted that in Kenya there is no regulation guiding outsourcing. Ndifet (2004) in his study of outsourcing in Cameroun noted that IS outsourcing in developing countries may be viewed as risky as there are virtually no regulations guiding outsourcing.

IS outsourcing have well been researched in the context of developed countries. However, only a few studies were found which reported on practices of IS outsourcing in developing countries (Kim & Park, 2003; Khalfan, 2003; Suhaimi et al., 2007). In Kenya, as in other developing nations, there are few studies on outsourcing in financial institutions and even these have mainly dwelt on human resources and general outsourcing activities.

The fact that the banking industry has extensive experience in IS outsourcing makes them good candidates for a study in outsourcing (Schniederjans & Cao, 2006). The increase in outsourcing in the background of significant failure rate in IS outsourcing, a relatively less developed ICT sector and lack of regulatory framework in developing countries like Kenya are the main reasons that motivate this research paper. It suggested that owing to these factors, Kenya and other developing countries may have a different outsourcing experience from the developed countries. These factors and the limited literature on IT outsourcing in developing countries suggest that there exists a gap which this research seeks to fill.

The research seeks to identify the IS functions that have been outsourced by Kenyan banks and determine the factors that influence the outsourcing decision. In particular, the research seeks to establish how size, cost, and business strategy influences the outsourcing decision.

Research Objectives

1. To identify the Information Systems functions which have been outsourced by banks operating in Kenya.
2. To find out whether cost of operation influenced the decision to outsource IS functions by the commercial banks in Kenya.
3. To determine the extent to which business strategy influence the decision to outsource IS functions by the commercial banks in Kenya.
4. To establish whether organizational size influenced commercial banks decision to outsource.
5. To rank the factors influencing the decision to outsource Information Systems functions according to importance.

Research Hypothesis

H_1o: Cost of operation is an important factor influencing decision to outsource IS functions.

H_1A: Cost of operation is not an important factor in the decision to outsource IS functions.

H_2o: The decision to outsource IS functions by banks is influenced by business strategies.

H_2A: The decision to outsource IS functions by banks are not influenced business strategies.

H_3o: Bank size determines the level of IS outsourcing by Commercial Banks in Kenya.

H_3A: Bank size does not influence the level of IS outsourcing by Commercial Banks in Kenya

LITERATURE REVIEW

The concept of Information Systems Outsourcing

The idea of outsourcing has its roots in the theory competitive advantage which was propagated by Adam Smith (1776) in his book *The Wealth of Nations*. He argued that a firm should specialize in producing products in which it has a competitive advantage and should leave other tasks to other firms that also have competitive advantages in them.

Although the term IS outsourcing appeared in the 1990s (Tayntor, 2001), externally contracted computer services is nothing new. Shared-time services, for example, were a common practice in firms during the 1960s and 1970s (Ketler &

Walstrom, 1993). In the past, outsourcing was relegated to non-information intensive sectors where the IS could not play a central role in terms of firm competitiveness. Nowadays, it is possible to find outsourcing agreements in high-information-context sectors (Lonsdale & Cox, 2000). Moreover, while small firms frequently outsource their IT functions seeking to obtain capacities that are internally unavailable or impossible at present, large firms with mature IS departments have also been found to outsource (Grover et al., 1994; Teng, Cheon, & Grover, 1995).

IS outsourcing has experienced a considerable growth in recent years, so much so that some authors suggest we find ourselves in outsourcing era (King, 2001). Judging by the forecast figures by some computer market analysts, this growth also seems to be guaranteed at least in the near future (The Yankee Group, 2003).

IS Functions Outsourced

The IS activities outsourced include hardware maintenance, programming, software maintenance, application analysis, user training, system implementation, network service, end-user support, system security, and system operation (Claver, Gonzalez, Gasco & Llopis 2002). A bank would typically have three Information Systems functions, namely the management, the development, and the maintenance of IS systems (Kasim, 2003).

The choice of the activities to outsource is often determined by the strategic value of the activity and its level of operational performance (Federal Reserve Bank of New York, 1999). Suhaimi et al., (2007) pointed out that maintenance of hardware systems could be easily outsourced unlike business specific applications while it is not advisable to outsource gateways to the bank's network is crucial as they safeguard the bank's security.

Mcfarlan and Nolan (1995) have also pointed that outsourcing offers a way for organizations to gain relevant skills without getting involved in complex management issues that they are not skilled to manage. A company cannot control what it does not understand. Claver et al. (2002) noted that the most outsourced IS services were hardware maintenance, programming, software maintenance, and user training.

Transaction cost theory and outsourcing

The theory was initiated by Williamson (1985) as an analytical tool for explaining economic problems where asset specifity (the extent an asset e.g. specialised software can be re-deployed) play the key role. It facilitates an analysis of the comparative costs of planning, adapting, and monitoring tasks completion under alternative governance structures (Williamson, 1985). The theory uses transaction as the unit of analysis and divides transaction costs into production and co-ordination costs. According to the theory, transaction costs arise at contracting (drafting, negotiating, and safeguarding) or at implementation (mal-adaptation, haggling, and establishment, operational and bonding costs). Decision makers must weigh and compare the costs associated with executing a transaction within their firms (in-sourcing) and outsourcing.

Williamson (1975) identified two human factors and three environmental factors that lead to transaction costs arising. According to him, human beings are faced with bounded rationality. They do not have the ability to consider every contingent outcome associated with a transaction. They are also likely to act to further their own self interest. These factors introduce uncertainty (and therefore risk) in the transaction engagement. The theory further proposes that managers need to consider both production and coordination cost (cost of monitoring, controlling, and managing transactions) in arriving at the outsourcing decision (Williamson, 1975).

In their study of outsourcing in the light of the transaction cost theory, Claver et al (2002) found that the theory is a good basis against which to check the reasons for IS outsourcing. A study by Loh and Venkatraman (1992) of large US

industrial and service corporations also found that rationalization of cost is a key factor of remaining competitive consistent with the transaction cost theory. Claver et al. (2002) also shares the same view observing that the IS service vendor can lower transaction costs for clients by distributing fixed costs among a greater number of end clients.

The theory has also generated criticism from many researchers. Costa (2001) found the theory assumption that companies make their outsourcing decision based on economic rationale to be a narrow view of a complex process. Other than transaction cost, outsourcing may be driven by other factors including the top management's scepticism about the values of IS (Lacity & Hirschheim, 1993), the uncertainty that surrounds IS making it difficult to anticipate whether a specific technology will or will not prove profitable (Loh & Venkatraman, 1992), and the fashion effect (Lacity & Hirschheim, 1993; Udo, 2000). While the theory argues that efficiency is the key to organizational success, other factors may be important according to Ghoshal and Moran (1996). These include the ability to learn, innovate, and introduce new products.

Gottschalk & Saether (2005) and Davis & Divenney (1997) have also argued that whenever an activity requires specific assets transaction costs, costs of monitoring and enforcing the outsourcing contract are likely to be high and hence outsourcing would be deemed to be inefficient. Yet organizations continue to outsource.

A study by Lacity and Willcocks (1995) observed that out of 40 IT outsourcing cases that have failed, the transaction theory could only explain five cases. They concluded that the theory offered poor explanation to IT outsourcing decisions. Their conclusion has however been challenged by subsequent researchers. Aubert and Weber (2001) has observed that Lacity and Willcocks did not have a valid measure of a critical dimension of the theory namely assets specifity. Aubert and Weber (2001) also argued that Lacity and Willcocks did not consider the effects of uncertainty, which according to the theory affect the outsourcing decision and concluded that the theory is one of the few coherent bases that managers can use to make the outsourcing decision.

This demonstrates that researchers have different finding about the transaction cost theory. This study adopts the transaction cost theory to investigate whether transaction cost influences the decision to outsource information systems by the commercial banks in Kenya.

Resource Based Theory and Outsourcing

This theory was developed by Barney J. B. in 1991 and is based on the factors that enable a firm to gain competitive advantage. The theory argues that firms earn sustained competitive advantage because they have access to strategic resources. These resources have four characteristics. They are rare (competitors can't obtain them), valuable (generate high returns), cannot be imitated, and have no close substitute. When these conditions are met, competitive advantage has been created (Priem & Burtler, 2001).

According to the theory, firms will tend to retain in-house those activities that take advantage of their strategic resources as outsourcing them would deprive the organization's competitive advantage (Aubert & Weber, 2001). They will tend to outsource resources that are non-strategic. Griesinger (1990) concurred and stated that management must own those operations that define a company's core business processes; other functional areas that are not core should be considered potential candidates for outsourcing.

Mata Fuerst and Barney (1995) are some of the proponents of the theory and observe that some companies appear to earn sustained abnormal returns arising from access to key resources. Gottschalk & Saether (2005) noted that the essence of the theory lies in its emphasis on internal resources rather than on external opportunities and threats dictated by industrial conditions. They further argued that accumulation of strategic resources are dependent on factors like initial endowment and managerial decisions and these will determine what is retained in-house

and what is outsourced. Outsourcing is a strategic decision used by firms to fill the gap in the firm's resources and capabilities (Grover, Cheon, & Teng, 1996).

Aubert and Weber (2001) found that the Resource Based Theory helped classify up to 72.5% of outsourcing decisions. However, researchers like Sanchez (2008) have questioned the measure of "strategic value of a resource" used in theory and the lack of an operational definition of the same. Stalk, Evans, & Shulman (1992) have also argued that an organisation has to get the right mix of resources and actions to be competitive. They cited Wal-Mart supermarket chain, which continues to earn above average profits yet their product, technology, layout, and strategy is freely available to its competitors. Grover, Cheon, and Teng. (1998) also noted that firms develop firm-specific resources and then review this to respond to shifts in the business environment.

This study seeks to find whether and how banks employ IS outsourcing as a strategic resource to remain competitive.

Factors Influencing Decision to Outsource by Organizations

Different researchers have classified the reasons for outsourcing in varied ways. Hiemstra and van Tilburg (1993) distinguished two forms of outsourcing, namely capacity outsourcing and non capacity outsourcing. According to them, capacity outsourcing arises when internal production facilities become temporarily insufficient due perhaps to seasonal demand swings. Non capacity outsourcing concerns the outsourcing of activities which are no longer pursued by the organization itself. Hiemstra and van Tilburg (1993) indicated four motives for outsourcing: cost, capital, knowledge, and capacity. Chris Fill, Elke & Visser, (2000)added that the motive for outsourcing is to ensure "less sorrow," which indicates that outsourcing is led by strategic consideration to concentrate on core business activities.

Winkleman Dole, Pinkard and Molloy, (1993) classified outsourcing according to the drivers and notes that there are two basic drivers behind the growth of outsourcing. These include cost reduction and strategic shift in the way organizations are managing their businesses. Gupta and Gupta (1992) argued that there are further two more drivers to outsourcing, which they described as market forces and technical consideration.

According to Fill (2000), cost efficiency remains the primary explanation for the development of outsourcing. He argued that organizations evaluate outsourcing to determine if current operating costs can be reduced as well as facilitate access new resources such as technical expertise. But Welch and Nayak (1992) argued that while cost is always important in any business decision, managers should consider strategic and technological issues in conjunction with the decision.

This study adopts both cost and strategy as the main drivers to outsourcing.

Strategic Reasons for Outsourcing

In their study of how business is transformed through outsourcing, Linder, Cole, & Jacobson (2002) have noted that companies use outsourcing to gain access to competitive skills, improve service levels, and increase their ability to respond to changing business needs. In intensely competitive environments, many companies see outsourcing as a way to hire the "best in class" companies to perform routine business functions, which enables them to focus corporate resources on key activities in their value chain where the impact will be felt the most by customers (Leavy, 2004). Grover and Teng (1993) termed outsourcing as the driving force that enables management to surrender control of company's IS functions to external service providers, and focus on its core business. It (outsourcing) enables the maximisation of returns on internal resources by concentrating investments and energies on what the enterprise does best (Barnes, 2005) and organizations can therefore react quickly to customer requirements (Kremic, Tukel, &

Rom, 2006). By concentrating on core business, companies are able to concentrate on meeting customer needs instead of trying to keep up with the fast changing IT trends and technologies (Mui, 2003).

Leavy (2004) observed that with outsourcing, businesses are able to reposition strategically. They are able to create new segments at prices below the current market and then dominate the market as they grow. This is done through an innovative business model which produces returns as good as the competitors at a significantly lower cost through higher asset productivity. Mui (2003) concurred, observing that outsourcing leads to accelerated business development and could cut the time-to-market. Another benefit of outsourcing is scaling. It offers companies the opportunity to grow in market presence without the corresponding expansion in organizational size or bureaucracy (Leavy, 2004). He noted that the prospect of being able to scale up without pro-rata increase in organizational mass and complexity is an attractive reason to consider outsourcing at any stage in a company's development not just a start-up. This also helps to save on costs associated with organizational structure growth.

Researchers have also argued that outsourcing enables organizations to gain access to superior technology. Outsourcing promises organizations superior technical know-how and access to strategic business advice, which leads to efficient processes and better performance (Willcocks, Hindle, Feeny, & Lacity, 2004). Efficiency is attributed to exploitation of economies of scale, specialization, and tactical focus by the third party service providers (Federal Reserve Bank of New York, 1999; Mui, 2003). Palvia (1995) observed that outsourcing leads to access to leading-edge technology and a firm can enjoy the latest technology without the lead time that is customarily required for in-house development. Barnes (2005) concurred that perhaps the greatest leverage of all is the full utilisation of external suppliers' investments, innovations, and specialised capabilities that it would be prohibitively expensive or even impossible to duplicate internally. Outsourcing enables companies to share risks as the service providers makes the investment in technology on behalf of many service providers (Mui, 2003).

Researchers, however, noted that management time is still consumed in the monitoring and managing the resultant outsourcing relationships. Fowler and Jeffs (1998) noted that in practice, a lot of management time is taken in the controlling of the outsourcing contracts. This not only increases operational cost but costs management in time. Tafti (2005) observed that as a greater percentage of IT responsibilities are outsourced, there is a proportional increase in the burden for the customer to monitor the vendor's performance. To avoid excessive management supervision, the Federal Reserve Bank of New York (1999) observed that the outsourcing contracts needs to clearly articulate the structure of the outsourcing arrangement and the expectations of each side. Detailed contracts also help in dispute resolution.

Outsourcing may also limit a company's access to new technology. Tafti (2005) observed that when new technologies become available, a firm may find itself unable to take advantage of them because the contract agreement with service providers may not permit accessibility or does not specifically mention them. Service providers who do not find benefits in the adoption of new technologies may become reluctant to adopt them, in an attempt to make the service they offer as profitable as possible (Palvia, 1995). Gonzalez Gasco and Llopis (2005) noted that service providers hardly ever take the initiative when it comes to business strategies and they prefer to follow specific instructions from clients instead. This is further compounded by lack of knowledge about the client's long-term business strategy, hence, opportunities are compromised. Lacity and Willcocks (1995) observed that IT evolves so fast that the degree of uncertainty accompanying every outsourcing decision is very high and companies must make informed decisions to remain competitive.

In their study of information systems outsourcing by large firms in Spain, Gonzalez,

Gasco and Llopis (2005) noted that one of the main obstacle to outsourcing is the excessive dependence on the service provider. Outsourcing shifts power from the firms to the service providers leaving the outsourcing firms at the mercy of service providers (Kakabadse & Kakabadse, 2000). The Federal Reserve Bank of New York (1999) noted that as management's focus shifts from direct to indirect control over an activity, there is risk that undue reliance may be placed upon the service provider by the financial institution. Underperformance by the service provider would affect the firm's operations and strategy negatively; yet, in most contracts, no changes can be made to the IT functions of the outsourcing firm without the cooperation and participation of the service provider (Wright, 2004). The needs of the client may also not be properly met, arising from inadequate task priority established by the service provider (Martinsons, 1993; Fowler & Jeffs, 1998). This further compounds the dependency as the outsourcing firms are left at the mercy of the service providers.

Moreover, the practice may lead to loss of understanding of the service and skills overtime. The client loses control over the IT or business process destiny as knowledge assessment develops in favour of the vendor (Cullen & Willcocks, 2003). Any new knowledge remains with the IS service provider and the outsourcing firms will not learn about them while client companies learn very little (Willcocks et al., 2004).

The Federal Reserve Bank of New York (1999) and Wright (2004) also argued that in IS outsourcing, there are risks of third parties or competitors' access to confidential data, strategic technology applications, and books and records of the bank client. The risk of stealing proprietary information by the service providers is made easy as information is more easily codified, as the world heads towards borderless transactions and information communication technology (Suhaimi et al, 2007). Confidentiality therefore becomes a major issue especially where firms have engaged global vendors as there are legal and ethical issues arising from diverse governmental regulations and cultural differences (Tafti, 2005).

IT outsourcing service contracts are very hard to exit hence a mistake in outsourcing has long-term consequences. It is expensive to reverse the decision because of high costs involved in reconstructing the IS department, the difficulty to attract the necessary staff, and the amount of time required (Clark, Zmud & McCray 1995). A research by Deutsch Bank (2004) found that banks face a strategic decision in trying to shed parts of their IT resources as these are hardly reversible. If the outsourcing firm chooses to end the relationship, it would have to face a service provider who has a lot of power in the exit negotiations arising from the expert knowledge of the outsourcing firm's IS functions (Wright, 2004). The Federal Reserve Bank of New York (1999) noted that because of the customised nature of the service contracts, changing service providers in the face of unsatisfactory responsiveness may not be a viable option even where alternatives are available as such a switch adds to operational, legal, and other risks.

Despite the limitations noted above, it is found that banks are increasingly outsourcing their IS services. This study seeks to find the motivation if face of these limitations.

McFarlan Strategic Grid Model and IS Outsourcing

The grid was developed by McFarlan, McKenney, & Pyburn in 1983 and looks at the role of IS in a company. They noted that IS does not have the same importance for each company. According to the grid, the amount and kind of talent needed in the IS department is determined by where management sees the company in the grid. The grid's four quadrants are built around two questions:

- How important is the current IS systems to the company?
- How important is the future developments in IS for the company?

The strategic grid model analyses the applicability of IS as a strategic weapon and its impact in the present and future business operations.

In the Support quadrant, the impact of IS is low and not critical currently and is expected to remain so in future. The businesses operating in this quadrant use the systems for administration and to improve internal operational efficiency. These systems may be outsourced to access better technologies and for higher professionalism (McFarlan & McKenney, 1992).

In the Factory quadrant, IS is critical for current operations and reliable information systems are required for administrative and process management. However, it is not a critical factor for future strategic development and business success. Outsourcing may be considered to cut costs for medium sized and small firms, higher quality service, and system security (McFarlan & McKenney, 1992).

The systems in the Turnaround quadrant may be critical to the enterprise's future survival or growth. Although IS has a low impact currently, the enterprises believe that the systems feature prominently in the future of their businesses. There is however uncertainty as to the capabilities. They are businesses reaction to expected future competition. Outsourcing in this quadrant may not be encouraged but may be done for lack of internal capacity (McFarlan & McKenney, 1992).

Enterprises operating in the Strategic quadrant have IS as very critical to their current operations and future success of the business. IS plays a critical role in the present and the future and operations are not possible without the use of advanced information systems. The products and services tend to be computer based. Outsourcing may not be attractive as IS is core to the operations and competitive edge of the enterprise (McFarlan & McKenney, 1992).

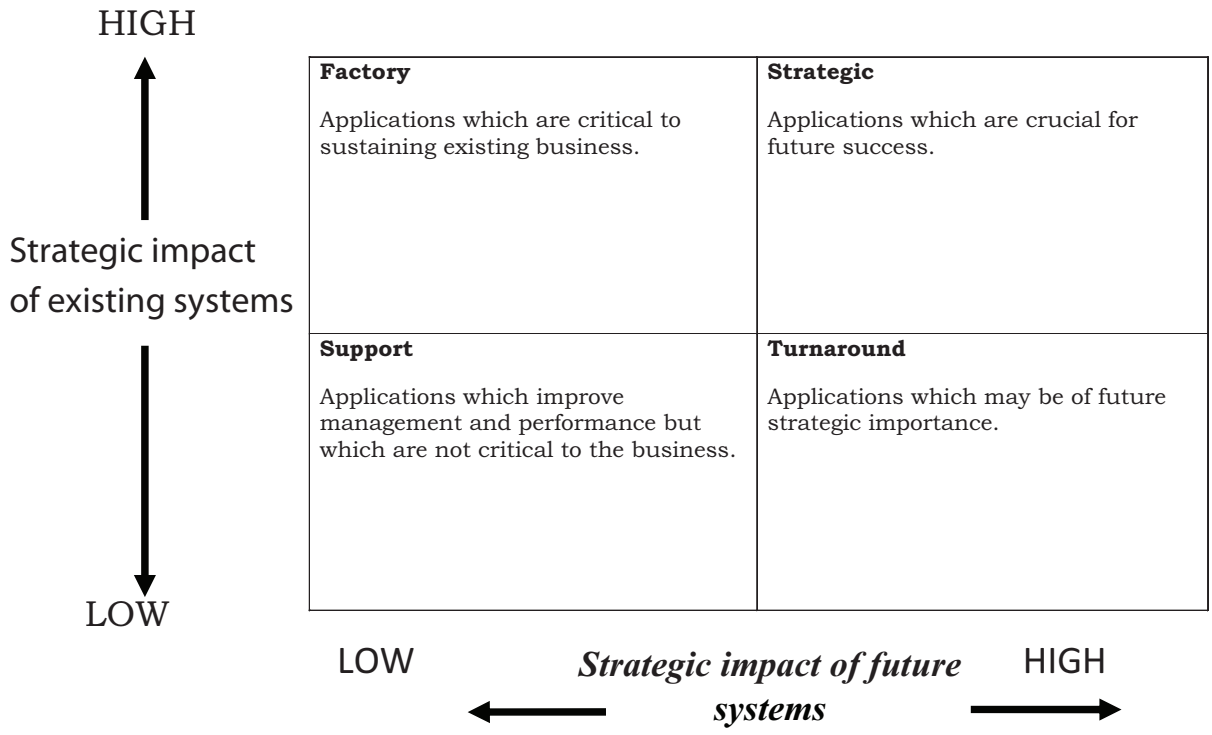

Figure 1. IT Strategic Grid (McFarlan & McKenney, 1992, p. 9)

Cost and IS Outsourcing

Kakabadse and Kakabadse (2000), Claver et al (2002), and Dibbern, Hirschheim and Jayatilaka (2004) have observed that IS outsourcing is more efficient than in-sourcing because it leads to lower production costs. This is attributed to specialization and economies of scale enjoyed from distributing fixed assets among a great number of clients. Lacity and Willcocks (1998) and Hirschheim and Lacity (2000) also noted that external vendors produce a higher quantity of the same output arising from economies of scale enjoyed from consolidation of many clients. They noted that the economies arise from specialization of workforce, learning curve effects, and diminished fixed assets. Gewald, wullenweber and Weitzel (2006) further argued that the service providers are able to share assets required to produce different outputs. This effect reduces the investment required to carry out outsourced activities thereby reducing the related fixed costs.

According to Ching, Holsapple and Whinston (1996), outsourcing makes it possible to reduce the IS department's size and transform fixed costs into variable costs. This transformation helps to accommodate fluctuations in labour and equipment needs. The transformation of costs also leads to flexibility as clients are charged for use as opposed to a fixed charging system (Clark et al., 1995). It also enables outsourcing firms to avoid the requirements of huge capital expenditures in procurement of assets as the expenditures are converted into periodic payments for services (Mui, 2003).

Outsourcing also helps to direct limited financial and human resources from the outsourced non-core activities to core activities (Federal Reserve Bank of New York, 1999). Fewer employees require less infrastructure and support systems, which is not only cost effective but results in a nimble and more efficient organisation (Kremic, Tukel, & Rom 2006). The cost savings from outsourcing can be significant. In their study of public organizations in Australia, Domberger and Fernandez (1999) noted that outsourcing saved an average of 46% of costs in certain areas.

However, although organizations may outsource for cost related reasons, there are no guarantees that expected cost savings will be realised. Gewald, Wullenweber & Weitzel (2006) observed that an analysis of the risk facets shows that financial risk is by far the most important risk factor, indicating deep uncertainty regarding the pricing mechanism of an outsourcing engagement. Gonzalez et al (2005) and Kremic et al (2006) also noted that although one of the main theoretical objectives of outsourcing is to controls IS costs or make them variable, outsourcing may have hidden costs and the variables involved and their relationships are complex. Gillet (1994) and Kakabadse and Kakabadse (2000) concurred that in addition to not realising the cost savings that originally drove the outsourcing initiative, there are also some additional indirect and social costs. These include contract monitoring and oversight, contract generation, procurement intangibles, and transition costs. Social costs may be significant although difficult to quantify (Kakabadse & Kakabadse, 2000). Barnes (2005) has observed that a study in Germany found that the costs of IS provision were frequently much lower internally than in outsourced locations. The effects of outsourcing on an organizational cost may therefore not be well understood at the time of contracting.

Another concern in IS outsourcing is that it is hard to clearly define the information services to be outsourced at the time of engagement and organizations may find themselves paying exorbitant fees for services provided by the IT vendor beyond the initial agreement (Tafti, 2005). Additional services end up being charged at additional rate thereby adding to the total cost over time (Fowler & Jeffs, 1998). Lacity and Hirschheim (1993) argued that external service providers are not strategic partners and interest in profit is not shared. As the customer's IS costs increase, the service provider's profits also increase and it is therefore in the interest of the service provider that the customer's costs increase.

In developing countries, Ndifet, (2004) noted that bankers do not make outsourcing decisions based only on the merits of costs alone. He, in particular, noted that in Sub-Saharan Africa, government regulation or lack of it influences business decisions in general, and outsourcing decisions by commercial bank are no exception. He noted that banks in these countries are over-regulated and decisions made have to take cognisance of government regulations.

The risks noted in outsourcing here are significant. Yet outsourcing has been demonstrated to be on the increase. This study establishes the extent to which costs have influenced IS outsourcing as perceived by the respondents.

The Influence of Organizational Size on Outsourcing Decision

Size of a company portends many attributes such as business complexities and geographical dispersions (Barako & Gatere, 2008). Ono and Stango (2005) argued that firm size is an important factor in outsourcing as it affects the scale at which a firm produces internally if it chooses not to outsource. They also noted that large firms benefit from outsourcing as they have economies of scale that favor such practices. This is especially so for functions with relatively high fixed costs. Borzekowski (2004) has also arrived at the same conclusion in his study of credit unions.

It is also noted that large firms may have more bargaining power with IS vendors. This renders them more likely to enter relationships with suppliers particularly if they make up a significant fraction of a given supplier's business (Besanko, Dranove, & Shanly, 1996). Ono and Stango (2005) also found that large credit unions with greater number of products in-sourced their data processing. They pointed that this relationship was consistent with the transaction cost based explanation whereby complex data processing created a difficult contracting environment, thereby increasing costs and thereby encouraging in-house production.

However, Schniederjans and Cao (2006) in his study of perception differences in outsourcing noted that size had an indirect (inverse) relationship with outsourcing. He noted that as outsourcing increases, the perception of goal achievement decreases significantly. Small firms outsource to take advantage of economies of scale enjoyed by the IS service providers (Ono & Stango, 2005), which they cannot achieve internally. Economies of scale are widely held to influence firms' outsourcing decisions, particularly for functions that have relatively high fixed costs. Many technology-based functions, such as data processing, fall into this category because they impose significant fixed hardware, software development, and training costs (Ono & Stango, 2005).

Despite the fact that outsourcing information systems decision in most organizations is associated with cost reduction and achieving strategic goals of the organization, that is, profitability (Basel Committee, 2005), this research posits that size is a moderating factor which plays a significant role in the outsourcing decision. The study investigates the extent to which bank size has influenced the decision to outsource IS functions.

Conceptual Framework

In making the outsourcing decision, management considers the cost of transaction and the strategy that they want to adopt in their business. The decision is also influenced by the size of the organisation.

Justification for Study

Research has shown that there has been a tremendous increase in IS outsourcing by commercial banks in the last decade (Suhaimi et al., 2007). In line with the global trend, Kenya has seen a significant rise in IS outsourcing activities in the banking sector and the increase is expected to speed up as the Kenyan Government continues to promote outsourcing as a source of employment in Kenya (Vision 2030).

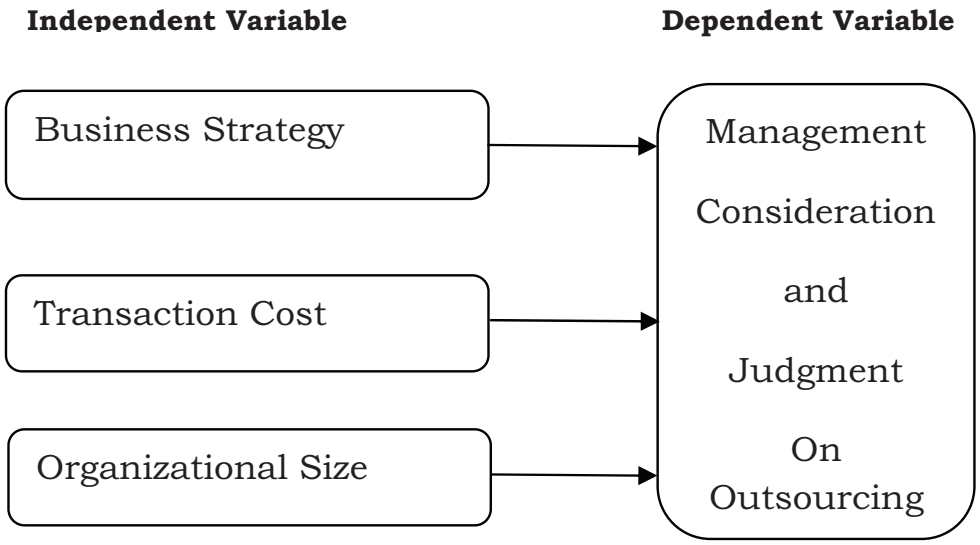

Figure 2. IT Strategic Grid (McFarlan & McKenney, 1992, p. 9)

Banks have also been accused of rushing to use outsourcers without adequately investigating their practices and technological abilities which have seen them spend a lot of money for low quality work (Suhaimi et al., 2007). This failure has brought about a high failure rate in the outsourcing industry with reports indicting some rates as high as 50% (Schniederjans & Cao, 2006).

It is the paradox of increase in outsourcing and its significant failure that motivates this research paper. Even though outsourcing studies have been done in other areas of outsourcing, and are of general benefit to the body of knowledge, the researchers did not find any published study paper on IS outsourcing in Kenya.

This study makes a contribution to the body of knowledge and helps the banking sector and other sectors as they strive to outsource their services. It is also important for the government as it seeks to promote Kenya as a global outsourcing destination.

The study targeted the banks operating in Kenya which comprise of the 45 banking institutions (Central Bank of Kenya, 2008). The study was restricted to Information Systems outsourcing in the banks only.

RESEARCH METHODOLOGY

Research Design

The study was exploratory study in view of limited studies in outsourcing IS functions in Kenya. The purpose of exploratory research is to describe the state of affairs as it is at present (Kothari, 1990). It provides data about the population being studied; it is used when the objective is to provide a systematic description that is as factual and accurate as possible. The research design enables the researchers to find out the relationship between variables of interest. The variables in this study are factors influencing outsourcing decision, which are the independent variables, business strategy, transaction cost, economies of scale determined by the size of the bank, and dependent variable outsourcing of IS functions.

Population and Sampling

This study was a cross sectional survey of all banks operating in Kenya in 2008. There were 45 banks registered in the period according to the Central Bank of Kenya. The number of banks

was deemed manageable and therefore a census study was carried out. The whole population was targeted for more complete information and due to the small number of banks in Kenya. The study targeted the IS managers of the commercial banks in Headquarters in Nairobi as they are the people in charge of IT decision making in their respective institutions and are therefore in a position to provide the right information needed for the study. According to the Central Bank of Kenya (2008), banks are categorized into three categories namely, large, medium, and small depending on their asset base. The small banks are those with asset base below KES 5 billion while medium banks are those that have asset base of above KES 5 billion but less than KES 15 billion. The large banks are those with asset bases of above KES 15 billion. Fourteen of the banks were categorized as large, 17 as medium, and 14 as small.

Response Rate

Out of the 45 commercial banks that were studied, 26 responded by completing and returning the questionnaires. The study results presented in Table 1 show that of the 26 commercial banks that participated in the study, eight (31%) were small banks, while 12 (46%) were considered medium sized. The results further show that six large banks participated in the study. The data obtained was analysed using the Statistical Package for Social Sciences (SPSS 16.0) software.

From the table above the response rate of respondents is 58%. The researchers deemed the response rate adequate and sufficient for the study's data analysis.

General Information

Profile by length of operation. Majority (80%) of the banks have been in operation for more than eight years. A further 12% have been operating between 6-8 years. The rest (8%) have been in the market for less than five years.

Size of IT department. The study sought to establish the size of IT departments in terms of number of employees. According to the result of the study as shown in Table 3, 88% of the

Table 1

Survey of Responses by Bank Size

Firm Size	Total Assets (KES Billions)	Number of Participating Banks	Percentage of Total participating banks	Number of Banks in the category
Large	15 and above	8	31	14
Medium	5 to 15	12	46	17
Small	Below 5	6	23	14
Total		26	100	45

Table 2

Profile by length of operation

	TOTAL	
BASE	**26**	**100%**
0-2yrs	1	4%
3-5 yrs	1	4%
6-8 yrs	3	12%
More than 8 yrs	21	80%

Table 3

Profile by Size of IT Department

	Frequency	Percent
1 - 25 Employees	23	88
25 - 50 Employees	1	4
50 - 100 Employees	2	8
100 - 150 Employees	0	0
Total	26	100

respondent institutions had IT department with less than 25 employees. The table shows that there were only two institutions with between 50 and 100 employees.

Data Collection

We used questionnaire for all the respondents. Exploratory research data are usually collected using questionnaires (Gay, 1996). Questionnaire studies are generally much less expensive and they do not consume a lot of time in their administration (Wiersma, 1985). The fact that the respondents are busy, the questionnaires are deemed convenient as respondents can complete them at their own time. Briefness in a questionnaire also encourages higher response rate and also provides an opportunity for anonymity to promote high and honest response rate (Mui, 2003). Questionnaires also reduce bias as they consist of uniform questions and respondent is not influenced in answering the questions. They are a fairly familiar technique and it is expected that the targeted respondents have had an experience in completing questionnaires.

The response choices are nominal while the closed questions are on an interval scale. The nominal questions that require the respondents to answer either Yes (to agree) or No (to disagree) have no preferential. The interval scale was measured on a 5-point Likert scale ranging from very high, high, medium, low, to very low.

Prior to collection of the actual data, pilot-testing was done to test the accuracy of instruments in terms of language and meaning and to test whether the respondents understood the questions in order to remove any ambiguity. Improvement was effected before finally giving out the questionnaires.

Due to the fact that respondents had busy schedules, drop and pick methods were used to administer the questionnaires and respondents had a period of two weeks to respond. To increase the response rate, follow up calls were made where necessary.

Data Analysis

The data collected was first edited then code numbers assigned to each answer of the question to generate a coding list or frame which was then fed into a computer software SPSS. The data was then analysed using descriptive statistics such as mean scores, frequencies, and measures of dispersion including variance and standard deviation. In addition, to further determine the relationship between factors influencing outsourcing IT functions (Independent) and the decision to outsource (dependent), the study used linear regression analysis. Given the dichotomous attribute of the dependent variable, linear regression is suitable over other regression techniques such as the Ordinary Least Square (OLS) and the Probit regression (Madalla, 2001).

Linear regression model.

Equation 3.1 $$OUTS(0,1) = \beta_0 + \beta_1 STRATEGY + \beta_2 COST + \beta_3 SIZE + ei$$

Where:

OUTS (0,1)	Is the dependent variable, 1 is for outsourcing bank and 0 otherwise.
β_0	Is the constant
Strategy	Business strategy
Cost	Is the cost of operation
Size	is measured as the total assets of a bank as at December 2008
ei	Is the residual error

Chi-square analysis. To test the relationship between the variables and the decision to outsource, the Chi-square test of independence was computed on each of the variables influencing outsourcing IS services and the relationship was considered significant for P value between 0.0000 and 0.0500 level of confidence. Each of the independent variable was tested independently.

Firm size can be measured in various ways—asset base, number of employees, number of branch networks, and value added. This study used the asset base of the banks to measure size according to the classification Central Bank of Kenya (2008). According to the Central Bank document, there are 14 large banks, 17 medium size banks, and 14 small banks.

DATA ANALYSIS AND PRESENTATION

Introduction

In this chapter an analysis of the responses to the questionnaire is presented. This is done in two parts. Part one presents general information about the banks. In part two, an analysis of IS functions outsourced by banks and factors perceived by IS managers to influence IS outsourcing decision in commercial banks is analysed and the findings presented.

Information Systems Functions that have been Outsourced by Banks

In this section the study sought to establish IS functions that were being outsourced by the commercial banks in Kenya. The results of the study are presented in sections below.

Bank outsource IS activities to third party. Respondents were asked to indicate whether their financial institutions had some of their IS activities carried out by a third party service provider. The findings of the study established that 96% of the banks had some of their IS activities carried out by a third party service providers. This is presented in Figure 3 below.

IS activities carried out by third party service providers. Respondents were then asked to list the IS activities that were carried out by the third parties. The findings of the study show that all the listed IS activities were outsourced. Ninety-six percent of the respondents said that they had outsourced hardware maintenance, 81% had outsourced software maintenance, 77% of respondents had outsourced systems implementation, and 69% had outsourced ATMs. Only 23% outsourced systems operations, 31% for e-business solution, and 35% for end-user support and system security.

Level of outsourcing by bank size. The study further sought to establish the extent to which the IS activities were outsourced. Respondents were therefore asked to state the percentage to which the activities were carried out by the third provider. The results of the study indicate that ATM services were the most outsourced at 96%, followed by hardware maintenance and network maintenance at 76% and 72% respectively. The least outsourced services were E-business solutions and user support at 32% and 36% respectively. The results also indicate that small banks have outsourced 78% of their IS functions, while large and medium banks outsourced 58% and 49% of their functions respectively (See Table 5).

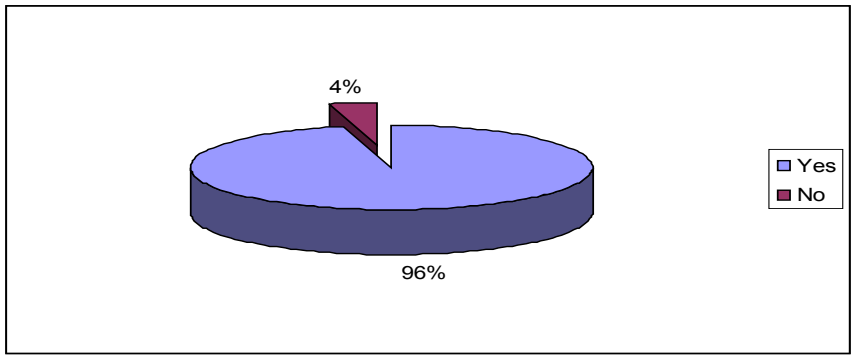

Figure 3. Percentage of banks that have outsourced IS services

Table 4

Activities carried out by third party

Activity outsourced	TOTAL	
	No of respondents	% of Responding Banks
Base	26	100%
Hardware Maintenance	25	96%
Software maintenance	21	81%
System Implementation	20	77%
Automatic teller machines	18	69%
Net work service	16	62%
Programming	12	46%
User Training	10	38%
Support of end users	9	35%
System Security	9	35%
E-business solution	8	31%
System operation	6	23%

Table 5

Percentage of Activities Outsourced

	TOTAL		Large		Small		Medium	
	No. of Banks	% Outsourced	No. of Banks	% Outsourced	No. of Banks	% Outsourced	No. of Banks	% \ Outsourced
BASE	25	100%	11	100%	5	100%	9	100%
Hardware Maintenance	25	76%	11	76%	5	76%	9	76%
Software maintenance	21	64%	9	62%	5	76%	7	59%
System Implementation	20	60%	10	68%	5	75%	5	42%
Automatic teller machines	18	96%	8	99%	3	83%	7	97%
Net work service	16	72%	5	51%	5	90%	6	75%
Programming	12	48%	3	27%	4	80%	5	56%
User Training	10	56%	5	64%	4	78%	1	16%
Support of end users	9	36%	4	32%	4	71%	1	10%
System Security	9	64%	3	48%	3	64%	3	59%
E-business solution	8	32%	4	36%	4	80%	0	0%
System operation	6	44%	2	33%	4	59%	0	0%
Average Level		**62%**		**58%**		**78%**		**49%**

Areas where banks are considering outsourcing more IS *functions*. Respondents agreed that the bank they work for had considered further outsourcing some aspects of IT. The most popular activity considered for outsourcing was user training mentioned by 85% of the respondents. Hardware and software maintenance are a concern for outsourcing for both small and large banks (15% and 12%). System security (12%) was also mentioned by both small and medium banks. A further 12% of the respondents, mostly from Large and medium sized banks, mentioned E-business solution and data storage, among others. Small banks were also willing to outsource a substantial part of their hardware maintenance and system security.

***Level of* satisfaction with services delivered.** Respondents were asked to indicate the level of satisfaction with service delivered by third party service providers. This was on a score of very high, high, neutral, low, and very low. The score very high represents very high level of satisfaction with the services and has been taken to be equivalent to mean score of 4.1 to 5.0 on the Likert scale. The scores high represent high satisfaction with service delivery and is equivalent to a mean score of 3.1 to 4.0. The scores neutral represent moderate satisfaction and taken to be equivalent to mean score of 2.1 to 3.0. The low scores represent low level satisfaction and taken to be equivalent to mean score of 1.1 to 2.0. And the scores very low have been taken to represent no satisfaction at all and to be equivalent to mean score of 0.1 to 1.0. A standard deviation of more than 1 implies a significant difference in the respondents' response.

The results of the analysis are presented in Table 7. According to the results of the study, the respondents indicated moderate levels of satisfaction with the services provided as the mean score ranged between 2.1 to 2.9, except for user support whose mean score was 1.8 (low level of satisfaction). There were no significant differences in the respondents' responses except in the user training whose standard deviation was 1.1.

Table 6

Expected areas of further IS outsourcing

		Size of the bank		
	Total	**Large**	**Small**	**Medium**
	%	%	%	%
Base	26	11	5	10
User Training	85%	82%	60%	90%
Hardware Maintenance	15%	18%	40%	-
System Security	12%	-	40%	10%
Software maintenance	12%	18%	20%	-
E-business solution	12%	9%	-	20%
Data Storage	12%	9%	-	20%
System Implementation	8%	9%	20%	-
Net work service	8%	9%	20%	-
Support of end users	4%	9%	-	-
System operation	4%	-	-	10%
Automatic teller machines	4%	-	-	10%
Consultancy	4%	-	20%	-

Table 7

Level of satisfaction with services delivered

	N	Mean	Std. Error	Std. Deviation	Rating
System application development	26	2.1	0.1	0.3	Moderate
System implementation	19	2.2	0.1	0.5	Moderate
User training	15	2.6	0.3	1.1	Moderate
Data center management	12	2.4	0.2	0.7	Moderate
System operations	13	2.7	0.2	0.9	Moderate
System security	12	2.9	0.2	0.7	Moderate
Network maintenance	15	2.6	0.2	0.8	Moderate
Software maintenance	17	2.5	0.2	0.8	Moderate
Hardware maintenance	20	2.6	0.2	0.7	Moderate
E-Business solution	22	2.6	0.2	0.9	Moderate
Automatic teller machine	25	2.1	0.1	0.4	Moderate
User support	21	1.8	0.1	0.4	Low
Average	18	2.4	0.2	0.7	

Cancellation of outsourcing contracts with third party in the last year. Eight percent of the respondents had cancelled their contracts with their outsourcing suppliers. However, majority of the respondents (92%) had not. Poor service delivery and increased costs are some of the reasons given for the cancellation of the contracts.

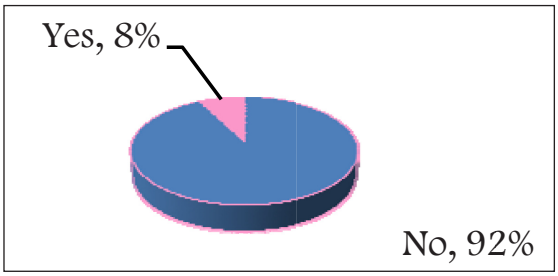

Figure 4. Whether cancelled a contract with a third party.

Factors Influencing the Decision to Outsource

In this section the study sought to establish the factors that influenced the banks decisions to outsource IS functions. The results of the study are presented in the subsections that follow.

***Extent to which* factors i*nfluence IS* outsourcing d*ecision*.** The study sought to establish the factors had influenced the bank's decision to outsource. The respondents indicated that the factors that lead to the outsourcing decision include:

- Need to contain operational cost,
- Desire for high quality service,
- Business strategy,
- Lack of qualified personnel,
- Increased flexibility, and
- Specialised services/need for expertise.

The respondents were also required to indicate the level to which these factors influenced the decision. The results (Figure 5) indicate that 36% of the respondents indicated that high operational costs influenced the decision to outsource IS to a very large extent followed by desire for quality at 16%. The respondents also indicated that desire for quality service and operational costs influenced the bank's decision to outsource IS functions to a large extent (56% and 40% respectively). Other factors which influenced the decision to a large extent included lack of qualified IS personnel, and the size of the banks, at 32% and 28% respectively.

Ranking **of factors influencing outsourcing according to importance.** In this section the study sought to establish how various factors perceived to influence the decision to outsource IS functions ranked. According to the results in Table 8, operational cost was the main driver of outsourcing of IS functions by commercial banks as it ranks number one (96%) in terms of importance. The study established that the desire for quality was ranked second (64%) while the need for expertise influenced by the size of the banks was ranked third as most important factor.

Regression Analysis

In this section the study presents the linear regression results to show the relationship between the factors influencing decision to outsource and the level of outsourcing IS functions by the banks. The results are presented below.

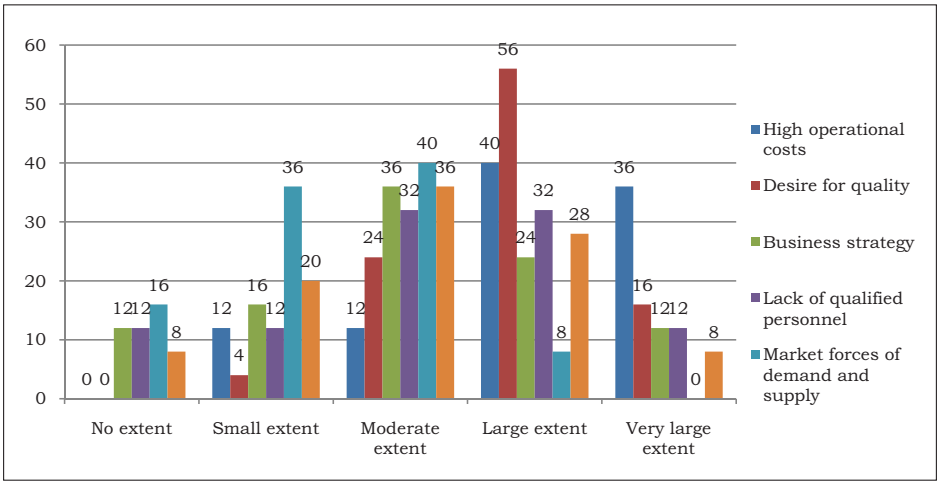

Figure 5. Extent to which factors influence IS outsourcing decision.

Table 8

Ranking of Factors Influencing Outsourcing According to Importance

Factors Influencing Outsourcing Decision	Important	Rank
High operational costs	96%	1
Desire for quality	64%	2
Need for expertise due size of the bank	60%	3
Business strategy	56%	4
Lack of Technical Capacity (personnel)	44%	5
Flexibility to market forces of demand and supply	24%	6

Table 9

Model Summary – Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.775(a)	.600	.560	10.012

Predictors: (Constant), Expansion (size), High operational costs, Market forces of demand and supply, Desire for quality, Technical capacity (personnel), Business strategy

Table 10

Regression Coefficients

	Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.169	.274		4.265	.000
	Operational costs	.142	.268	.142	.529	.003
	Desire for quality	.126	.114	.813	1.103	.024
	Business strategy	.219	.157	1.380	1.398	.018
	Lack of technical capacity (personnel)	-.051	.114	-.398	-.448	.009
	Flexibility Market forces	-.002	.076	-.018	-.030	.007
	Expansion (size)	.033	.076	.239	.430	.002

The results of the study indicate that the value of R squared is 0.600; this implies that about 60% of the variation in commercial banks decision to outsource IS functions data is explained by organizations operational costs, its desire for quality, business strategy, technological capacity, the market forces, and the size of the organization. The regression equation appears useful for making predictions since the value of r^2 explains a significant portion (60%) of the outsourcing decision.

With all the p-values less than 0.05, all the variables are statistically significant. The results of the regression analysis show that variables such as operational costs, desire for quality, business strategy, and organizational size have a positive relationship with the decision to outsource IS functions. This indicates that these factors positively influence the bank's decision to outsource IS functions. The study results on the other hand show that beta coefficients of technical capacity (personnel) and market forces of demand and supply were negative. This is an indication that although these factors influence the bank's decision to outsource, the relationship is negative.

The regression equation can be represented as:

Equation 4.1

$$Y = 1.169 + 0.142\alpha + 0.126\beta + 0.219\mu - 0.051\pi - 0.002\Omega + 0.033\theta$$

Where Y = Decision to outsource IS functions
α = Operations costs
$\boldsymbol{\beta}$ = Desire for quality
$\boldsymbol{\mu}$ = **Business strategy**
$\boldsymbol{\pi}$ = Technical capacity (personnel)
Ω = Market forces of demand and supply
$\boldsymbol{\theta}$ = **Organizational size**

Hypothesis Testing

In this section the study presents the results of the tested hypotheses in which the researchers used the chi-square to test the relationships between the decision to outsource and the variables.

In the first hypothesis the study sought to establish the relationship between operational cost and decision to outsource. The results are presented in Table 11 below.

The results indicate that there is a statistically significant relationship between organizations operational costs and decision to outsource IS functions (chi-square with 4 degree of freedom

= 0.383, p = 0.121). We therefore accept the null hypothesis that states that Cost of operation is an important factor in the decision to outsource IS functions.

These results indicate that there is statistically significant relationship between business strategy and decision to outsource IS functions by organizations (chi-square with 3 degrees of freedom = 7.973, p = 0.047). We therefore accept the null hypothesis that decision by organizations to outsource IS functions is influenced by business strategies.

dideht hand es 'action'the vertical linesThe study results show that there is statistically significant relationship between organizational size and decision to outsource IS functions (chi-square with 4 degree of freedom = 9.326, p = 0.156). We therefore accept the null hypothesis that bank size determines the level of IS outsourcing by commercial banks in Kenya.

Table 11.

Chi-Square Tests on Operational Cost and Outsourcing Decision

H_1o: Cost of operation is an important factor influencing decision to outsource IS functions

H_1A: Cost of operation is not an important factor in the decision to outsource IS functions
Significance level: α=0.05

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.383(a)	4	.001
Likelihood Ratio	.642	4	.210
Linear-by-Linear Association	.288	1	.007
N of Valid Cases	26		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.04.

Table 12

Chi-Square Tests on Business Strategy and Outsourcing Decision

H_2o: The decision to outsource IS functions by banks is influenced by business strategies

H_2A: The decision to outsource IS functions by banks are not influenced by business strategies.
Significance level: α=0.05

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.973(a)	3	.047
Likelihood Ratio	4.658	3	.009
Linear-by-Linear Association	.000	1	.000
N of Valid Cases	26		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 21.12.

Table 13

Chi-Square Tests on Bank size and Outsourcing Decision

H_3o: The decision to outsource IS functions by banks is influenced by size.

H_3A: The decision to outsource IS functions by banks is not influenced by size.
Significance level: α=0.05

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	52.000[a]	4	.000
Likelihood Ratio	54.521	4	.000
Linear-by-Linear Association	1.377	1	.241
N of Valid Cases	26		

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

Introduction

This chapter discusses the main findings and conclusions based on research conducted in this project. The purpose of these conclusions is to address the research objectives. Each of the research objectives was addressed in separate sections. Finally, recommendations for management, limitations of the study, and suggestion for future study are presented.

The aim of this study has been to determine factors influencing information systems outsourcing by commercial banks in Kenya with emphasis on cost strategy and size of the banks. The study also sought to rank the factors identified in order of importance.

Discussion

Information systems functions outsourced by Kenyan banks. The study established that up to 96% of the respondent banks outsourced some of their ICT activities. The average level of IS outsourcing is 62% for all banks. This is consistent with the findings of Ndifet (2004) that IS outsourcing is a major area of outsourcing by commercial banks and almost all the IS functions are outsourced to the external service provider. Schniederjans and Cao (2006) has stated that the banking industry is a leading industry in IS outsourcing. All the banks also noted that they are looking forward to outsource more of their IS functions. This is consistent with the observation by Deutsch Bank Research (2004) and the Basel Committee (2005) that more and more IT processes are being outsourced by banks and the world over. Most banks stated that they looked forward to outsource user training and hardware and software maintenance and data storage.

Hardware maintenance, software maintenance, and system implementation were the functions outsourced by most banks at 96%, 81%, and 77% of the respondents respectively. The level of outsourcing for these functions was 76% for hardware maintenance, 64% for software maintenance, and 60% for system implementation. These findings are consistent with the observation by Claver et al. (2002) that hardware and software maintenance are among the most outsourced IS functions. It is noted that small banks have the highest level of outsourcing for these services owing to lack of capacity. This supports Mcfarlan and Nolan's (1995) observation that outsourcing offers a way for organizations to gain relevant skills without getting involved in complex management issues that they are not skilled to manage.

ATM maintenance services had the highest level of outsourcing at 96% according to the 18

banks that had outsourced the service. Network maintenance also registered a high level of outsourcing at 72%, which ranks third after ATM maintenance and hardware maintenance. The outsourcing of network maintenance is against Suhaimi et al (2007) advise that it is not advisable to outsource gateways because the bank's network is crucial as they safeguard the bank's security.

The least outsourced services were e-business solutions and systems operations. These functions are at the core of the banking business hence are retained in-house. These findings support similar research findings by Claver et al (2002), Linder Cole and & Jacobson, (2002), Leavy, (2004), and Grover and Teng, (1993) who stated that banks are likely to retain core functions in-house while outsourcing non-core functions.

Factors influencing decision to outsource. The study ranked the factors that motivated banks to outsource their IS functions. Operation cost was ranked the most important factor in outsourcing (96% of respondents), followed by the desire for quality service (64% of the respondents). The study results further established that in terms of importance, the organizational size was ranked third followed by business strategy, need for technical capacity, and need for increased flexibility.

A linear regression done on the factors that lead to outsourcing shows that cost contributes significantly to the outsourcing decision. This supports the transaction cost theory (Williamson, 1975; 1985) wherein transaction cost plays a key role in making the outsourcing decision. The bank, keen to reduce the cost of transactions to remain competitive, have outsourced IS services seeking to lower their operation costs. Lower operation costs are achieved where the external service provider achieves economies of scale from distributing fixed costs to a large number of clients (Kakabadse & Kakabadse, 2000; Dibbern et al, 2004; Lacity & Willcocks, 1998; Hirschheim & Lacity, 2000). Outsourcing banks will also reduce costs from transforming fixed costs to variable costs consistent with the observations by Clark et al. (1995). These findings were consistent with the argument by Ndifet (2004) and Fill (2000) that cost is the main driver for outsourcing in any organization.

It is worth noting that although banks outsourced to lower their operation costs, those banks that had cancelled outsourcing contracts indicated that increased costs was one of the reasons for the cancellation. This gives credence to the observations by Kremic et al, (2006), Gillet, (1994), and Kakabadse and Kakabadse (2000) who observed that outsourcing has many hidden costs, which may not be known at the time of signing the contract.

Fourth objective sought to determine business strategy which influences banks to outsource IS functions. According to the findings of the study, business strategies also played an important role in outsourcing. A linear regression to establish the relationship between the strategies and outsourcing was found to be statistically significant with p value of less than 0.05. The factors studied under strategies included need to focus on core objectives, need to access superior technology, improved services, increased flexibility, and new business opportunities were all found to be statistically significant.

The observation is consistent with Willcocks et al.'s (2004) observations that outsourcing promises superior technical know-how and access to strategic business advice, which leads to efficient processes and better performance. Palvia (1995) and Barnes (2005) also observed that outsourcing leads to access to leading-edge technology and a firm can enjoy the latest technology without the lead time that is customarily required for in-house development.

The study found that small banks had a higher level of outsourcing than large banks. The level of IS outsourcing for small banks was 78% while the one for large banks was 58%. The findings of the study support the findings of Ono and Stango (2005) who found that small organizations were more likely to outsource non-core activities to the external service provider than the larger organizations. This is because they lack internal capacity and to take advantage of economies of scale enjoyed by the service providers. But these

results seem to contradict the argument by Besanko et al. (1996) that large organizations are likely to outsource non-core functions than the small organizations. It also contradicts what Borzekowski (2004) stated that large firms were more likely to outsource than small firms as they have economies of scale that favour such practices.

It was noted that the level of outsourcing for network maintenance, end-user support, e-business solution, user training, and programming for small banks is much higher than for medium and large banks. This was found to be as a result of lack of internal capacity. The other IS functions level of outsourcing was consistently the same for all banks.

CONCLUSION

The study established that commercial banks in Kenya outsourced activities such as hardware maintenance, software maintenance, systems implementation, and ATM maintenance. But these were done partially as banks maintained a part of the function in-house. The organizations were looking forward to outsourcing more activities such as user training, systems security, and data storage. Though the decision to outsource IS functions by the commercial banks in Kenya was a function of several factors such as business strategy, desire for quality, market forces of demand and supply, and the size of the organization, the cost of operations, desire for quality, and organizational size featured as the main drivers of IS outsourcing decisions ranking one, two, and three in that category. The study established that small banks had a higher level of outsourcing IS functions compared to the large banks. This is a clear indication that the size of the bank can influence their decision to outsource.

RECOMMENDATIONS

Though the study established that the banks, to a large extent, outsourced most of the IS functions, the outsourcing was mainly partial. This makes it difficult for the organizations to realize the full benefits of outsourcing. The study therefore recommends that commercial banks in Kenya concentrate of their core competencies and fully outsource non-core activities to realize the full benefits of outsourcing.

IS outsourcing can be used to achieve competitive advantage for the organization in which the organization decides to concentrate on its core activities thereby ensuring quality in terms of service delivery to its customers and at the same time getting the best services from the ICT experts. The study therefore recommends that commercial banks should not only look at outsourcing as a cost cutting measure but also as a business strategy and a cutting edge in the financial service industry. Banks should also pursue increased IS outsourcing as it leads to a flatter organizational structure arising from the shedding off of non-core activities to service providers. This leads to shorter communication paths, higher staff involvement in management, faster decision making, and stimulation of a customer focused culture.

It is noted that some banks have cancelled some outsourcing contracts citing increased costs and poor services. Although this is outside the scope of this study, it is noted that the overall level of satisfaction with the service of the IS service providers is moderate. This means that there is need to improve on the quality of the service provided by the IS service providers. This scenario also means that there is a need for more training on quality service for the IS service providers. The education and technical training sectors should consider offering specialised training in these areas to develop the necessary expertise in this field. Most of the banks indicated willingness to outsource more of their IS functions, hence the services will continue to be required.

The study also noted that there is little or no government regulation in the practice. The Kenyan government has not enacted legislation to guide outsourcing operations. It is recommended that the government and stakeholders consider developing a regulatory framework to enable

smooth operations in this field. As earlier noted, the government is keen to develop Kenya as an outsourcing destination with a view to create jobs and spur increased economic growth in the economy.

LIMITATIONS

It is noted that the response rate was 58%. This means that a significant portion of the banks did not participate in the study; hence, the findings of this study can only be cautiously extrapolated to the banking industry in Kenya. The findings are based on responses by bank IS managers and the quality of the study is limited to their knowledge and experience. In spite of the limitations, the study is useful in highlighting the benefits and risks that Kenyan banks face in IT outsourcing. The fact that the independent variables explained 60% of the dependent variable (decision to outsource) means that there are other explanatory variables not captured in the model.

RECOMMENDATIONS FOR FUTURE RESEARCH

Further studies can be done on the impact of outsourcing on the organizational performance. Similar studies can be replicated in other sectors of the economy. A study on the operations of the IS service providers would also be encouraged.

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APPENDIX 1: KENYAN BANKS

No	Name of the Bank	Total Assets KES Millions	Size
1	Kenya Commercial Bank	174,712	Large
2	Barclays Bank of Kenya	168,786	Large
3	Standard Chartered Bank	99,140	Large
4	Cooperative Bank of Kenya	83,897	Large
5	CFC Stanbic Bank	83,166	Large
6	Equity Bank	76,136	Large
7	Commercial Bank of Africa	50,110	Large
8	Citibank	47,535	Large
9	NIC Bank	42,704	Large
10	National Bank of Kenya	42,696	Large
11	Diamond Trust Bank	41,592	Large
12	I & M Bank	36,656	Large
13	Prime bank	19,945	Large
14	Bank of Baroda	18,361	Large
15	Fina Bank Housing Finance	14,330	Medium
16	Imperial Bank	13,432	Medium
17	Bank of Africa	12,304	Medium
18	Bank of India	12,049	Medium
19	Savings & Loan	11,555	Medium
20	Eco Bank	10,499	Medium
21	Family Bank	10,410	Medium
22	Chase bank	10,330	Medium
23	Fina Bank	9,865	Medium
24	K-Rep Bank	8,184	Medium
25	African Banking Corporation Bank	6,584	Medium
26	Habib Bank A.G. Zurich	6,557	Medium
27	Development Bank of Kenya	6,520	Medium
28	Giro Commercial Bank	5,938	Medium
29	Guardian Bank	5,558	Medium
30	Southern Credit Bank	5,171	Medium
31	Gulf Africa Bank	5,000	Medium

No	Name of the Bank	Total Assets KES Millions	Size
32	Consolidated Bank	4,657	Small
33	Habib Bank Ltd	4,491	Small
34	Victoria Commercial Bank	4,460	Small
35	Equatorial Commercial Bank	4,410	Small
36	Fidelity Commercial Bank	4,329	Small
37	Credit Bank	3,637	Small
38	Trans national Bank	3,388	Small
39	Middle East Bank	3,297	Small
40	First Community Bank	3.180	Small
41	Paramount Universal Bank	2,646	Small
42	Oriental Commercial Bank	2,289	Small
43	Dubai Bank	1,639	Small
44	City Finance Bank	538	Small
45	Charter Bank	Accounts not published.	Small

Source: Central Bank of Kenya Link: http://www.centralbank.go.ke/bankinfo/banks.asp (Accessed 24 February 2008)