THE EFFECTS OF E-COMMERCE ADOPTION ON BUSINESS PROCESS MANAGEMENT IN COMMERCIAL BANKS IN KENYA

NYAANGA O. RICHARD

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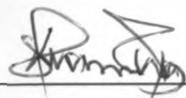**2007**

DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted for examination to this or any other University for credit.

Signed: _____ Date: 27.10.2007

NYAANGA, RICHARD ONGERI

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This project has been presented for examination with our approval as University supervisors

Signed: _____ Date: 02/11/2007

ONSERIO   NYAMWANGE

Lecturer, Department of management science, school of Business- University of Nairobi

Signed: _____ Date: 02 Nov 2007

ALFRED   KARWEGA

Lecturer Department of Management science, School Of Business-University Of Nairobi

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DEDICATION

I dedicate this work to my wife Evalyne and children, Fiona, Elizabeth and Josef and their endless love, patience and encouragement in supporting me all through. May this work be an inspiration to you to strive for higher and greater heights in your endeavors in life.

To my late Dad Joseph Ongeri and mother Elizabeth Nyanchama thank you for the firm foundation you laid for and the discipline you instilled and taking me to school the first day.

Thanks to my late Dad for teaching me to learn to be objective in any venture in all aspects of life through hard work, God rest your soul in peace

To My Wife Evalyne,

Thank You for Your Love

My Kids – Fiona, Eliza and Josef

You are God's Gifts

ACKNOWLEDGEMENT

ABSTRACT

This was a census study on the effects of e-commerce adoption on business process management in commercial banks in Kenya. The collected data was analyzed interpreted in line with the aim of the study namely, to assess the effects of e-commerce adoption on business process management in commercial banks in Kenya. Out of the sixty (60) respondents to whom the questionnaires were administered, only forty-one (41) respondents in the commercial banks in Kenya responded. This gave a response rate of 68.33% percent.

I solicited responses from 60 respondents and received 41 completed surveys representing three categories of employees in commercial banks from top management, middle level management and lower level managers. The survey contained 12 questions and determined to establish the effects of e-commerce adoption on business process management in commercial banks in Kenya. The questions enabled me to explore whether there is understanding of the concept of e-Commerce and whether banks have a formalized   policy on ecommerce and if the ecommerce has been introduced in banks business processes and their effects.

The results of this survey were reassuring in some respects and surprising in others with respect with respect to the adoption of eCommerce in business process management in commercial banks. The survey indicated that most banks have embraced use of e commerce and focused their businesses in collaborating with business partners and this has improved the image of the banks besides profit making.

The results also show that the major barriers encountered by banks in the increased use of e-commerce in business process management are conservative organizational cultures and lack of industry standards and there are many issues of e-commerce which have implications on banks business process man agent such as retail transfers e-payments, use of electronic ID, security of operations, internet banking, electronic signatures and sharing of a lot of mobile applications. It can be concluded that most banks have adopted e-commerce in their business processes and these has increased market share and profits. It has also enabled banks to easily deliver quality and variety of products to customers.

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LIST OF ACRONYMS

ATM	Automated Teller Machine
B2B	Business To Business
B2C	Business To Consumer
BAM	Business Activity Monitoring
BPM	Business Process Management
BPMS	Business Process Management Systems
BPR	Business Process Re-engineering
EC	Electronic Commerce
EDI	Electronic Data Interchange
EFT	Electronic Funds Transfer
EID	Electronic Identity
ERP	Enterprise Resource Planning
ICT	Information and Communication Technology
IT	Information Technology
JIT	Just in Time
MRP	Management Resource Planning
SSL	Secure Socket Layer
TQM	Total Quality Management

CHAPTER ONE: INTRODUCTION

1.1 Background

Managing the business processes that facilitate order fulfillment and delivery of goods and services supplied to customers is the prime concern of operations management. Consequently, the study of the processes of order fulfillment and delivery in the Internet era necessitates an understanding of the interaction between operations management and information systems (Lyons, 1998). Despite the growing importance of e-commerce to organizations of all types, e-operations is a neglected area of study. Yet many of the problems associated with e-commerce have centered on an inability to 'deliver the goods', often literally. Effective and efficient operations management is as important in e-commerce as it is in traditional business (John *et al.*, 2002).

The adoption of e-commerce is tending to automate rather than re-design existing business processes. High levels of internal information systems integration appear to be associated with low levels of business process integration. Business process management (BPM) is a systematic approach to improving an organization's business processes. BPM activities seek to make business processes more effective, more efficient, and more capable of adapting to an ever-changing environment. The integration of literature from the academic traditions of operations management and information systems, identifies three key issues: business process integration; information systems integration, that is the extent to which intra- and inter-organizational information systems are capable of communicating and sharing information with each other; and the operating context that is types of customers, the e-commerce business model and organizational factors (David *et al.*, 2002).

There can be little doubt about the growing importance of e-commerce. Recent advances in technology have created a surge in "technology-based self-service" (Dabholkar et al. 2003). Such developments are changing the way service firms and consumers interact, and are raising a host of research and practice issues relating to the delivery of e-service. Technology and e-commerce is one leading 'driving force' nowadays, in different businesses (Tavares, 2000). It was therefore important to research the business process implications of adopting e-commerce in the commercial banks in Kenya. This was because IT determines the success or

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failure of electronic commerce while providing consumers with a superior experience with respect to the interactive flow of information (Santos, 2003; Yang et al., 2001).

1.1.1 The Concept of E-commerce and Business Process Management

To date, operations management has been the neglected function in e-businesses. E-commerce (electronic commerce or EC) is the buying and selling of goods and services on the Internet, especially the World Wide Web. In practice, this term and a newer term, e-business, are often used interchangeably. For online retail selling, the term e-tailing is sometimes used. E-business has been defined as 'the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunications' (Zwass, 1996). At its simplest, electronic commerce may be defined as 'doing business electronically across the extended enterprise' (Till, 1998). The operations function is that part of an organization that is concerned with the management of the business processes that produce the goods and services supplied to customers. These processes of order fulfillment and delivery are at the heart of any business as they are the means through which an organization satisfies its customers. An organization can be considered to have e-operations if it uses information and communication technologies (ICT) in the management of its order fulfillment and delivery processes.

Business process management (BPM) is a field of knowledge at the intersection between management and information technology, encompassing methods, techniques and tools to design, enact, control, and analyze operational business processes involving humans, organizations, applications, documents and other sources of information. The term 'operational business processes' refers to repetitive business processes performed by organizations in the context of their day-to-day operations, as opposed to strategic decision-making processes which are performed by the top-level management of an organization (Debevoise, 2005).

BPM differs from business process reengineering, a management approach popular in the 1990s, in that it does not aim at one-off revolutionary changes to business processes, but at their continuous evolution. In addition, BPM usually combines management methods with information technology. BPM covers activities performed by organizations to manage and, if

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necessary, to improve their business processes. While such a goal is hardly new, software tools called business process management systems (BPM systems) have made such activities faster and cheaper. BPM systems monitor the execution of the business processes so that managers can analyze and change processes in response to data, rather than just a hunch (Debevoise, 2005 and Van *et al.*, 2003).

1.1.2 Impact of Technology on the Banking Sector

E-commerce is the complete set of processes that support commercial business activities on a network. In the 1970s and 1980s, this would also have involved information analysis. The growth and acceptance of credit cards, automated teller machines (ATM) and telephone banking in the 1980s were also forms of e-commerce. However, from the 1990s onwards, this would include enterprise resource planning systems (ERP), data mining and data warehousing. Continuous improvements in the information technology have enabled banks to provide their services in a more direct manner to adjust their products better to the clienteles' needs. Although banking has always been an information business, until now information technology was mainly used to automate administrative processes. The shift from automating to informating-using information and its flow to inform managers provides opportunities to track a customer's behavior and respond at the right time. In making effective use of these opportunities, banks are able to transfer a great deal of transactions from branch offices to a call-centre (John, et al., 2005).

In the categorization of services in technology-based service delivery options Dabholkar (1994) suggested there are a number of relevant classifications that will apply to industries employing technology based service delivery. The classification analyses "who" delivers the service. That is, person to person, where the employee uses the technology or consumer to technology, such as the use of an ATM. The next categorization looks at where the service is delivered. Either on the service firm's sites themselves, at the customer's home or office or at a "neutral" site such as an ATM located at an airport. The final categorization looks at the contact the customer has with the service operation, either direct or indirect such as in the case of telephone banking.

Dabholkar (1994) claimed that when the customer is in direct contact with the technology there is greater control such as with Internet banking. However, if there is an absence of

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direct contact, such as with telephone banking (since the technology itself is not visible to customers who are able only to press numbers on their telephone keypad) it is assumed that there is less control perceived by the customer during this transaction. Bateson (1984) has conducted a number of studies on the need for consumers to have control during service encounters. When a consumer freely chooses to use technology as a form of service delivery the impact is high in terms of quality attributes. Some of the quality attributes that are highly important to consumers are efficiency and speed (Bateson, 2000)

1.1.2 The Development of Commercial Banks in Kenya

Technology can save time and money and eliminate errors, thereby addressing certain issues associated with changing cultural and social trends, it can also minimize direct customer interaction and any associated service value to be gained (Bitner, 2001). With the Kenyan consumer becoming more informed, coupled with the advancement of information technology in doing business, consumers watchdogs being formed and awards being created for the best companies, it is reaching a point whereby either a company starts being responsible in all its core and non core activities or goes under. Brown (1998) acknowledged that Business had become the most powerful institution on the planet. He also stated that the dominant institution in any society needed to take responsibility for the whole but business had not had such a tradition.

The banking sector in Kenya which dates back to 1689, provides financial services to the low-income households and micro and small enterprises provide an enormous potential to support the economic activities of the poor and thus contribute to poverty alleviation. This puts emphasis on the sound development of banking institutions as vital ingredients for investment, employment and economic growth. But now the much-vaunted Kenyan banking sector is looking tarnished. Precisely the attribute of the system that previously appeared to be a virtue, the willingness of banks to go on lending to firms in distress, now turns out to have led to serious problems. Borrowers who should have been cut off were not, with the result that further billions were lost. The public has had to pay twice. They pay once, in the form of slowed economic growth as the result of the prolonged overhang of bad loans (and other aspects of the burst bubble), and then again as taxpayers when the government ends up footing the bill. (www.treasury.go.ke).

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According to Ochieng, (1998) and Otieno, (2006) the new information technology is becoming an important factor in the future development of Kenya financial services industry, and especially Kenyan banking industry. Banks are faced with a number of important questions, for examples how to take full advantage of new technology opportunities, how e-developments change the ways customers interact with the financial services provider. Kenya has achieved significant success in the implementation of electronic banking; it is on the top of the emerging markets in this area and even outpaces the achievements of some developed countries. This progress is not coincidence; it has external and also subjective reasons.

1.2 Statement of the problem

Although operations management and information management have evolved from different roots; that is operations management from scientific management and operations research; information management from computer science; they have some common conceptual underpinnings. Three principal commonalities are: systems theory and in particular the transformation model, the concept of process flows and the differentiation between constituents of hardware and software. Descriptive work, including any that concerns itself with the operational aspects of e-commerce, has usually come from journalistic sources, often with scant detail and usually little analysis. E-commerce seems to be following other advances in technology driven operations practice such as MRP and ERP, and indeed even some non-technologically based advances like JIT and TQM, in being led by practitioners, rather than academics (Debevoise, 2005). In short, while ecommerce is enjoying rapid advances in practice, theory has been left lagging behind. There was therefore need for a study to be carried in a Kenyan context, especially the Kenya commercial banks to analyze such phenomena in order to provide additional understanding that can form the basis of future development and application.

Presently, the banking sector in Kenya had grown to be more sophisticated and the focus had turned to the business process management and the quality of service offered to the customers (Okutoyi, 1988). Hence the banks were embracing technological innovations in form of e-commerce, thus embracing on e-operations. E-operations and commerce were seen

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more than ever as a key differentiator in the marketplace. One question relates to whether automated and e-commerce represents positive change and was enhancing business process management in Kenyan commercial banks. In the then current climate, competition in the banking sector was intense, with new financial service providers emerging all the time. It was particularly important to assess how technology was reducing the 'labour intensive activities, reducing service and processing cost, increasing service levels, and improving the productivity and competitiveness of the Kenyan financial sector. There was therefore need to examine the effects of e-commerce on these banks' business process management.

A number of studies have also been done on the business process effects of adopting e-commerce in organizations. Hedberg et al., (1997) carried out a survey on the influence of E-commerce on customer-facing operations, relationships with suppliers, and internal operations throughout the whole organization whether in the front office that is, those areas that involve contact with customers or in the back office that is, areas with no customer contact.

They concluded that the impact of e-commerce on operations management has, to date, focused primarily on the external links in the supply chain. This may be due to an assumption that e-commerce is associated with moves to more outsourcing, linked with concepts of the virtual organization. It may also be due to the need to manage the greater connectivity afforded by e-commerce, especially with external supply chain partners. One of the local researches by Otieno (2006) into internet banking technology adoption among Kenyan Commercial Banks concluded that internet banking is embryonic in Kenyan banks.

According to one of the other local studies by Ochieng, (1998), on the analysis of factors considered important in the successful implementation of information systems, a case study of commercial banks in Kenya; e-commerce was found to be the key factor on bank business process management. However, irrespective of the level of operational activity retained within the organization, the adoption of e-commerce seems bound to have significant implications for the way that business processes are managed internally and externally. As Grover and Malhotra (1999) assert, 'in conjunction with marketing, operations and information systems may very well form the backbone of e-commerce advances in organizations'.

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Although a number of researches had been done on the business process implications of adopting e-commerce, none had focused in the Kenyan commercial banks' management of internal business processes. The Kenyan banking Industry is a complex industry, involving multiple disciplines working together towards a common goal. This industry was often referred to as being fragmented in nature with a complex network of communications between the various disciplines. The latest drive towards innovation had motivated the industry into looking towards IT and e-commerce as a vital tool for simplifying the complexity of the banking process. Moreover the combinations of IT solutions and Internet e-commerce had together made it possible to manage and run projects in an efficient manner. These new possibilities can affect the current methods of doing banking business. The term e-commerce in this context refers to an application of technology towards the automation of business transactions and workflows. This study therefore aimed at assessing the effects of adopting e-commerce on business process management in the commercial banks in Kenya.

1.3 Objective of the Study

To assess the effects of e-commerce adoption on business process management in commercial banks in Kenya

1.4   Significance of the Study
The findings of this study will be useful to various stakeholders including:

1.4.1 Academics / Researchers

Findings from this research will assist academicians in broadening of the syllabus with respect to this study hence providing a deeper understanding of the internal business process management implications of adopting e-commerce. The findings may as well attract other researchers to research into other factors affecting the internal business process management in commercial banks in Kenya. The available literature is full of case studies from the west, which as pointed out by Aosa (1992), cannot be replicated without amendments for organizations operating in Africa and Kenya in particular.

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1.4.2 Bank Management

The findings of the research will enable bank management who are policy makers in designing policies that incorporate e-commerce into their banking activities to realize the benefits of adopting ICT strategies in their organizations. E-commerce has become a high profile issue and as such companies have begun to recognize the significant opportunities for both competitive advantage and risks associated with ICT performance. By adopting e-commerce in commercial banks in the internal business process management, banks will create a competitive edge and further in convincing customers that they are concerned about the efficient and effective service delivery in the wake of ICT revolution. Since the study looks at the implications of e-commerce adoption on business process management in commercial banks in Kenya, it will assume that e-commerce presents both positive and negative implication hence the challenges will also be highlighted for readdress by the banks.

1.4.3 Government

The Kenyan government has embraced on an ICT policy by the name "e-government". All organizations doing business in Kenya are supposed to embrace on technology too. By evaluating the internal business process management implications of adopting e-commerce in commercial banks in Kenya, the government can use the findings for their research to assist in policy formulation and development of a framework for adopting e-commerce in other banking institutions in Kenya. This study might also help in pointing the process through which e-commerce adoption can influence the internal business process success or failure of other organizations in Kenya. Policymakers will use the knowledge and data to adjust or strengthen the position in e-commerce adoption.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The literature from both operations management and information management can usefully inform the study of e-operations. This section will cover the critical issues relating to business process management, e-commerce, contributions and appreciation of such literature, contrivances and gaps.

2.2 Businesses Process Management

An operation can be thought of as an activity in which resource inputs are transformed into outputs. This may involve the transformation of customers, materials and information in the production of outputs of physical goods and/or intangible services (Slack et al., 2001). Traditionally the academic study of operations has tended to focus on operations at the micro-level (Vollman et al., 1997). However, modern approaches to operations management take a more holistic view of organizational activity, emphasizing the linkages between the various micro-operations that constitute an organization's macro-operations (Slack et al., 2001).

A business process as a logical sequence of interconnected activities that uses organizational resources to create products and services to meet customer needs (Childe et al., 1994). BPM is a subset of infrastructure management, the administrative area of concern dealing with maintenance and optimization of an organization's equipment and core operations. A business process is a set of coordinated tasks and activities, conducted by both people and equipment, which will lead to accomplishing a specific organizational goal. The Business Process Management Initiative (BPMI), a non-profit organization, exists to promote the standardization of common business processes, as a means of furthering e-business and business-to-business (B2B) development. Such perspectives of operations fit well with the broader strategic models of organizational activities, such as Porter's (1985) value chain. Operations management is especially concerned with the business processes that comprise order fulfillment and delivery.

The business process literature using titles such as business process improvement, business process reengineering and business process redesign, draws extensively on systems theory

(Armistead and Harrison, 1995). This literature emphasizes that business processes are likely to cross boundaries inside organizations typically those between functions and between organizations. Thus operations management needs to be viewed holistically within the broad context of the organization rather than within the narrow confines of a functional discipline (Armistead and Machin, 1997).

Supply chain management literature (Christopher, 1992) takes the business process perspective of operations management further, and goes beyond the boundaries of the organization to encompass relevant operations inside the organizations of suppliers and customers and suppliers' suppliers, and customers' customers. The notion of flow, as exemplified in the business process perspective, is prevalent in operations management. Techniques such as production flow analysis, process flowcharts, and service blueprinting are widely used to assess the movement of materials, people and information within business processes.

Writers taking a strategic perspective, notably Hayes and Wheelwright (1984), distinguish between two broad elements of operations management: structure - the physical elements of operations especially the nature, extent and scope of its technology and infrastructure - the way in which the technology of the operation is planned and controlled, the quality managed, the workforce managed and organized. These may be thought as the hardware and software respectively, of operations management.

As Grover and Malhotra (1999) noted, 'this interface is critically important, particularly more so since it is highly relevant and not very well understood'. Yet this is not virgin territory. The impact of e-commerce on supply chain management has clear echoes of a previous IT application in operations management, namely EDI (Threkel and Kavan, 1999). The Business Process Re-engineering (BPR) literature emphasizes the use of IT in the transformation of operational activity (Knights and Willmott, 2000; Jahnke and Tijok, 1998; Loeffler et al., 1998) and the impact of information systems integration on business process improvements (Bhatt, 2000; Weerakkoddy and Hinton, 1999). However, previous research has mostly focused on IT applications which were commonplace prior to the widespread adoption of the Internet and its associated technologies. For example, Venkatraman's (1994) framework for assessing IT-driven organizational change could, perhaps, be used in the

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examination of transformations driven by the adoption of e-operations. However, as it precedes the advent of e-commerce, both historically and technologically, it may have its limitations.

The dramatic increase in connectivity offered by the Internet can create almost unlimited information flows within, and especially into and out of organizations. It can be conjectured that the successful adoption of e-commerce in an organization's operations will largely depend on the extent to which information flows can be harnessed to enhance the management of the affected internal business processes. As Amar (1999) argued, 'how well a business of any form or size repositions itself in the marketplace and adjusts its practices in the light of the evolving principles of the Internet will decide for it the difference between success and the struggle for survival'.

Therefore, the implications for e-operations, including the potential benefits available, seem to centre on the degree of integration that an organization can achieve within and between its business process and its information systems. Chan and Swatman (2000) note that industries are finding the adoption of Internet-based forms of e-commerce a more complex process than they had anticipated. This is particularly the case when this adoption involves integration with internal applications systems and existing methods of doing business.

2.3 Business Process Management Activities

Although the initial focus of BPM was on the automation of mechanistic business processes, this has since been extended to integrate human-driven processes in which human interaction takes place in series or parallel with the mechanistic processes. A common form is where individual steps in the business process which require human intuition or judgment to be performed are assigned to the appropriate members of an organization as with workflow systems. More advanced forms are in supporting the complex interaction between human workers in performing a workgroup task. In this case many people and system interact in structured, ad-hoc, and sometimes completely dynamic ways to complete one to many

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transactions. The activities which constitute business process management can be grouped into three categories: design, execution and monitoring (Debevoise, 2005 and Van *et al.,* 2003).

2.3.1 Process Design

Process design encompasses the design and capture of existing business processes, as well as the simulation of new ones. The software used to do this includes graphical editors that document processes, repositories that store process models, and business process simulation tools to run a process a large number of times in order to measure performance parameters such as average time and cost (Van *et al.,* 2003).

Good design reduces the number of problems over the lifetime of the system. Changes to business processes, resulting from changes in the context that a business operates in, are a current research area. The integration of software used to create graphical representations of workflows, as well as to implement and maintain these workflows makes evolution of business processes less stressful (Debevoise, 2005).

2.3.2 Process Execution

According to Debevoise, (2005) the traditional way to automate processes is to develop or purchase an application that executes the required steps of the process. However, in practice, these applications rarely execute all the steps of the process accurately or completely. Another approach is to use a federation of software and human intervention. Due to the complexity of the federated approach, documenting a process is difficult. This makes changing or improving the process difficult.

As a response to these problems, software has been developed that enables the full business process (as developed in the process design activity) to be defined in a computer language which can be directly executed by the computer. The system will either use services in connected applications to perform business operations (e.g. calculating a repayment plan for a loan) or, when a step is too complex to automate, will message a human requesting input. Compared to either of the previous approaches, directly executing a process definition is much more straightforward and therefore easier to improve. However, automating a process

definition requires flexible and comprehensive infrastructure which typically rules out implementing these systems in a legacy IT environment (Debevoise, 2005 and Van *et al.,* 2003).

The commercial BPM software market has focused on graphical process model development, rather than text-language based process models, as a means to reduce the complexity of model development. Visual programming using graphical metaphors has increased productivity in a number of areas of computing and is well accepted by users. Business rules have been used by systems to provide definitions for governing behavior, and a business rule engine can be used to drive process execution and resolution.

2.3.3 Process Monitoring

This monitoring encompasses the tracking of individual processes so that information on their state can be easily seen and the provision of statistics on the performance of one or more processes. An example of the tracking is being able to determine the state of a customer order (e.g. ordered arrived, awaiting delivery, invoice paid) so that problems in its operation can be identified and corrected. In addition, this information can be used to work with customers and suppliers to improve their connected processes. Examples of the statistics are the generation of measures on how quickly a customer order is processed, how many orders were processed in the last month etc. These measures tend to fit into three categories: cycle time, defect rate and productivity (Davis*et al.,* 1989).

The degree of monitoring depends on what information the business wants to evaluate and analyze and how business wants it to be monitored, in real-time or ad-hoc. Here, Business Activity Monitoring (BAM) extends and expands the monitoring tools in BPMS. Process mining is a collection of methods and tools related to process monitoring (Lang and Colgate, 2003). The aim of process mining is to analyze event logs extracted through process monitoring and to compare them with an 'a priori' process model. Process mining allows process analysts to detect discrepancies between the actual process execution and the a priori model as well as to analyze bottlenecks (Debevoise, 2005 and Van *et al.,* 2003).

BPMS can be used to understand commercial banks in Kenya through expanded views that would not otherwise be available to organize and present. These views include the

relationships of processes to each other which, when included in the process model, provide for advanced reporting and analysis that would not otherwise be available. BPM is regarded to be the crucial backbone of enterprise content management.

2.4 Information Management and E-commerce

Electronic commerce, commonly known as e-commerce or eCommerce, consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks. The amount of trade conducted electronically has grown dramatically since the wide introduction of the Internet. A wide variety of commerce applications includes things such as electronic funds transfer, supply chain management, e-marketing, online marketing, online transaction processing, electronic data interchange (EDI), automated inventory management systems, and automated data collection systems (Mahadavan, 2000).

Modern electronic commerce typically uses the World Wide Web at at-least some point in the transaction's lifecycle, although it can encompass a wide range of technologies such as e-mail as well. A small percentage of electronic commerce is conducted entirely electronically for "virtual" items such as access to premium content on a website, but most electronic commerce eventually involves physical items and their transportation in at least some way (Venkatraman, 1994).

The meaning of the term "electronic commerce" has changed over the last 30 years. Originally, "electronic commerce" meant the facilitation of commercial transactions electronically, usually using technology like Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT), where both were introduced in the late 1970s, for example, to send commercial documents like purchase orders or invoices electronically. The 'electronic' or 'e' in e-commerce refers to the technology/systems; the 'commerce' refers to be traditional business models. In the dot com era, it came to include activities more precisely termed "Web commerce" - the purchase of goods and services over the World Wide Web, usually with secure connections with e-shopping carts and with electronic payment services, like credit card payment authorizations (Nissanoff 2006).

Today e-commerce encompasses a very wide range of business activities and processes, from e-banking to offshore manufacturing to e-logistics. The ever growing dependence of modern industries on electronically enabled business processes gave impetus to the growth and development of supporting systems, including backend systems, applications and middleware (Chaudhury *et al.*, 2002). Examples are broadband and fibre-optic networks, supply-chain management software, customer relationship management software, inventory control systems and financial accounting software.

When the Web first became well-known among the general public in 1994, many journalists and pundits forecast that e-commerce would soon become a major economic sector. However, it took about four years for security protocols (like *https*) to become sufficiently developed and widely deployed. Subsequently, between 1998 and 2000, a substantial number of businesses in the United States and Western Europe developed rudimentary web sites (Nissanoff 2006).

Although a large number of "pure e-commerce" companies disappeared during the dot-com collapse in 2000 and 2001, many "brick-and-mortar" retailers recognized that such companies had identified valuable niche markets and began to add e-commerce capabilities to their Web sites (Chaudhury *et al.*, 2002). For example, after the collapse of online grocer Webvan, two traditional supermarket chains, Albertsons and Safeway, both started e-commerce subsidiaries through which consumers could order groceries online.

The emergence of e-commerce also significantly lowered barriers to entry in the selling of many types of goods; accordingly many small home-based proprietors are able to use the internet to sell goods. Often, small sellers use online auction sites such as EBay, or sell via large corporate websites like Amazon.com, in order to take advantage of the exposure and setup convenience of such sites.

2.4.1 Information Management

Information management literature also displays these key features of transformation, flow, and soft and hard infrastructures. Like operations management, systems theory underpins much of the thinking in information management (Checkland and Holwell, 1998). The transformation model lies at the heart of the consideration of any information system,

although its focus is the processing of information. Similarly, the analysis of information flows is central to the understanding of information systems. As with operations, the boundary-spanning property of information is emphasized. The added value to be realized from information, as input and output to business processes, has been recognized throughout and between value chains, most notably by Porter and Millar (1985) and with respect to e-business by Evans and Wurster (2000).

Information management also has its own set of methods and techniques to aid this analysis (data flow diagrams and systems flowcharts). Commonly, these methods identify a system as having a set of inputs, a set of outputs, and a set of processes that convert inputs to outputs (Avison and Fitzgerald, 1995). The differentiation between hardware and software has long been a key consideration in information processing, despite the inextricable link between the two. Indeed, the recent and rapid application of information technologies seems mainly to be driven by a kind of technological determinism from within the organizations that these technologies serve. As Checkland and Holwell (1998) observed: 'There is a propensity to focus on the computer-based IT and to do what the technology allows us to do, almost, it seems for its own sake. Technically, the Internet seems certain to have a significant effect on IS design and development. It provides good examples of the fact that technological development can lead to changes in social thinking and activity.'

Technological developments have removed repetitive, time consuming tasks, reduced human error and extended access to banking related facilities. Technology also provides customer information that it would be much more expensive to provide on a person-to-person basis. Telephone banking facilities allow non-cash transactions to be carried out, which would have required a visit to a branch earlier (Prendergast and Marr, 1994). Similarly, Internet banking allows customers to perform tasks at a time and in a place convenient to them. Dabholkar (1996) suggests that direct contact with such technology also gives customers a feeling of greater control. Smith (1987) is of the opinion that technology was introduced in banks originally to reduce costs but that, by dividing front and back office operations, technology can be targeted to enhance different functions. The dilemma still remains, however, as to how to maintain a satisfactory number of face-to-face interactions with the customers.

2.4.2 E-commerce

E-commerce can be divided into six major areas (Bitner *et al.,*, 2001): E-tailing or "virtual storefronts" on Web sites with online catalogs, sometimes gathered into a "virtual mall"; The gathering and use of demographic data through Web contacts; Electronic Data Interchange (EDI), the business-to-business exchange of data; e-mail and fax and their use as media for reaching prospects and established customers (for example, with newsletters); Business-to-business buying and selling; and The security of business transactions

E-tailing or The Virtual Storefront and the Virtual Mall is a place for direct retail shopping, with its 24-hour availability, a global reach, the ability to interact and provide custom information and ordering, and multimedia prospects, the Web is rapidly becoming a multibillion dollar source of revenue for the world's businesses. A number of businesses already report considerable success. As early as the middle of 1997, Dell Computers reported orders of a million dollars a day. By early 1999, projected e-commerce revenues for business were in the billions of dollars and the stocks of companies deemed most adept at e-commerce were skyrocketing. Although many so-called dotcom retailers disappeared in the economic shakeout of 2000, Web retailing at sites such as Amazon.com, CDNow.com, and CompudataOnline.com continues to grow (Walker *et al.,* 2002).

Market Research in early 1999 widely recognized that because of the interactive nature of the Internet, companies could gather data about prospects and customers in unprecedented amounts -through site registration, questionnaires, and as part of taking orders (Venkatraman, 1994). The issue of whether data was being collected with the knowledge and permission of market subjects had been raised. (Microsoft referred to its policy of data collection as "profiling" and a proposed standard has been developed that allows Internet users to decide who can have what personal information.)

Electronic Data Interchange (EDI) is the exchange of business data using an understood data format. It predates today's Internet. EDI involves data exchange among parties that know each other well and make arrangements for one-to-one (or point-to-point) connection, usually dial-up. EDI is expected to be replaced by one or more standard XML formats, such as ebXML (Mahadavan, 2000).

E-Mail, Fax, and Internet Telephony make use of ecommerce and this is conducted through the more limited electronic forms of communication called e-mail, facsimile or fax, and the emerging use of telephone calls over the Internet. Most of this is business-to-business, with some companies attempting to use e-mail and fax for unsolicited ads (usually viewed as online junk mail or spam) to consumers and other business prospects. An increasing number of business Web sites offer e-mail newsletters for subscribers (Mahadavan, 2000). A new trend is opt-in e-mail in which Web users voluntarily sign up to receive e-mail, usually sponsored or containing ads, about product categories or other subjects they are interested in.

Business-to-Business Buying and Selling has enabled many companies that sell products to other companies and have discovered that the Web provides not only a 24-hour-a-day showcase for their products but a quick way to reach the right people in a company for more information (Van *et al.,* 2003).

The Security of Business Transaction includes authenticating business transactions, controlling access to resources such as Web pages for registered or selected users, encrypting communications, and, in general, ensuring the privacy and effectiveness of transactions. Among the most widely-used security technologies is the Secure Sockets Layer (SSL), which is built into both of the leading Web browsers (Lang and Colgate, 2003).

Not all activities in the commercial banks in Kenya can be effectively modeled and some processes are best left alone. The value in BPMS is not in automating very simple or very complex tasks, it is in modeling processes where there is the most opportunity.

2.5 The Impact of E-Commerce on Business Process Management

Rogers (2004) identified five characteristics or attributes of innovations that affect the rate at which innovations are adopted (and ultimately their usage patterns): their relative advantage, compatibility, complexity, divisibility (trialability), and communicability (observability). Additional characteristics were later added; perceived risk (Ostlund, 2005) and financial and social cost (Zeithaml, 2005).

In the UK an estimated 63% of companies now have a website (ONS, 2001); total e-commerce revenues, including the business to consumer (B2C) and business to business

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(B2B) transactions, were worth over £11 billion in 2000 and were forecast to rise to nearly £200 billion by 2004 (Forrester, 2001). As well as technological implications, the advent of e-commerce seems likely to have far-reaching economic and social implications for all organizations, irrespective of the industry in which they operate. For organizations that adopt e-commerce, there are likely to be significant effects on all of their functional disciplines. However, much of the debate is currently dominated by the concerns of the finance for example the liquidity and profitability of the dotcoms; the marketing for example the design of user-friendly websites; and the human resource for example IT skills shortages functions.

Investigation of the management of business process in an e-commerce organization needs to consider the extent of integration both internally and externally. Consideration of integration can be drawn together under three headings that can be used as the basis of a theoretical framework for empirical research.

2.5.1 Business Process Integration

Internal business process integration concerns the extent to which the business processes for e-commerce within a clicks-and-mortar organization (that is, one conducting both e-commerce and traditional business) are integrated with the traditional business processes. External business process integration is the extent to which the business processes are outsourced; including the extent to which any such outsourcing for e-commerce is integrated with outsourcing for traditional business. Another key concern is how the interface with the external supply chain, forwards and backwards, is managed, especially any disintermediating effects of the new technology. Equally, where there is reintermediation, or the formation of strategic alliances, lack of standardisation can be a key issue (Bitner *et al.,* 2001).

As Choi and Whinston (2000) stated, 'e-commerce business interoperability is built upon technological interoperability, which provides an open computer and networking structure. However, technological standards at the infrastructure level are relatively easier to reach than those at the applications and business process levels'.

2.5.2 Information Systems Integration

The consideration of information systems integration needs to encompass the extent to which information systems are integrated internally (both across functions, and between e-commerce and traditional activities) and externally (along the supply chain to suppliers and customers). It also needs to include the extent to which existing (that is, legacy) information systems are able to facilitate integration with EDI, ERP or CRM or, indeed, to circumvent the Internet altogether. As Davenport (2000) says, 'EDI is sometimes described as an expensive technology, but its costs pale in comparison to the human costs of agreeing on information and process standards'.

2.5.3 The Operating Context

Due regard also needs to be paid to the operating context in which e-commerce is taking place. This can be considered under three broad headings: customer context, e-commerce context, and organizational context. The customer context is the extent to which the organization is engaged in B2B and/or B2C e-commerce (Bitner *et al.*, 2001).

As Mahadevan (2000) noted, 'the Internet economy allows an organization to position itself at an appropriate level of the supply chain, depending on the nature of its business'. The e-commerce context is concerned with the present business model that is, whether it is a dotcom, or a clicks-and-mortar organization, the path to that model and the extent to which the business processes and information systems have had to change to facilitate the adoption of e-commerce.

The organizational context concerns factors such as the organization's objectives (profit-seeking or not for-profits), its size (multinational, Small Medium Enterprizes), its organizational culture, its industry sector, and other relevant factors that influence its business activities.

The interrelationship between the above three variables i.e. information system integration, business process integration and the operating context can be demonstrated as in figure 2.1 below.

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Figure 2.1 A Theoretical Framework for Investigating E-Operations

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┌──────────────────────────────────────────────────────────────────────┐
│          ┌──────────────────────────────────────────────┐             │
│          │            OPERATING CONTEXT                  │             │
│          │   ORGANIZATIONAL, TYPE, SME for Profits, Not for            │
│          │   Profits etc                                 │             │
│          │   CUSTOMERS: B2B; B2C                          │             │
│          │   E-COMMERCE MODEL: Clicks and Mortar; Dotcom │             │
│          │   start-up                                    │             │
│          └──────────────────────────────────────────────┘             │
│               ↕                              ↕                         │
│  ┌─────────────────────────────┐  ┌─────────────────────────────┐     │
│  │ BUSINESS PROCESS INTEGRATION│  │   INFORMATION SYSTEMS       │     │
│  │ EXTERNAL: Between clicks and │  │       INTEGRATION           │     │
│  │ bricks processes             │↔ │ EXTERNAL: Across functions   │     │
│  │ INTERNAL: Outsourcing of     │  │      Between clicks and bricks│    │
│  │ clicks processes;            │  │ processes                    │     │
│  │    Between clicks and bricks │  │ INTERNAL: With customers;    │     │
│  │    processes                 │  │ with suppliers               │     │
│  └─────────────────────────────┘  └─────────────────────────────┘     │
└──────────────────────────────────────────────────────────────────────┘
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Source: *Amar AD. 1999. E-business: selection and adaptation of products and services for e-commerce. Mid-Atlantic Journal of Business 35(1): 5–9.*

In practice, commercial banks in Kenya often start a BPM project or program with the objective to optimize an area which has been identified as an area for improvement. While, the current practice is to start by undertaking a business process mapping, that is the Business process modeling phase using a technique/notation such as Event-driven Process Chains.

2.6 E-commerce and the Retail Bank's Business Process Management

The literature provides an extensive account of the relationships between service quality, customer satisfaction, and financial performance where face-to-face interaction between customer and employee is the only focus. Recently, however, technology has had a remarkable influence on the growth of service delivery options (Dabholkar and Bagozzi, 2002). Banks have largely implemented e-operations 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 and Lederer, 2001; Howcraft and Beckett, 1996; Kelley, 1989). Changes in the banking industry

such as those resulting from deregulation, rapid global networking, and the rise in personal wealth have thus made the implementation of sophisticated delivery systems for example online and telephone banking, remote site automated teller machines, a strategic necessity in many cases (Lewis et al., 1994).

The concept of a strategic necessity is supported by Weatherall et al., (1984), who state that consumers are thought to have a positive perception of technology based service attributes since they believe technology will deliver a faster and more efficient service than that of the employee. Gummesson (1991) also stresses that reliability and user-friendliness are important attributes in the evaluation of technology-based services. Dabholkar (1994) stipulated that there should be flexibility in the design of the technology to allow customers to make changes during the transaction and make available a customer service adviser if required, with "minimum waiting". This also raises the design issue of sufficient menu options for ATM/Telephone and Internet bankers. In most cases the transaction occurs in a neutral location and the availability of an employee may not always be feasible since these facilities often operate 24 hours a day, seven days a week.

According to a case study by Daniel *et al.,* (2002) on a UK central mortgage office of a large retail bank, the financial system around the world has been facing a lot of changes. Mergers and acquisitions, deregulation, increased competition, changing information systems and technology, and human resources with different skills are just a few 'forces' that are influencing the banking business (Pereira, 1995). The following observations had been made: that previously, mortgage sales were obtained from customer contact with mortgage advisers based in local branches. Customers who wished to secure a loan were required to fill in an application form manually, which would then be posted to the bank's central mortgage office for processing. Here the application would be progressed by conducting credit checks on the applicant and a valuation of the property to be purchased. Alternatively, customers could apply over the telephone by calling the central mortgage office directly. Here, operators would take the caller's details over the telephone, completing an application form for them based on the verbal information provided. As part of the bank's move to Internet banking, it is now attempting to move some of its mortgage services online.

However, the company's retail website presently only has a 'call me' button to trigger a telephone call to the customer from the central mortgage office. The situation is complicated by the fact that the bank has recently taken over a major competitor, whose mortgage products are more developed than those of the bank; applicants are able to submit a mortgage application electronically. The online mortgage applications are currently still processed within the former competitor's offices. The bank was in the process of merging the two operations, but currently it was obliged to run them in parallel. When the operations were merged, all mortgage applications were dealt with by the bank's central mortgage office. Whether received online, by telephone or by post, applications will be handled by the same staff, using the same business process: potentially, an example of internal business process integration. But to date this internal information systems integration has not been realised, and achieving it remains a major issue (Pereira, 1995).

Currently, the bank's central mortgage offices have two distinct channels for the receipt of mortgage applications arising from the online operations. In the case of the bank's own mortgage products, applications are received over the telephone and are keyed in by the bank's operators. For the former competitor's products, applicants can key in their own application online and this is then transmitted to the bank's mortgage processing department. However, because of the incompatibility between the two systems, the processing department currently must generate a hard copy of each application (Pereira, 1995).

For applications received for the former competitor products, this means that the online application submitted by the customer has to be manually re-keyed by the bank's operators (Pereira, 1995). Although e-commerce in the form of Internet retail banking is a priority for the bank, online mortgage application processing is not. However, banks are carrying out further development of its website and intend to extend the online application process to its own mortgage products. The banks feel that a clear demonstration of customer benefit from e-commerce will be a significant issue in generating more online mortgage business than it handles at present, which it estimates to be around 2–3% of its total mortgage business.

Dabholkar (1994) discusses how technology-based services have made new service delivery options available to organizations, making customer participation more widely possible. Customers use touch screen "kiosks" to order take-away food, whilst banks have widely

distributed automatic teller machines to withdraw, transfer funds, make deposits into accounts or conduct any other transactions e.g balance inquiry. Accessibility has been extended through technological developments as well as the introduction of new service delivery methods that allow consumers to do business with service firms from the home and office.

2.7 The Benefits of E-Operations

The model in figure 2.1 provides a useful basis for data collection and subsequent data analysis in the next section on data methodology. It is especially helpful in providing a common basis for cross-case analysis. The main emergent benefits are discussed in this section under each of the three main headings of the model.

2.7.1 Business Process Integration

For all organizations, the e-commerce application is not transactional: it serves either to consolidate or to disseminate the information inputs and outputs from the business processes involved. The transaction is effected through the organization's normal staff and conventional processes, i.e. the dealers and mortgage processing staff respectively. The retail bank is the organization making poorest use of e-commerce. Unable to integrate applications received from its own online operation with those received from the competitor that it had acquired, the net effect of e-commerce is to vastly increase the volumes of information that the bank must process in the case of the fomer competitor's applications, through firstly re-keying them. In the circumstances, it is not surprising to learn that the bank does feel there is a business case to be made for e-commerce (Armistead and Machin 1997).

The investments made in e-commerce by companies are tending to result in the automation of existing processes, rather than the redesign of those processes. This in turn tends to reinforce the existing, largely functionally-based organizational structures, rather than creating process-based structures. This is perhaps, a surprising finding especially given all the interest in BPR over the last decade, much of which was driven by those who saw the possibilities for IT driven business process improvement. It very much runs counter to 'don't automate, obliterate' entreaty of Hammer (1990) and other advocates of BPR.

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2.7.2 Information Systems Integration

There is variation in the extent of internal information systems integration between organizations. Organizations have achieved a high degree of internal integration across their functions. The retail bank, however, suffers from incompatible information systems, having to download and re-enter information between two departments. Where business processes are run separately for e-commerce and traditional business, the level of internal information systems integration between the processes appears to be high. It may be that there is an association between high levels of internal IS integration and low levels of business process integration. The availability of the open systems of the Internet is an illustration of how the Internet can facilitate external IS integration with customers, as exemplified by the retail bank. Some organizations still seem to rely on more traditional methods of communication with its customers (Bhatt, 2000).

2.7.3 Operating Context

Consideration of the operating context for e-commerce is useful in two ways. It offers a route to the categorization of potential contingent variables; and it will also highlight specific conditions in any organization which need to be taken into account. Most companies have different e-commerce customers. For example, the retail bank is operating B2C e-commerce, the insurer operates B2B e-commerce, and the market-maker is using an e-commerce application to increase its B2C business.

2.8 Limitations of the E-Operations

All organizations and companies are not similar in that they are in the early stages of adopting e-commerce to become a clicks-and-mortar operator in an industry with a conservative culture. As such, different barriers arose for each organization, but with the consistent effect on all three being a slow and cautious implementation of e-commerce processes (Armistead and Machin, 1997).

These centre on the organizations' motives in adopting e-commerce and the intended purposes in the use of e-commerce. This seems to point to the need to place a consideration of impact of the adoption of e-commerce on internal business processes into the strategic context for an organization. Strategic context can be taken to be the relationship between organization's motives and intentions in its use of e-commerce and its corporate strategic objectives (Bitner, 2001).

The e-operations has therefore some limitations which are to be incorporated an explicit consideration of an organization's strategic context. As with the varying levels of business and information process integration, differing and sometimes contradictory reasons can be identified for each company's decision to implement e-commerce. To some extent, organizations are largely driven by internal, strategic factors. They perceives themselves as organizations offering a service which are unique and which they would like to extend to their (mainly retail) customers through an online Internet channel (Armistead and Machin, 1997).

The retail banks operate e-commerce mainly because of internal strategic factors, namely the acquisition of a competitor and its range of online Internet based mortgage products. The application of e-commerce can be driven by external factors: the perceived external threat from competitors and a sense of vulnerability at the hands of broker intermediaries (Bitner *et al.*, 2001).

According to Bitner *et al.,* (2001)The barriers to increased use of e-commerce are both social (for example conservative organizational and industry cultures) and technological (for example lack of industry standards and open systems). Organizations have various and often confused motives for adopting e-commerce. These include reducing costs, fear of being left behind by competitors, targeting specific niche markets, and experimentation (learning by doing).

2.9 Chapter Summary

On the gap analysis and the contributions from the reviewed literature; the study intends to examine the effects of adopting e-commerce on business process management in the commercial banks in Kenya. The study thus will wish to know whether the commercial banks in Kenya have any knowledge of the concepts of E-commerce and Internal Business Process Management. The study will also check whether the banks have a formalized policy on e-commerce and Internal Business Process Management.

The researcher will also extend the focus to check whether the banks are focusing on Business-to-Business e-commerce or Business-to-Customer e-commerce in their e-business. The study will also test on the extent to which the bank's e-business activities have focused to the key aspects of e-business focus. The study will also evaluate the how important are the e-commerce issues to the bank's business process management

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter describes the procedures that the researcher used in the study to collect and analyze the data collected from the field. This section covers the following major areas: Research design, target population, sample and sampling procedure, data collection instruments, test of validity and reliability of instruments, data collection procedures, data analysis procedures, operationalization of the variables and ethics.

3.2 Research Design

The survey strategy was chosen as the most appropriate. A Descriptive research design was also used in this study. This called for a combination of quantitative and qualitative methods of dong research, which have been practiced, as recommended by in management studies in the developing countries. This, as Meredith et al. (1989) argued that is the start point of the 'the normal cycle of research', in which description is used to form the basis for explanation which can then be tested against reality until, through a series of research studies, a theory can eventually be built. Triangulation was a useful approach to establish the credibility of qualitative research noting that, 'mixing a qualitative method and a quantitative method to give the researcher the potential to cover each method's weaknesses with strength from the other method. This research also utilized an ex-post facto design because such independent variables such as Manager's age, experience qualifications; gender, business size type and other business related factors cannot be manipulated. The research relied on records of events that have already taken place; hence the researcher did not manipulate any casual factors or challenges that the business managers pose to business process management performance.

3.3 Population

The population of the study was the forty-three (43) commercial banks incorporated and, or licensed to operate in Kenya (See Appendix III) and this constituted a census study.

3.4 Respondents

The sample frame constituted the three levels of management in the forty-three (43) commercial banks in Kenya that is the senior management, middle management and low-

level management ("team leadership"). That is, the Human Resources Managers, Information Technology Managers, Operations Managers, Strategic Managers/CEOs, Finances/capitalization Managers and Marketing Managers. The names and addresses of the banks were obtained from Central bank of Kenya Monthly Economic Review (2005).

The respondents were chosen using simple random sampling to ensure that the different groups of the population were adequately represented in the sample so as to increase their level of accuracy when estimating parameters. Respondents from each stratum were selected randomly. The strata were based on the senior, middle and the non-management staff of the 43 banks in Kenya.

Simple random sampling was to assist minimize bias when dealing with the population sample and; Stratified Sampling enabled the researcher to get information at different levels of management. In Stratified Sampling, the study population was segmented into cadres. This involved stratifying the businesses into meaningful levels and running disproportionate samples from the strata.

The sample size was determined using Stratified sampling technique, which was an approach that divided the total population into two or more groups called strata. For the commercial banks, the stratum was the senior, middle and non-management staff. A sample size of 60 respondents was selected for the study implying that two (2) to three (3) respondents from each bank were selected for the study, depending on size – customer base and the number of branches.

3.5 Data Collection

Primary data was collected using a semi structured questionnaire secondary data from sources like the files, pamphlets, office manuals circulars, policy papers and; observations (was done in a structural way).

Secondary data in form of e-commerce, transaction trails, networking interconnectivity, was gathered from library material, bank journals and reports, media publications and various Internet search engines covering the business process management implications of e-

commerce to commercial banks in Kenya. Permission to access office circulars, strategic plans, files and manuals and other relevant documents was initiated through the Head of Administration to other Business Branch Heads.

3.6 Research Procedures

Questionnaires were administered through personal visits and emails to facilitate quicker response. A pilot study was conducted on seven respondents, who were selected randomly, to assist the researcher to make amendments to the questionnaire where necessary.

3.7 Data Analysis Methods

Completed questionnaires were edited for completeness and consistency. The data was then coded and checked for any errors and omissions (Kothari, 1990). Frequency tables, percentages and means were used to present the findings.

Descriptive analysis that is, mean and standard deviation were used for likert-scale responses; Descriptive statistics (mean, mode and standard deviation) and inferential statistics were used in the analysis. The main justification is that it enabled the researcher to describe the findings in terms of their means, median, and mode across the commercial banks under study which was gave the study data a better presentation format. Inferential statistics involved drawing information from sampled observations of the population and making conclusions about the population (commercial banks in Kenya). Inferential statistics had a two-prong approach. First, sampling was conducted to be representative of the underlying population. Second, the procedures were capable of drawing correct conclusions about the population. The results of the study were then compared with literature review to establish the critical implications of e-commerce on the commercial banks business process management.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter covers data analysis and findings of the research. The data is summarized and presented in the form of proportions, means, tables and graphs. Data was collected from the forty-three (43) commercial banks incorporated and, or licensed to operate in Kenya. The collected data has been analyzed interpreted in line with the aim of the study namely, to assess the effects of e-commerce adoption on business process management in commercial banks in Kenya. The respondents were the senior management, Middle management and Low-level management ("team leadership") of these banks. Out of the sixty (60) respondents to whom the questionnaires were administered, only forty-one (41) respondents in the commercial banks in Kenya responded. This gave a response rate of 68% percent.

4.2 E-Commerce Adoption and Business Process Management

Before assessing the effects of e-commerce adoption on business process management in commercial banks, there was need to check whether the commercial banks had adopted e-commerce on their business process management.

4.2.1 Knowledge and Existence of a Formalized Policy on E-Commerce and Internal Business Process Management

Respondents were asked to indicate whether they have ever heard of the concept of E-commerce and internal Business Process Management and on the same note whether the banks have a formalized policy on e-commerce and Internal Business Process Management. The results are shown on table 4.1.

Table 4.1 Knowledge and Existence of a Formalized Policy on E-Commerce and Internal Business Process Management

Knowledge and Existence	Frequency	Percentage
Yes	36	87
No	5	13
TOTAL	**41**	**100**

Source: research Data

From the results in table 4.1, it was found that most respondents understood or they have heard of the two concepts of E-Commerce and Internal Business Process Management. The commercial banks in Kenya that is 87% of them have Formalized Policy on E-Commerce and Internal Business Process Management. This shows there was a reassuring reason and for the study on the effects of e-commerce adoption on business process management in the commercial banks.

The respondents were further asked to state who has been initiating the e-commerce on the banks Internal Business Process Management and the results are shown on table 4.2.

Table 4.2 Who Has Been Initiating the E-Commerce on the Banks Internal Business Process Management

Initiators	Frequency	Percentage
Management	19	51.4
Board of Directors	17	45.9
Employees	1	2.7
TOTAL	37	**100**

Source: research data

From the results in table 4.2, it was found that the management and board of directors have been key players in the adoption of E-Commerce on Business Process Management in the banks. This is a clear indication that there is top management support and team work in the efforts of ensuring that the adoption of E-Commerce on Business Process Management in the banks is a success through team leadership.

4.2.2 The Focus of the Banks' E-Business Initiatives

The operating context in which e-commerce is taking place is considered under three broad headings: customer context, e-commerce context, and organizational context. The customer context is the extent to which the organization is engaged in B2B and/or B2C e-commerce. The e-commerce context is concerned with the present business model that is, whether it is a dotcom, or a clicks-and-mortar organization, the path to that model and the extent to which the business processes and information systems have had to change to facilitate the adoption of e-commerce. The organizational context concerns factors such as the organization's objectives, its size, its culture, its industry sector, and other relevant factors that influence its business activities. The respondents were asked to indicate what their banks were focusing on their e-business initiatives, and the results are as in table 4.3 below.

Table 4.3 The Focus of the Banks' E-Business Initiatives

Focus of the Banks' E-Business Initiatives	Frequency	Percentage
Business-to-Customer	30	75.0
Business-to-Business	10	25.0
TOTAL	40	**100**

Source: research Data

From the responses in table 4.3, it was found that the major focus of the banks' e-business initiatives in business process management was Business-to-Customer e-commerce with 75% as compared to Business-to-Business e-commerce with 25%. This is an indication that the banks' e-business initiatives in business process management are aimed at customer satisfaction. This concurs with a survey conducted in the UK which estimated 63% of companies now have a website (ONS, 2001); total e-commerce revenues, including the business to consumer (B2C) and business to business (B2B) transactions, were worth over £11 billion in 2000 and are forecast to rise to nearly £200 billion by 2004 (Forrester, 2001).

4.3 The Effects of E-Commerce Adoption on Business Process Management

There are many possible effects of e-commerce adoption on business process management in commercial banks. Investigation of the management of business process in an e-commerce organization considers the extent of integration both internally and externally. Consideration of integration can be drawn together under three headings that was used as the basis of a theoretical framework for the research, that is, the extent to which the business processes for e-commerce within a clicks-and-mortar organization (that is, one conducting both e-commerce and traditional business) are integrated with the traditional business processes (Internal business process integration); the extent to which information systems are integrated internally - both across functions, and between e-commerce and traditional activities and externally, along the supply chain to suppliers and customers (information systems integration). Due regard also needs to be paid to the operating context in which e-commerce is taking place considering customer context, e-commerce context, and organizational context.

4.3.1 The Focus of the Bank's E-Business Activities

Respondents were asked to indicate (on a scale of 1-5 where 1 represented strongly agree and 5 represented strongly disagree,) the extent to which the banks' e-business activities have been focused to some business process management dimensions, and the results are as in table 4.4, below.

Table 4.4 The Focus of the Bank's E-Business Activities

The Focus of the Bank's E-Business Activities	Mean	Std. Deviation	Rank
Collaboration with business partners using ICT	2.1429	0.66299	1
Provision of other on-line and e-services, including e-marketing and advertising	2.4286	1.28388	2
Supply chain management using intranet	2.7143	1.13873	3
On-line buying (internet)	2.9231	1.03775	4
On-line selling (Internet)	3.2308	.72501	5

Source: Research Data

From the results in table 4.4, it was found that to a great extent (Mean = 2) the banks have focused their e-business activities on collaborating with business partners using ICT; provision of other on-line and e-services, including e-marketing and advertising; supply

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chain management using intranet; and on-line buying (internet). This is an indication that banks do not carry a lot of selling through internet, but all other aspects of e-business are well focused on in the banks business process management.

4.3.1 Important Issues to E-Commerce In Bank's Business Process Management

There are many issues to e-commerce in business management. The banks' business management is not an exception. The respondents were asked to indicate the extent to which some issues to e-commerce in bank's business process management are important. This was on a five likert-scale where Very Great Extent = 1; Great Extent = 2;   neither agree nor Disagree = 3; Small Extent = 4; Very Small Extent = 5. The results are as in table 4.5.

Table 4.5 Important Issues to E-Commerce In Bank's Business Process Management

The Focus of the Bank's E-Business Activities	Mean	Std. Deviation	Rank
Data protection	1.3056	.52478	1
Privacy	1.3125	.53506	2
Data retention	1.3714	.73106	3
Electronic signatures	1.5135	.69208	4
Liability for online transactions	1.6970	.91804	5
Validity of a contract concluded by electronic means	1.7179	1.07480	6
Security of payment	1.7500	.91581	7
e-invoice	1.7647	.78079	8
Enforceability	1.7647	.92307	9
Obligation to register or request an authorization to provide cross-border services	1.8125	.93109	10
Status of partner in e-business collaboration	1.8529	.82139	11
Licenses	1.8667	1.13664	12
Taxation/Customs	1.8824	.84440	13
Consumer protection & complaints	1.8947	.68928	14
Liability between partners and towards customers	1.9429	.96841	15
Conflict resolution	1.9459	.97028	16
Other IPRs like patents	1.9677	1.22431	17
Spam, phising, hacking, etc	2.1600	1.17898	18
"Copyleft" and free copyright like creative commons	2.1765	1.14072	19

Source: Research Data

From the results in table 4.5, the most important issues to e-commerce in bank's business process management to a very great extent were found to be data protection; privacy; data

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retention; electronic signatures; liability for online transactions; validity of a contract concluded by electronic means; security of payment; e-invoice; enforceability; and lastly the obligation to register or request an authorization to provide cross-border services. This shows from the study and there is indication that the key issues that affect banks business process management are considered in the e-commerce policy.

The respondents were also asked to indicate the extent to which the e-commerce activities in the bank's business process management have been affected by legal troubles, and from the research data, it was found that they have been affected to a great extent (Mean = 2). This is in line with the above issues ; privacy; data retention; electronic signatures; liability for online transactions; validity of a contract concluded by electronic means; security of payment; since all are under legal aspects associated with the use of ICT in business process management.

4.3.2 Sources Used to Gather Information about Legal Issues Relevant to the Banks

There are some many sources of information about legal issues. Since the banks have been affected by legal issues to a great extent, the respondents were asked to indicate extent to which the banks use some key sources to gather information about legal issues relevant to the bank's e-commerce in business management. This was on a five likert-scale where Very Great Extent = 1; Great Extent = 2; neither agree nor Disagree = 3; Small Extent = 4; Very Small Extent = 5. The responses are as in table 4.6 below.

Table 4.6 Sources Used to Gather Information about Legal Issues Relevant to the Banks

Sources Used to Gather Information about Legal Issues Relevant to the Banks	Descriptive Statistics		Rank
	Mean	Std. Deviation	
Legal advisors	1.6750	1.07148	1
News, services from chambers of commerce, Banking industry associations	1.9000	.87119	2
Personal contacts	2.3636	1.05529	3
Online sources (internet)	2.5714	1.33473	4

Source: Research Data

From the results in table 4.6, the most important sources used to gather information about legal issues relevant to the banks to a very great extent (Mean = 1) were found to be legal

advisors, news, services from chambers of commerce, and banking industry associations. The respondents were further asked to indicate the type of tool the bank uses to access the information about legal issues. From the research data, surfing websites and purchasing of information were the main source.

4.3.3 The Barriers Encountered By the Bank in Increased Use of E-Commerce in Business Process Management

The respondents were asked to indicate the barriers encountered by the banks in the increased use of e-commerce in business process management, and the responses are as in table 4.7.

Table 4.7 The Literature review items were used to come up with the items on the questionnaire. The research methodology was based on the fact that the study was a census design. This method allowed the collection of a large amount of descriptive information that was analyzed. A questionnaire with open ended and closed ended question was developed by the researcher and used in data collection.

Based on the results from data analysis and findings of the research, the following conclusions were arrived at, based on the objective of the study; Firstly, it was found that most respondents understood or they have heard of the two concepts of E-Commerce and Internal Business Process Management. The commercial banks in Kenya have Formalized Policy on E-Commerce and Internal Business Process Management.

Secondly, the major focus of the banks' e-business initiatives in business process management was Business-to-Customer e-commerce as compared to Business-to-Business e-commerce; an indication that the banks' e-business initiatives in business process management is aimed at customer satisfaction. Thirdly, it was found that to a great extent the banks have focused their e-business activities on collaborating with business partners using ICT; provision of other on-line and e-services, including e-marketing and advertising; supply chain management using intranet; and on-line buying (internet). Fourthly, the most important issues to e-commerce in bank's business process management to a very great extent were found to be data protection; privacy; data retention; electronic signatures; liability for online transactions; validity of a contract concluded by electronic means; security of payment; e-

invoice; enforceability; and lastly the obligation to register or request an authorization to provide cross-border services.

Fifthly, the two major barriers encountered by the banks in increased use of e-commerce in business process management are conservative organizational cultures and lack of industry standards. Sixthly, among the ten major current implications of e-commerce on banks business process management are retail transfer e-payments (ATM transactions, card-based e-money and cash withdrawals); and there is use of electronic ID; security of operations has been enhanced, internet has been enhanced

Lastly, e-commerce is the complete set of processes that support commercial business activities on a network. The five major effects of e-commerce on banks business process management are it has improved the image of the banks; besides profit making the banks have been actively engaging themselves for the good of the effective business process management; effective business process management has caused great market share and more profits to the banks ; everybody is now familiar with the concept of Effective business process management and the banks employees have got some input to help make decisions on Effective business process management.

Table 4.7 The Barriers Encountered By the Bank in Increased Use of E-Commerce in Business Process Management

The Barriers Encountered		
	Frequency	**Percentage**
Conservative organizational cultures	20	48.8
Lack of industry standards	14	34.1
Industry cultures	4	9.8
Fear of being left behind by competitors	3	7.3
TOTAL	41	**100**

Source: research Data

From the results in table 4.7, the two major barriers encountered by the banks in increased use of e-commerce in business process management are conservative organizational cultures and lack of industry standards. This concurs with Bitner *et al.,* (2001) observations that the barriers to increased use of e-commerce are both social for example conservative organizational and industry cultures and technological for example lack of industry standards and open systems.

4.3.4 The Status of the Critical Aspects of E-Commerce and Business Process Management

There are many issues of e-commerce which are as a result of its adoption and arising implications on banks business process management. The extent of use depends on an organization's status in the adoption of e-commerce in its business process management. The respondents were asked to indicate the extent to which the commercial banks use or might be considering the use of some of the key aspects associated with e-commerce in their business process management. This was on a five likert -scale where Very Great Extent = 1; Great Extent = 2; neither agree nor Disagree = 3; Small Extent = 4; Very Small Extent = 5. The results are tabulated as in table 4.8 below.

Table 4.8 The Status of the Critical Aspects of E-Commerce and Business Process Management

The Status of the Critical Aspects of E-Commerce and Business Process Management	Descriptive Statistics		Rank
	Mean	Std. Deviation	
Retail transfer e-payments (ATM transactions, card-based e-money and cash withdrawals)	1.5000	.68773	1
Electronic ID	1.5000	.76229	2
Security	1.5152	.75503	3
Internet	1.5676	.86732	4
Retail e-payments (credit & debit cards)	1.6000	.70892	5
Electronic signatures	1.6923	.86310	6
Mobile applications	1.7429	.61083	7
Wholesalers e-payments (large value transfer systems, automatic clearing and credit transfers)	1.7742	.80456	8
Electronic document management	1.7879	.92728	9
Payments	1.7941	.80827	10
Registration process for customers	1.8333	.69693	11
E-procurement	1.8611	.79831	12
Certificates for security of payment	1.9310	.88362	13
Online marketing	1.9677	.87498	14
Collaborative tools for e-business	1.9714	.82197	15
Security layers	2.0000	.89443	16
Applications	2.1000	.95953	17
Metaresearch or advanced extraction applications	2.1304	.86887	18
Virtual private network	2.1429	.93152	19
E-auctions for procurement	2.2647	1.02422	20

Source: research Data

From the results in table 4.8, the ten major current implications (Mean = 1) of e-commerce on banks business process management are retail transfer e-payments (ATM transactions, card-based e-money and cash withdrawals); there is use of electronic ID; security of operations has been enhanced, internet has been enhanced, there has been improved management of retail e-payments (credit & debit cards); electronic signatures are now stored and can be shared, with a lot of mobile applications. There is an increased wholesaler's e-payment (large value transfer systems, automatic clearing and credit transfers). There is also electronic document management, electronic registration process for customers, E-procurement and certification for security of payment.

4.3.5 The Specific Effects of E-commerce to Bank's Business Process Management

E-commerce is the complete set of processes that support commercial business activities on a network. There are many effects of e-commerce to bank's business process management. The respondents were asked to indicate the specific effects of e-commerce to bank's business process management. This was on a five likert-scale where Very Great Extent = 1; Great Extent = 2;   neither agree nor Disagree = 3; Small Extent = 4; Very Small Extent = 5. The results are tabulated as in table 4.9 below.

Table 4.9 The Specific Effects of E-commerce to Bank's Business Process Management

The Specific Effects of E-commerce to Bank's Business Process Management	Mean	Std. Deviation	Rank
It has improved the image of the bank	1.6098	.99695	1
Besides profit making the bank should also be actively engaging itself for the good of the effective business process management	1.6410	.77755	2
Effective business process management has caused great market share and more profits to the bank	1.7500	1.08012	3
Am familiar with the concept of Effective business process management and have heard of it.	1.9250	.91672	4
The bank asks me for my input to help make decisions on Effective business process management	1.9750	.76753	5
Effective business process management has caused me to work long hours to ensure that it is enhanced	3.0000	1.08604	6

Source: research Data

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From the results in table 4.9, the five major effects (Mean = 1) of e-commerce on banks business process management are, it has improved the image of the bank; besides profit making the banks have actively engaged themselves for the good of the effective business process management; effective business process management has caused great market share and more profits to the bank; everybody is now familiar with the concept of effective business process management and the bank employees have got some input to help make decisions on Effective business process management.

The revelations are in line with Dabholkar's (1994) claim that when the customer is in direct contact with the technology there is greater control such as with Internet banking. But contradicts his observation that, if there is an absence of direct contact, such as with telephone banking (since the technology itself is not visible to customers who are able only to press numbers on their telephone keypad) it is assumed that there is less control perceived by the customer during this transaction. This is further in line with Bateson's (1984) number of studies on the need for consumers to have control during service encounters. When a consumer freely chooses to use technology as a form of service delivery the impact is high in terms of quality attributes. Some of the quality attributes that are highly important to consumers are efficiency and speed (Bateson, 2000).

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings and makes conclusions on this study on the effects of e-commerce adoption on business process management in commercial banks in Kenya. It also includes the study recommendations for improvement and for further research

5.2 Summary

The major findings of the study can be summarized as follows, in investigating the effects of e-commerce adoption on business process management in commercial banks as revealed in the analysis indicates that most employees of the banks understand e-commerce and contribute to its adoption and implementation by banks. Many banks have adopted use of e-commerce in their business processes. The evidence gathered through survey also indicates that banks have gained much by adopting e-commerce in their business processes and these has enabled them to realize many advantages ranging from security of transactions , faster delivery of services to customers and improved quality of products ant many useful attributes. The most significant issues to e- commerce in banks and their business processes management include, online transactions, data protection, data retention, electronic signatures, validation of contracts , security, and authorization to provision of cross border services.

Banks use the e-commerce in collaborating with other business partners and gathering legal issues. E –commerce has improved bank images, improved profits, enhanced market share and made them realize effective business process management.

5.3 Conclusions

Based on the survey and study and the results from data analysis and findings of the research, one can safely conclude the following, based on the objective of the study;

Firstly,. It was found that most respondents understood or they have heard of the two concepts of E-Commerce and Internal Business Process Management. The commercial banks in Kenya have Formalized Policy on E-Commerce and Internal Business Process Management.

Secondly, e-commerce is taking place under three broad headings: customer context, e-commerce context, and organizational context. It was found that the major focus of the banks' e-business initiatives in business process management was Business-to-Customer e-commerce as compared to Business-to-Business e-commerce; an indication that the banks' e-business initiatives in business process management are aimed at customer satisfaction.

Thirdly, banks have focused their e-business activities on collaborating with business partners using ICT; provision of other on-line and e-services, including e-marketing and advertising; supply chain management using intranet; and on-line buying (internet).

Fourthly, the key policy issues to e-commerce in bank's business process management to a very great extent were found to be data protection; privacy; data retention; electronic signatures; liability for online transactions; validity of a contract concluded by electronic means; security of payment; e-invoice; enforceability; and lastly the obligation to register or request an authorization to provide cross-border services.

Fifthly, the two major barriers encountered by the banks in increased use of e-commerce in business process management are conservative organizational cultures and lack of industry standards. Sixthly, there are many issues of e-commerce, which are as implications on banks business process management. Among the ten major current implications of e-commerce on banks business process management are retail transfer e-payments (ATM transactions, card-based e-money and cash withdrawals); there is use of electronic ID; security of operations has been enhanced, internet has been enhanced, there has been improved management of retail e-payments (credit & debit cards); electronic signatures are now stored and can be shared, with a lot of mobile applications.

Finally the effects of adopting of e-commerce on banks business process management by banks are, it has improved the image of the bank; besides profit making the bank have are engaging themselves for the good of the effective business process management; effective business process management has caused great market share and more profits to the bank; it has also improved quality of customer services and made processes more effective.

5.4 Recommendations

The following challenges need to be addressed within the commercial banks in Kenya: balancing effective business process management and the long hours which people work to ensure that e-commerce and effective business management is enhanced.

Since the two major barriers encountered by the banks in increased use of e-commerce in business process management are conservative organizational cultures and lack of industry standards. The commercial banks in Kenya should get a way of dealing with both social for example conservative organizational and industry cultures and technological for example lack of industry standards and open systems to give any change taking place some degree of legitimacy. They should remove the status quo to be supportive to any formulation of new ideas in order to respond to an ever-changing environment.

5.5 Limitations of the Study

The field study and survey approach is not without potential problems. Survey faces the objection that particicipants do not understand the reason for the study hence lack of corporation in answering questionnaires. Some limitations of the study arise from the fact that employees during interviewing develop some bias regarding responding to the questions due to self selection bias. The following factors were the greatest hurdles while conducting the study: Irrelevancy, Some of the respondents had no information hence giving out data which was not satisfactory. Transportation and other financial constraints: Due to poor means of communication it took long to visit all branches and this led to arriving when some of the managers had left for meetings and others home. Time: It took long when collecting the questionnaires because some of the respondents kept them and never bothered to answer or return them. Lack of understanding and general unwillingness to fill questionnaires on pretext that such information will be used counter banks competitors. Literature availability: Due to poor equipped libraries on ICT and e-operations it took long to get the required data and literature.

5.6 Recommendations for Further Research

The results provide further impetus for research to asses the validity of information content and increasing the number of banks adopting use of e-commerce in their business processes to shed more light in the implications of e-commerce adoption and its role in banks business

process management. Areas of further research that were identified include a similar study to be carried out on other sectors of commercial and financial sector and, non bank financial institutions. A study on the key benefits of e-commerce adoption on business process management in other sectors of commercial and financial sector in Kenya. Crucially further research should be done to determine how e-commerce adoption on business process management can contribute to companies' financial performance and how such benefits can be measured and to what extent can the benefits if any be quantified by the organizations.

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FACULTY OF COMMERCE
MBA PROGRAM – LOWER KABETE CAMPUS

DATE.. **28/08/2007**

TO WHOM IT MAY CONCERN

The bearer of this letter ..... **Richard O. Nyaanga**

Registration No: **D61/P/7004/05**

s a Master of Business Administration (MBA) student of the University of Nairobi.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate if you assist him/her by allowing him/her to collect data in your organization for the research.

The project is entitled .**The Implications of E-commerce Adoption on Business Process Management in Commercial banks in Kenya.**

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request

Thank you.

J.T. KARIUKI
CO-ORDINATOR, MBA PROGRAM

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA OFFICE
P. O. Box 30197
NAIROBI

APPENDICES

APPENDIX I: COVER LETTER

Nyaanga Richard Ongeri

University of Nairobi

P.O Box 300197,

Nairobi

Dear Respondent,

I am carrying out a research on "The Implications of E-Commerce Adoption on Business Process Management in Commercial Banks in Kenya ". This is in partial fulfillment of the requirement for the Degree of Masters in Business Administration – Operations Management at University of Nairobi, School of Business.

The main purpose of the study is to evaluate the internal business process management implications of adopting e-commerce in commercial banks in Kenya.

The results of this study will be used to derive the internal business process management implications of adopting e-commerce in commercial banks in Kenya. I would be grateful if you could spare some time and provide the information in the attached questionnaire. The information requested is needed for purely academic purposes and will be treated in strict confidence, and will not be used for any other purpose other than for my research.

Thank you for your assistance.

Yours truly,

Nyaanga Richard Ongeri (D61/P/7004/2005

   RESEARCHER (0722 497901)

APPENDIX II: RESEARCH QUESTIONNAIRE

The Implications of E-Commerce Adoption on Business Process Management in Commercial Banks in Kenya

Please take a few minutes to complete this Questionnaire. Your specific answers will be completely confidential and no organization names or respondents identities will be disclosed without full consent of the concerned.

Name of the bank (optional)⊗ _____

1. Have you heard of the E-commerce and Internal Business Process Management concept?

       Yes [   ]   No   [   ]

2. Does your bank have a formalized policy on e-commerce and Internal Business Process Management?

       Yes   [   ]   No   [   ]

       If yes, how has e-commerce been initiated in your bank's Internal Business Process Management?

a) By Board of Directors   [   ]
b) By Management   [   ]
c) Government legislation   [   ]
d) By employees   [   ]
e) Other stakeholders (please specify)   [   ]

_____

_____

4. What is your bank focusing on in its e-business initiative?

a) Business-to-Business e-commerce   [   ]
b) Business-to-Customer e-commerce   [   ]
c) Others (please
    specify)(_____

_____

5. To what extent has your bank's e-business activities been focused to the following aspects of e-business focus. Please mark appropriate selection or provide specific description.

Aspects of E-business Focus	Very Great Extent	Great Extent	Neither agree nor Disagree	Small Extent	Very Small Extent	Very Small
On-line buying (internet)						
On-line selling (Internet)						
Supply chain management using intranet						
Provision of other on-line and e-services, including e-marketing and advertising						
Collaboration with business partners using ICT						
Others (please specify)						

6. In your opinion, how important to e-commerce are the issues listed below to your bank's business process management?

E-Commerce Issues	Very Importa	Importa nt	Not Importa	No Familiar
Validity of a contract concluded by electronic means				
Electronic signatures				
e-invoice				
Taxation/Customs				
Security of payment				
Obligation to register or request an authorization to provide cross-border services				
Data protection				
Data retention				
Privacy				
Liability for online transactions				
Liability between partners and towards customers/third parties				
Conflict resolution				
Enforceability				
Consumer protection & complaints				
Status of partner in e-business collaboration (legal entity or not)				
Copyright				
"Copyleft" and free copyright like creative commons				
Linceses				
Other IPRs like patents				
Others (specify)				
Spam,phising, hacking, etc				

7. To what extent are your e-commerce activities in the bank's business process management affected by legal troubles?

Very Great Extent [ ] Great Extent   [ ]   Small Extent   [ ] Very Small Extent [ ]

8. To what extent does your bank currently use the following sources to gather information about legal issues relevant to your bank?

Sources	Very Great Extent	Great Extent	Neither agree nor Disagree	Small Extent	Very Small Extent	Very Small Extent
Personal contacts						
News, services from chambers of commerce, Banking industry associations						
Legal advisors						
Online sources (internet)						
Newsletters and magazines						
Others (please specify)						

9. What type of tool did the bank use to access the above information?

   a) Surfing websites   [   ]
   b) Blogs   [   ]
   c) Purchasing information   [   ]
   d) P2P file sharing   [   ]

10. What are some of the barriers encountered by your bank in its increased use of e-commerce in business process management?

   a) Conservative organizational cultures   [   ]
   b) Industry cultures   [   ]
   c) Lack of industry standards   [   ]
   d) Fear of being left behind by competitors [   ]
   e) Others

   _____

   _____

10. Please indicate to which extent your bank uses or might consider to use the following in its business process management

E-Commerce and Business Process Management	Currently	Planned	Considering	Never
E-procurement				
E-auctions for procurement				
Retail e-payments (credit & debit cards)				
Retail transfer e-payments (ATM transactions, card-based e-money and cash withdrawals)				
Wholesalers e-payments (large value transfer systems, automatic clearing and credit transfers)				
Certificates for security of payment				
Electronic signatures				
Electronic ID				
Registration process for customers				
Electronic document management				
Collaborative tools for e-business				
Corporate solutions platforms (ERP, partner resources management- Pesa points, and knowledge management				
Mobile applications				
Metaresearch or advanced extraction aplications				
Open source applications				
Security layers				
Internet				
Virtual private network				
Payments				
Applications				
Security				
Online marketing				
Others(please specify)				

12. Please indicate the extent to which you agree or accept the following statements. (Effects of e-commerce to the bank's business process management) on a scale of 1-5 where by 1 rep, strongly agree and 5 rep strongly disagree)

Effects of E-commerce to Bank's Business Process Management	Strongly Agree	Agree	Neither agree nor	Disagree	Strongly Disagree
It has improved the image of the bank					
Effective business process management has caused great market share and more profits to the bank					
Effective business process management has caused me to work long hours to ensure that it is enhanced					
The bank asks me for my input to help make decisions on Effective business process management					
Besides profit making the bank should also be actively engaging itself for the good of the effective business process management					
Am familiar with the concept of Effective business process management and have heard of it.					

Others(please specify)

THANKS FOR TAKING YOUR TIME OUT OF YOUR BUSY DUTIES TO ANSWER THIS QUESTIONNAIRE

APPENDIX III: LIST OF COMMERCIAL BANKS IN KENYA

NO.	NAME OF BANK	LOCATION OF HEAD OFFICE
1	AFRICN BANKING CORPORATION	**NAIROBI**
2	AKIBA BANK LTD	NAIROBI
3	BANK OF BARODA (K) LTD	NAIROBI
4	BANK OF INDIA	NAIROBI
5	BARCLAYS BANK OF KENYA	NAIROBI
6	CFC BANK LTD	NAIROBI
7	CHARTERHOUSE BANK LTD	NAIROBI
8	CHASE BANK (KENYA) LTD	NAIROBI
9	CITI BANK N.A	NAIROBI
10	CITY FINANCE BANK LTD	NAIROBI
11	COMMERCIAL BANK OF AFRICA	NAIROBI
12	CONSOLIDATED BANK OF KENYA LTD	NAIROBI
13	CO-OPERATIVE BANK OF KENYA	NAIROBI
14	CREDIT BANK LTD	NAIROBI
15	DEVELOPMENT BANK OF KENYA	NAIROBI
16	DIAMOND TRUST BANK KENYA LTD	NAIROBI
17	DUBAI BANK KENYA LTD	NAIROBI
18	EQUITORIAL COMMERCAIL BANK	NAIROBI
19	EQUITY BANK	NAIROBI
20	FIDELITY COMMERCAIL BANK	NAIROBI
21	FINA BANK	NAIROBI
22	FIRST AMERICAN BANK	NAIROBI
23	GIRO COMMERCIAL BANK LTD	NAIROBI
24	GUARDIAN BANK	NAIROBI
25	HABIB BANK A.G.ZURICH	NAIROBI
26	HABIB BANK LTD	NAIROBI
27	IMPERIAL BANK LTD	NAIROBI
28	INDUSTRIAL DEVELOPMENT BANK LTD	NAIROBI
29	INVESTMANTS & MORTGAGES BANK LTD	NAIROBI
30	KENYA COMMERCIAL BANK	NAIROBI
31	K-REP BANK	NAIROBI
32	MIDDLE EAST BANK KENYA LTD	NAIROBI
33	NATIONAL BANK OF KENYA	NAIROBI
34	NATIONAL INDUSTRIAL CREDIT BANK LTD	NAIROBI
35	ORIENTAL COMMERCIAL BANK LTD	NAIROBI
36	PARAMOUNT UNIVERSAL BANK LTD	NAIROBI
37	PRIME BANK	NAIROBI
38	SOUTHERN CREDIT CORP.LTD	NAIROBI
39	STANBIC BANK KENYA LTD	NAIROBI
40	STANDARD CHARTERED BANK (K) LTD	NAIROBI
41	TRANS- NATIONAL BANK LTD	NAIROBI
42	EAST AFRICAN BANK	
43	FAMILY FINANCE	