

Modeling the Effects of E-Commerce Adoption On Business Process Management: Case Study of Commercial Banks in Kenya

Peterson Obara Magutu, Lecturer, University of Nairobi, School of Business, Department of Management Science,
Nairobi - Kenya: magutumop@uonbi.ac.ke

Richard Nyaanga Ongeru, Audit Manager, UKULIMA savings and Co-operative Society, Nairobi – Kenya:
richardnyaanga@yahoo.com

Haron Mwangi, IT Manager, Agricultural Finance Cooperation, Nairobi – Kenya: haronmwangi@yahoo.com

Abstract

The general objective of this study was to model the effects of e-commerce adoption on business process management. This was a census study on modeling 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) responded. This gave a response rate of 68.33% percent. It was found that the commercial banks in Kenya have Formalized Policy on E-Commerce and Internal Business Process Management. Also 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). Lastly, e-commerce is the complete set of processes that support commercial business activities on a network. The major effects of e-commerce on banks business process management are it has improved the image of the bank; besides profit making the bank have actively engaging themselves for the good of the effective business process management.

Keywords: e-Business, Business Process Management and Commercial Banks

1. 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 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 (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).

1.2 The Development of Commercial Banks in Kenya

The banking sector in Kenya dating back to 1689, provides financial services to the low-income households and micro and small enterprises 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 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 aspects of the burst bubble), and then again as taxpayers when the government ends up footing the bill.

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.

2.0 Some Literature Review

2.1 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. 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).

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 (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).

Today, it 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.

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.

2.2 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).

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. 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.

3.0 Statement of the Problem

The academic study of e-operations was inevitably embryonic, and as such there was a dearth of reported research studies examining the impact of e-commerce on internal business processes (Van et al., 2003). A lot of what had been written about e-commerce to date had either been predictive, that is, the 'how to succeed' type of publication. According to Daniel, (1999) much of the literature appeared to emanate from those with direct commercial interests, as consultants selling advice, computer hardware or software sales agents.

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 e-commerce 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 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.

A number of studies had 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. One of the local researches by Otieno (2006) concluded that internet banking is embryonic in Kenyan banks.

According to one of the local studies by Ochieng, (1998) 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'.

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. The general objective of this study was to model the effect of e-commerce adoption on business process management. This study therefore aimed at assessing the effects of adopting e-commerce on business process management in the commercial banks in Kenya.

4.0 Research Strategy

This study was conducted in using a survey strategy. A Descriptive research design was also used in this study. This called for a combination of quantitative and qualitative methods of doing 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.

The population of the study was on the forty-three (43) commercial banks incorporated and, or licensed to operate in Kenya (See Appendix I) and this constituted basically a census study. 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). For areas like this where there was a paucity of empirical research and existing theory seems inadequate, survey studies also offered a route to theory building (Eisenhardt, 1989).

The respondents were chosen using Simple and Stratified sampling. Stratified sampling was used primarily 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 46 banks in Kenya. They were then identified and interviewed on separate basis since all the respondents had the same probability of being selected to form the sample. In simple random sampling, a random sample was selected in such a way that every case in the population had an equal chance of being included in the sample. This was successfully used by Ojung'a (2005) in his survey of E-Commerce in Commercial Banks in Kenya.

The main instruments for data collection were questionnaires (See appendix II) and document analysis. The questionnaires were preferred in this study because those who were taking part in the study were literate and quite able to answer items asked adequately. The questionnaire items of the instruments had some overlapping elements. The questionnaire is concise and has a multiple of choices for the respondents to choose from. This type of questionnaire requires yes/no answers, filling in blank spaces, and ticking the applicable answers. The use of multiple questionnaires not only afforded greater depth and breadth of data, but also overcame the problems of unreliability associated with the use of single respondents (Bowman and Ambrosini, 1997). The questioning was based on the theoretical framework developed from the literature, to focus and bound the work (Miles and Huberman, 1994).

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. The questionnaires were administered by a research assistant using a drop and pick later approach and took approximately fifteen days to distribute and collect them. Each questionnaire took about ten to fifteen minutes to complete. Follow-up was done through a research assistant who assisted in the administering of the questionnaires. Once the filled questionnaires were collected they were prepared for analysis before being run through the SPSS package to provide an analysis of the findings. The results were then interpreted and documented.

The process of data analysis involved several stages. Completed questionnaires were edited for completeness and consistency. The data was then coded and checked for any errors and omissions (Kothari, 1990). Data analysis was based on the research questions designed at the beginning of the research. Frequency tables, percentages and means were used to present the findings. Responses in the questionnaires were tabulated, coded and processed by use of a computer Statistical Package for Social Science (SPSS) programme to analyze the data.

The responses from the open-ended questions were listed to obtain proportions appropriately; the response were then be reported by descriptive narrative. Descriptive analysis that is, the descriptive 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.

5.0 Data Analysis and Findings

4.2 E-Commerce Adoption on Business Process Management in Commercial Banks in Kenya

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

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. The respondents were asked to indicate whether they have ever heard of the concept of E-commerce and Internal Business Process Management concept; 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	Distribution	
	Frequency	Percentage
Yes	35	87
No	5	13
TOTAL	14	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 worth reason for the study on the effects of e-commerce adoption on business process management in the commercial banks.

The respondents were further queried on 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	Distribution	
	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	Distribution	
	Freq.	%
Business-to-Customer e-commerce	30	75.0
Business-to-Business e-commerce	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 in Commercial Banks in Kenya

With a formalized policy on e-commerce and Internal Business Process Management, there are many 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

The e-business activities can be focused to a number of dimensions. The respondents were asked to indicate 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	Descriptive Statistics	
	Mean	Std. Dev
Collaboration with business partners using ICT	2.1429	0.66299
Provision of other on-line and e-services, including e-marketing and advertising	2.4286	1.28388
Supply chain management using intranet	2.7143	1.13873
On-line buying (internet)	2.9231	1.03775
On-line selling (Internet)	3.2308	.72501

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 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 some 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.

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

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

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 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 is an 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	
	Mean	Std. Deviation
Legal advisors	1.6750	1.07148
News, services from chambers of commerce, Banking industry associations	1.9000	.87119
Personal contacts	2.3636	1.05529
Online sources (internet)	2.5714	1.33473

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

There are many 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 Barriers Encountered By the Bank in Increased Use of E-Commerce in Business Process Management

The Barriers Encountered	Distribution	
	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 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	
	Mean	Std. Dev
Retail transfer e-payments (ATM transactions, card-based e-money and cash withdrawals)	1.5000	.68773
Electronic ID	1.5000	.76229
Security	1.5152	.75503
Internet	1.5676	.86732
Retail e-payments (credit & debit cards)	1.6000	.70892
Electronic signatures	1.6923	.86310
Mobile applications	1.7429	.61083
Wholesalers e-payments (large value transfer systems, automatic clearing and credit transfers)	1.7742	.80456
Electronic document management	1.7879	.92728
Payments	1.7941	.80827
Registration process for customers	1.8333	.69693
E-procurement	1.8611	.79831
Certificates for security of payment	1.9310	.88362
Online marketing	1.9677	.87498
Collaborative tools for e-business	1.9714	.82197
Security layers	2.0000	.89443
Applications	2.1000	.95953
Metaresearch or advanced extraction applications	2.1304	.86887
Virtual private network	2.1429	.93152
E-auctions for procurement	2.2647	1.02422

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.

help make decisions on Effective business process management.

This is 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).

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	Descriptive Statistics	
	Mean	Std. Dev
It has improved the image of the bank	1.6098	.99695
Besides profit making the bank should also be actively engaging itself for the good of the effective business process management	1.6410	.77755
Effective business process management has caused great market share and more profits to the bank	1.7500	1.08012
Am familiar with the concept of Effective business process management and have heard of it.	1.9250	.91672
The bank asks me for my input to help make decisions on Effective business process management	1.9750	.76753
Effective business process management has caused me to work long hours to ensure that it is enhanced	3.0000	1.08604

Source: research Data

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 bank have 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 bank; everybody is now familiar with the concept of Effective business process management and the bank employees have got some input to

6.0 Summary and Conclusions

In line with the general objectives of the study, the following conclusions were arrived at which were further used to model the effects of e-commerce adoption on business process management

6.1 Conclusions

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 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 are 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 bank; besides profit making the bank have 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 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.

6.2 Modeling the Effects of E-Commerce Adoption on Business Process Management

The effects of e-commerce adoption on business process management can be modeled using a flow chart as follows:

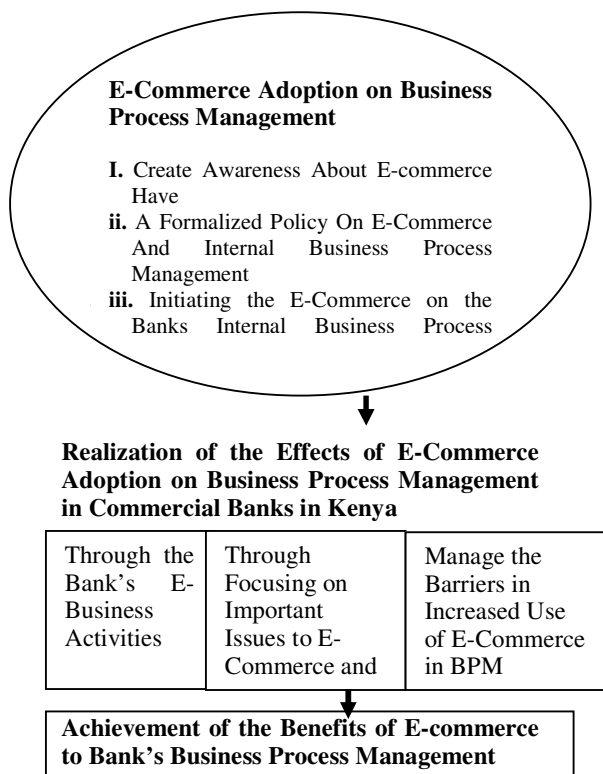


Figure 6.1: Modeling the Effects of E-Commerce Adoption on Business Process Management

There are three steps towards realizing the effects of e-commerce in the business process management.

The first step is the adoption of e-commerce adoption on business process management. This process management requires a number of things to be done: the first phase here is to create awareness about e-commerce as the buying and selling of goods and services on the Internet, especially the World Wide Web. In practice this term and a newer term. This is slightly followed by having in place a formalized policy on e-commerce and internal business process management which relates to key issues of e-commerce, which are as 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. Some of the key aspects associated with 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. The third phase of the first step is to initiate the e-commerce on the banks internal business process management: Be done by the management and board of directors. These are the key players in the adoption of E-Commerce on Business Process Management in the banks. The 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. This phase is followed by the last phase of focusing on 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 second step or level from the above e-commerce adoption on business process management is the realization of the effects of e-commerce adoption on business process management in a bank. With a formalized policy on e-commerce and internal business process management, there are many 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.

This is achieved through the following three key approaches: through the bank's e-business activities: The e-business activities can be focused to a number of dimensions. The banks should focus 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). This implies 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. Secondly, through Focusing on Important Issues to E-Commerce In Bank's Business Process Management: There are some many issues to e-commerce in business management. The banks' business management is not an exception. The most important issues to e-commerce in bank's business process management to a very great extent are 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. This implies that the key issues that affect banks business process management must be considered in the e-commerce policy. The e-commerce activities in the bank's business process management can be affected by legal troubles, and 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.

Lastly, through proper management of the barriers encountered by the bank in increased use of e-commerce in business process management: There are many barriers encountered by the bank in increased use of e-commerce in business process management. 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.

The last step, after the adoption and realization, the following Benefits of E-commerce to Bank's Business Process Management are achieved: 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 five major benefits and major effects of e-commerce on banks business process management are it can improved the image of the bank; besides profit making the bank can actively engaging themselves for the good of the effective business process management; effective business process management can cause 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.

6.3 Limitations and Suggestion for Further Research

There was time and financial constraint in carrying out the research. 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: 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. Literature availability: Due to poor equipped libraries on ICT and e-operations it took long to get the required data and literature.

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 o 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.

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

7.0 Acknowledgement

During the trying moments of conducting this study and its subsequent compilation, which was researched and written over a period, many developments took place. Some several key people and institutions therefore need to be acknowledged for their professional generosity and input, considering the time this research has taken to come to fruition. Firstly, I wish to acknowledge and thank, Stephen O. Nyamwange, whose incisive reading and constructive critiques of the paper in progress have been invaluable. Although not directly involved, prof. Isaac Mbeche, Principal CHSS, UON also needs a mention for his generosity to read and comments on various drafts at pivotal times throughout the formation of the Research paper. We also acknowledge the Commercial banks operating in Kenya (especially, the Operations managers) and all those other people who graciously gave their time to be interviewed/fill the research instrument.

References

Amar AD. 1999. E-business: selection and adaptation of products and services for e-commerce. *Mid-Atlantic Journal of Business* 35(1): 5–9.

Aosa Evans (1992): *Strategic practices in manufacturing firms in Kenya*. Unpublished thesis. University of Nairobi. Pp. 56-67

Armistead C, Harrison A. 1995. Business Process Reengineering: lessons from operations management. *International Journal of Operations and Production Management* 15(12): 46–59.

Armistead C, Machin S. 1997. The implications of business process management for operations management. *Industrial Management* 17(9/10): 886–899.

Avison D, Fitzgerald G. 1995. Information

Systems Development: Methodologies, Techniques and Tools. McGraw-Hill: Maidenhead.

Bateson, J.E. (1984), *Perceived Control and the Service Encounter*

Berry, L (1995), *On Great Service: A Framework for Action*, the Free Press, New York, NY.

Berry, L.L, Parasuraman, A., Zeithaml, V.A. (1994), "Improving service quality in America: lessons learned", *Academy of Management Executive*, Vol. 8 No.2, pp.32-52.

Berry, L.L. (1995), *On Great Service*, Free Press, New York, NY, .

Bhatt GD. 2000. An empirical study of the effects of information systems integration on business process improvement. *International Journal of Operations and Information Management* 20(11): 1331–1359.

Bitner, J.M. (2001), "Service and technology: opportunities and paradoxes", *Managing Service Quality*, Vol. 11 No.6, pp.375-9.

Bitner, M.J., Brown, S.W., Meuter, M.L. (2000), "Technology infusion in service encounters", *Journal of the Academy of Marketing Science*, Vol. 28 No.1, pp.138-49.

Bowman C, Ambrosini V. 1997. Using single respondents in strategy research. *British Journal of Management* 8: 118–131.

Bryman A. 1988. *Quantity and Quality in Social Research*. Unwin Hyman: London.

Carman, J (1990), "Consumer perceptions of service quality: an assessment of the SERVQUAL dimensions", *Journal of Retailing*, Vol. 66 No.1, pp.33-55.

Chan C, Swatman P. 2000. From EDI to internet commerce: the BHP Steel experience. *Internet Research* 10(1): 72–82.

Chaudhury, Abijit; Jean-Pierre KUILBOER (2002). *e-Business and e-Commerce Infrastructure*. McGraw-Hill. ISBN 0-07-247875-6.

Checkland P, Holwell S. 1998. *Information, Systems and Information Systems*. John Wiley: Chichester.

Childe S, Maull R, Bennett J. 1994. Frameworks for understanding business process re-engineering. *International Journal of Operations and Production Management* 14(12): 22–34.

Christopher M. 1992. *Logistics and Supply Chain Management*. FT-Pitman: London. Choi SY, Whinston AB. 2000. Benefits and requirements for interoperability

- in the electronic marketplace. *Technology in Society* 33–44.
- Cox, J., Dale, B.G.G. (2001), "Service quality and e-commerce: an exploratory analysis", *Managing Service Quality*, Vol. 11 No.2, pp.121-31.
- Dabholkar, P (1994), "Technology based service delivery", *Advances in Services Marketing and Management*, Vol. 3 pp.241-71.
- Dabholkar, P (1996), "Consumer evaluations of new technology-based self-service options: an investigation of alternative models of service quality", *International Journal of Research in Marketing*, Vol. 3 pp.29-51.
- Dale, B.G. (1999), *Managing Quality*, 3rd ed., Blackwell, Oxford.
- Daniel, E. 1999, "Provision of electronic banking in the UK and the Republic of Ireland," *International Journal of Bank Marketing*, 17, 2, pp. 72–82.
- Davenport T. 2000. The winner's circle. *CIO* June: 60–62.
- David Barnes, Matthew Hinton and Suzanne Mieczkowska, 2002: Developing a Framework to Investigate the Impact of E-commerce on the Management of Internal Business Processes, *Knowledge and Process Management* Volume 9 Number 3 pp 133–142
- Davis, F.D., Bagozzi, R., Warshaw, P.R. (1989), "User acceptance of computer technology", *Management Science*, Vol. 35 No.8, pp.982-1003.
- Debevoise, Neilson T (2005). *Business Process Management with a Business Rules Approach*. Business Knowledge Architects. ISBN 0-9769048-0-2.
- Eisenhardt KM. 1989. Building theories from case study research. *Academy of Management Review* 14(4): 532–550.
- Evans P, Wurster T. 2000. *Blown to Bits: How the New Economics of Information Transforms Strategy*. Harvard Business School Press: Harvard, MA.
- Forrester Research Inc. 2001. Forrester Findings—Internet Commerce. <http://www.forrester.com/ER/Press/ForrFind/0,1768,0,FF.htm> [accessed 17 July 2001].
- Goldzhammer, L.S. (1990), *Customer Driven*, Hutchison Business Books Ltd, London, .
- Gronroos, C. (2001), *Service Management and Marketing, A Customer Relationship Management Approach*, Wiley, Chichester,
- Grover V, Malhotra MK. 1999. A framework for examining the interface between operations and information systems: implications for research in the new millennium. *Decision Sciences* 30(4): 901–920.
- Gummesson, E (1991), *Qualitative Methods in Management Research*, Sage Publications
- Hammer M. 1990. Re-engineering work: don't automate, obliterate. *Harvard Business Review* July–August: 104–112.
- Hayes RH, Wheelwright SC. 1984. *Restoring our Competitive Edge: Competing through Manufacturing*. John Wiley: New York.
- Hedberg B, Dahlgren G, Hansson J, Olve N. 1997. *Virtual Organizations and Beyond*. John Wiley: New York.
- Jahnke B, Tijok C. 1998. Identifying IS support alternatives for business process re-engineering. *Knowledge and Process Management* 5(1): 41–50.
- Joseph, M, Joseph, B (1997), "Service quality in education: a student perspective", *Quality Assurance in Education*, Vol. 5 No.1, pp.15-21.
- Kassim, N.M. and Bojei, J. (2001), "Service Quality: gaps in the Malaysian telemarketing industry", *Journal of Business Research*, Vol.55, No.10, pp. 845-852.
- Knights D, Willmott H. 2000. In *The Reengineering Revolution: Critical Studies of Corporate Change*, Knights D, Willmott H (eds). Sage: London; 1–25.
- Lang, B., Colgate, M. (2003), "Relationship quality, online banking and the information technology gap", *International Journal of Bank Marketing*, Vol. 21 No.1, pp.29-37.
- Loeffler TR, Striemer R, Deiters W. 1998. A framework for identification and support of semi-structured business process. *Knowledge and Process Management* 5(1): 51–57.
- Lyons G. 1998. The role of information technology in enterprise re-engineering. *Knowledge and Process Management* 4(4): 268–277.
- Mahadavan B. 2000. Business models for Internet-based e-commerce. *California Management Review* 42(4): 55–69.
- Martilia, J., James, J (1977), "Importance-performance analysis", *Journal of Marketing*, Vol. 41 pp.77-9.

Meredith JR, Raturi A, Amoako-Gympah K, Kaplan B. 1989. Alternative research paradigms in operations. *Journal of Operations Management* 8 (4): 297–326.

Miles MB, Huberman AM. 1994. *Qualitative Data Analysis*. Sage: London.

Appendices:

Appendix I: A List of Commercial Banks

SN	Commercial Bank	Peer Group
1	African Banking Corporation Ltd	Medium
2	Bank of Africa Kenya Ltd	Medium
3	Bank of Baroda (K) Ltd	Medium
4	Bank of India	Medium
5	Barclays Bank Of Kenya Ltd	Large
6	CFC Bank Ltd	Large
7	Charterhouse Bank Ltd	Medium
8	Chase Bank (K) Ltd	Small
9	Citibank N.A Kenya	Large
10	City Finance Bank Ltd	Small
11	Co-operative Bank of Kenya Ltd	Large
12	Commercial Bank of Africa Ltd	Large
13	Consolidated Bank of Kenya Ltd	Small
14	Credit Bank Ltd	Small
15	Development Bank of Kenya Ltd	Small
16	Diamond Trust Bank (K) Ltd	Large
17	Dubai Bank Kenya Ltd	Small
18	East African Building Society	Medium
19	Equatorial Commercial Bank Ltd	Small
20	Equity Bank Ltd	Medium
21	Family Finance Building Society	Small
22	Fidelity Commercial Bank Ltd	Small
23	Fina Bank Ltd	Medium
24	Giro Commercial Bank Ltd	Medium
25	Guardian Bank Ltd	Medium
26	Habib Bank A.G Zurich	Medium
27	Habib Bank Ltd	Small
28	Housing Finance Ltd	Medium
29	Imperial Bank Ltd	Medium
30	Investment & Mortgages Bank Ltd	Medium
31	K-Rep Bank Ltd	Small
32	Kenya Commercial Bank Ltd	Large
33	Middle East Bank (K) Ltd	Small
34	National Bank of Kenya Ltd	Large
35	National Industrial Credit Bank Ltd	Large
36	Oriental Commercial Bank Ltd	Small
37	Paramount Universal Bank Ltd	Small
38	Prime Bank Ltd	Medium
39	Prime Capital and Credit Ltd	Small
40	Southern Credit Banking Corp Ltd	Small
41	Stanbic Bank Kenya Ltd	Large

42	Standard Chartered Bank (K) Ltd	Large
43	Trans-National Bank Ltd	Small
44	Victoria Commercial Bank Ltd	Small

Source: Central Bank of Kenya, Commercial Banks Directory (2007)

Appendix II: Research Questionnaire

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?

By Board of Directors []

By Management []

Government legislation []

By employees []

Other stakeholders (please specify)

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

Business-to-Business e-commerce []

Business-to-Customer e-commerce []

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. Where 1= Very Great Extent; 2 = Great Extent; 3 = Don't Know; 4 = Small Extent; 5 = Very Small Extent

Aspects of E-business Focus	Extent
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? 1= very important; 2= Important; 3= Not Important; 4 = not familiar

E-Commerce Issues
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

Currently, 2 = Planned; 3= considering; 4= Never

E-Commerce and Business Process Management	Extent
E-procurement	
E-auctions for procurement	
Retail e-payments	
Retail transfer e-payments	
Wholesalers e-payments	
Certificates for security of payment	
Electronic signatures	
Electronic ID	
Registration process for customers	
Electronic document management	
Collaborative tools for e-business	
Corporate solutions platforms	
Mobile applications	
Metaresearch or advanced extraction applications	
Open source applications	
Security layers	
Internet	
Virtual private network	
Payments	
Applications	
Security	
Online marketing	

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? Where 1= Very Great Extent; 2 = Great Extent; 3 = Don't Know; 4 = Small Extent; 5 = Very Small Extent

Sources	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?

Surfing websites []

Blogs []

Purchasing information[]

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?

Conservative organizational cultures[]

Industry cultures []

Lack of industry standards []

Fear of being left behind by competitors[]

Others

10. Please indicate to which extent your bank uses or might consider to use the following in its business process management. Where 1=

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	Agree
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.	

Copyright © 2009 by the International Business Information Management Association (IBIMA). All rights reserved. Authors retain copyright for their manuscripts and provide this journal with a publication permission agreement as a part of IBIMA copyright agreement. IBIMA may not necessarily agree with the content of the manuscript. The content and proofreading of this manuscript as well as any errors are the sole responsibility of its author(s). No part or all of this work should be copied or reproduced in digital, hard, or any other format for commercial use without written permission. To purchase reprints of this article please e-mail: admin@ibima.org