EXTENT AND CHALLENGES OF APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN MARKETING IN COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

This research project is my original work and has not been presented for examination to any other university.

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This research project has been submitted for examination with my approval as a University Supervisor

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DEDICATION

This work is dedicated to my parents who first set the schooling ball rolling, my sisters and brothers for their encouragement, financial and moral support and to my loving son for giving me the desire to work hard.

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This work could not have reached its logical completion without the distinguished assistance of devoted women and men. A few will however require special recognition.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This study concerns the extent and challenges of application of Information and Communication Technology in Marketing in commercial banks in Kenya. The study has two objectives, namely, to investigate the extent to which Information and Communication Technology has been applied in marketing by commercial banks in Kenya and to determine the challenges of applying Information and Communication Technology in the marketing function of banks in Kenya. The need for the study arose as a consequence of increased competitiveness among banks. This has seen banks increasingly adopt Information Communication Technology in their Marketing functions. Thus the motivation to assess the extent and challenges this new wave has occasioned.

The study employed a survey design. The population of study consisted of 43 banks headquartered in Nairobi. Since the population was small, a census study was conducted. Primary data was collected from 32 respondents. 19 respondents were working directly in the marketing function although they had customized titles. The remaining 13 respondents had wider functional roles in their banks, as indicated by their titles. Data collection was done using a questionnaire consisting of open-ended and closed-ended questions and five point Likert-type scales. Data analysis was done using descriptive statistics (consisting of frequencies, percentages, means and standard deviations) and factor analysis. The latter involved Principal Component Analysis.

Regarding the extent to which Information Communications Technology has been applied in marketing, the findings of the questionnaire indicated that credit contact information systems (system that provide credit information and manage credit history of customers) were the most widely used followed by computer software (application or general purpose software like spreadsheet or word processing). Delivering banking services was the marketing aspect where Information and Communication Technology was the most widely used, followed by processing of customer enquiries with bank account opening third. With respect to challenges, systems development overrunning budget constraints was seen to be the biggest challenge faced when implementing Information and Communication Technology in the marketing function of the banks.

From the literature, the use of Information Communication Technology in marketing was seen to be maturing, as previous piecemeal systems are replaced by integrated suites, which provide a unified view of the customer. This will enable firms to formulate holistic strategies that address all key dimensions of their customer's needs and wants, enabling them deliver superior performance. Key challenges that were seen to afflict Information and Communication Technology enabled Marketing Information Systems include a misalignment between Information and Communication Technology- and Marketing-strategies; and an inability to leverage existing Information and Communication Technology infrastructures to the marketing function.

This study recommends that for banks to compete effectively, there is need for more innovative use of ICT systems. This implies embracing concepts such as computer kiosks, distribution channel decision support systems and competitive tracking information systems which based on the findings registered a low level of usage. A more holistic incorporation of ICT across the entire spectrum of marketing activities would also help optimize on ICT utilization in the sector as well as increase the levels of marketing effectiveness and efficiency. In order to improve ICT implementation, the study recommends that overall, firm strategy be aligned well with both marketing strategy and ICT strategy.

CHAPTER ONE: INTRODUCTION

1.1 Background

Information Communication Technology (ICT) has become an attractive means of improving the process of gathering information (Soliman and Janz, 2004). ICT systems now typically facilitate effective operational control within all functions in banks, support the bank's strategic planning and decision making, as well as increasingly help in managing the bank's interface with its customers, suppliers and financial partners. There are different kinds of information systems for various banking functions. Included are Human Resource Information Systems, Accounting Information Systems, Expert Information Systems, Enterprise Resource Planning Systems, Planning Support Information Systems and Marketing Information Systems (MkIS).

A MkIS is a set of procedures and sources used by bank management to access everyday information about developments in the marketing environment. It is the composite of databases, computer applications, hardware and software necessary to collect/record, store, manage, deliver, present and manipulate data for marketing planning (Kotler, 2000). Marketing managers collect marketing information through the MkIS elements of market research, market intelligence and internal records (Jain and Saakshi, 2004).

Market intelligence entails reading books, newspapers and trade publications; talking to customers, suppliers and distributors; and meeting with other company managers to obtain information regarding competitor intelligence (Keegan, 2006). Marketing research entails obtaining objective information about market trends with the aim of positioning the bank's products in these markets to exploit changing demand patterns (Jain and Saakshi, 2004). Internal records on the other hand provide historical information about the firms operations and are a source of data about customers, suppliers and so on (Kotler, 2000).

Use of ICT in various information systems support functions in banks has been on the increase. Yano (2003) investigated factors considered in selection and implementation of

accounting information systems in companies quoted in the Nairobi Stock Exchange (NSE). Yano found out that the banks in the finance and investment segment. were concerned about the IS ability to capture and accurately report all the various diversified transactions that occur with banks.

Again. Cheruto (2003) highlighted the use of human resource information systems (HRIS) in human resource management in the banking sector in Kenya. Human resource information systems were found to be useful in monitoring employee performance. Information was captured during employee appraisals and coded onto the HRIS. This then made it easy to monitor the employees' performance over time. HRIS also made it easy to schedule training and promotion activities. Again. employee remuneration could be easily reviewed to determine skewness in reward systems and ensure equity. Also. the HRIS could easily update this information enabling management to plan for peak periods by hiring temporary labour.

Thus. in order to compete effectively banks need to conduct research activities whose objective will be to monitor the fats changing business environment. This will enable the banks to configure their operations to secure competitive advantage to efficient and effective response to changes in their competitive environment. Through ICT. banks would be able to optimize on these processes.

1.2 Overview of ICT and Commercial Bank Marketing

Financial institutions can be split into two main categories. Banking Financial Institutions (BFI) and Non-Bank Financial Institutions (NBFI). The former includes commercial banks that are regulated within the auspices of the Banking Act. Commercial banks function as financial intermediaries. taking financial deposits and lending funds to borrowers. Deposits collected are liabilities to banks. as banks pay interest on the deposits as well as paying back the deposits to creditors on demand. On the other hand. funds lent out are bank assets through which banks earn interest. commissions and management fees. In order to maximize their assets. banks need to find a good source of

deposits which is advanced to creditworthy borrowers: this is achieved through marketing activities.

Applying ICT in bank marketing offers benefits such as improved accuracy; provision of timely information: cost savings: increased competitiveness: encourageing a shift in the focus of marketing to strategic marketing by automating routine activities; making employees part of the marketing process; and reengineering the entire marketing function of firms (Kotler, 2000). When the marketing function is computerized, faster decision making can be carried out on product development, planning and administration. This is as a consequence of the fact that data can be much easier to store. update. classify and analyze (O'Connor and Galvin. 1997).

ICT is a major driver of change in the relationships between banking firms and their consumers. and is potentially, a major driver of the development of new products through the providers' internal information systems (Howcroft. 1993). ICT capabilities can be integrated to the MkIS. The MkIS in turn. informs the banks on consumer trends and provides vital information regarding customers' current needs and wants. Additionally, through MkIS, banks gain vital information on competitor activity. information that is vital in positioning and re-positioning businesses in the ever changing business environment. Computerization allows this information to be availed at speed. enabling banks to gain competitive advantage.

As will be enumerated later. various challenges come with the application of ICT in marketing. These include correspondence failure. interaction failure. process failure. expectation failure (Lyytinen and Hirschheim. 1987) and termination failure (Sauer. 1993). Other than the systems shortcomings. other challenges lack of strategic direction given by the business to IS investment decisions often reflected in a misalignment between ICT strategy and processes on the one hand and (marketing) business strategy and processes on the other: and inability to leverage existing ICT infrastructures to the marketing function. Additionally, the scope and depth of these challenges will vary from bank to bank owing to differences in scale of operations and strategy.

Applying ICT will thus facilitate market expansion. The extent of ICT application will however be subject to conditions such as the banks strategy, risk profiling, target market and the scope of its operations. Banks such as Citi exclusively target corporate clients while others like Barclays target both corporate and retail clientele. The extent of application of ICT for these two categories will thus differ owing to different information requirements. Additionally, banks that have bigger resources will be able to command greater ICT investments, all in all, it is then expected that different banks will exhibit different extents of application of ICT.

ICT has revolutionalized bank marketing activities. As seen, the extent of its use is incumbent on the banks context. Different banks will report different extents of usage that reflects their different strategies and scope. Again, owing to differences in the depth of ICT application, the kinds of challenges that banks will face will differ. Additionally, any new innovations normally come along with new challenges. In light of these concerns, this study sought to seek empirical information regarding the extent of ICT application and challenges ensuing from these endeavours.

1.3 Statement of the Research Problem

The global environment within which banks compete has become increasingly competitive. In a bid to sustain and gain market share, bank marketing managers have devised strategies aimed at countering competitors, spurring growth and ensuring that the banks remain market driven. To this end, they have resorted to applying ICT in marketing, through which they address information required for planning, implementation and control of all levels of decisions (Kotler, 2000). The MkIS is of strategic importance as it provides the link between the firm and the changing external environment. Thus an efficient MkIS is imperative due to the changing consumer needs and wants and the need to continuously develop product solutions that address these changes. Organizations that fail to respond to these changes risk becoming redundant and losing some, if not all of their market share and thus eventually closing down.

The extent of application of ICT in marketing will vary from industry to industry and even between firms. This is in part due to differences in complexity of different markets in these industries both locally and globally. On average, markets in the West require more sophisticated application of ICT in marketing as opposed to those in the developing world owing to higher levels of consumer awareness and competition. Additionally, differences in ICT application among firms due to differences in strategy also result in different information requirements thus resulting in differences in the extent of application of ICT in the marketing function among them (Kotler, 2000).

This creates contextual challenges that impose different demands on MkIS and marketing managers. The question that arises then is: to what extent has ICT been applied in marketing ICT in the marketing function in banks locally? Earlier, it was seen that in response to the changing market environment locally, banks in Kenyan have resorted to growing their domestic markets. This makes pertinent the issue of applying ICT owing to its efficacy in performance monitoring of geographically dispersed account relationships.

Additionally, owing to variations in application of ICT among firms occasioned by contextual differences, it is also expected that different firms would encounter different challenges in their endeavour to apply ICT in their marketing functions. The question then arises as to what challenges are faced by banks in Kenya in applying ICT in their marketing functions. Based on these two sets of arguments relating to extents and challenges, the purpose of this study was to assess the effectiveness of ICT as applied in the marketing functions of commercial banks in Kenya. Various literature on MkIS and management information systems (MIS) exists locally (Langat, 1996; Kinyanjui, 2001; Wachira, 2001; Cheruto, 2003; Yano, 2003; Ndulu, 2004; Ngure, 2004; Ochieng, 2004; Kiprono, 2006). None of these studies assessed the effectiveness of ICT in marketing in the banking industry which was the research gap that this study sought to fill.

1.4 Research Objectives

The objectives of this study were:

(a) To determine the extent to which ICT has been applied in marketing by commercial banks in Kenya.

(b) To determine the challenges of applying ICT in the marketing function of banks in Kenya.

1.5 Importance of the Study

The study will be of importance to several stakeholders as follows:

Marketing Managers: They will benefit from information that identifies ICT application extent and challenges. The extent of application in a firm will inform the marketing managers on the firm's effectiveness in collecting timely and relevant marketing information. A high extent is indicative of high competence while a low extent will point towards weaknesses in being able to accumulate market data. Firm management can then devise appropriate strategies to correct any anomalies. Regarding challenges, firm management will understand the kind of challenges that are faced in applying ICT in marketing decision making. They will then be able to formulate strategies to counter them or mitigate their effect. For example, employee 'technology fatigue' can be addressed through ICT training programs

External Stakeholders: These include investors, customers and so on who may be interested in putting their money in financial institutions that show an increasingly technological focus. This will also be the firms whose strategies are aligned towards using technologies that have been proven to deliver superior performance. Extent of application of ICT in MkIS will create investor confidence. Additionally, the level of challenges faced will provide indicators of the management quality as determined by its ability to design effective solutions to applied ICT issues. The stakeholders will also learn to appreciate service related difficulties faced by the providers which will create mutual satisfaction.

Consultants: These are professional elite who could be individuals as well as ICT consultants. Their role is concerned with assessing the effectiveness of ICT in the marketing function and giving guidance to management on how to optimize these systems. Extent of application information will enable then to identify application gaps existing in the MkIS of the respondent firms. This means that they can identify business opportunities for themselves. Knowledge of actual challenges faced enables consultants to help bank management design effective solutions to these challenges.

Researchers: The study will also form a basis for further research on ICT and marketing in the world of business and academic.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Chapter Two concerns reviewing existing literature in light of the research objectives. The literature will cover the internal structure of banks, look at the need for marketing and review marketing information systems. Next will be the role of ICT in enhancing the marketing function and challenges so arising. Finally, a compact summary of the chapter will be presented and the knowledge gap demonstrated.

2.2 Internal Banking Structure

Although the internal banking structure will vary from bank-to-bank, it is possible to identify commonalities that cut across the banks. All banks have an operations division, which is that function charged with processing of customer instructions and providing front office services. Depending on the size of the bank, certain areas may be merged or split to achieve efficiencies in operations. Most banks will also have a finance division, whose role (at least in part) is to prepare financial reports and central bank returns.

The human resources division is responsible for recruitment and development of staff. The technology division on the other hand interfaces across the banks and is charged with providing IT support to the other functions. Internal control and compliance divisions monitor the financial transactions to arrest fraud and ensure compliance with the law and auditing standards. Credit and risk functions entail assessing client credit risk, their risk profiles and their potential to generate revenues.

Service level agreements with customers such as transaction cycle times, depend largely on operations ability to meet these targets. Marketing will thus have to liaise with operations to ensure that promises made to customers are kept. Indeed, of all the departments, operations effectiveness will determine banks responsiveness to customer needs to a high extent. Operations failures will easily translate to marketing failures.

Failure to wire a funds transfer on time may translate in to lost business and customer dissatisfaction. Risk and credit also determines which customers to take on board and which ones not to. Customers with a poor credit rating will not be accepted by the Marketing people. Also the need to comply with the law requires Marketing to prepare Know Your Customer profiles that are examined by internal control and compliance for consistency. The marketing division of firms also deals with acquisition and retention of clients through offering solutions to their product and service needs.

2.3 The Need for Marketing

In these times of constantly shrinking budgets and increased competition, firms should continually adopt market driven strategies. A market-driven strategy allows firms to truly understand their markets and have effective marketing efforts. An effective marketing effort is based upon information, which can be used in terms of developing sound business strategies, increase return-on-investment, allow for more successful innovation, lead to better branding efforts, increase the effectiveness of promotional efforts and strengthen web marketing efforts (Leventhal, 2005).

Marketing aims to guide all people, functions and departments of a firm by its systematic appreciation of the needs, aspirations and costs of each. This, the marketing function can achieve through the MkIS elements of marketing research, marketing promotions and feedback loop mechanisms. This underpins the internal customer-supply chain, which is replayed in organisational interaction by every single employee (Ahmed and Rafiq, 2003).

The use of ICT in marketing is maturing, as previous piece-meal systems are replaced by Customer Relationship Management (CRM) suites, which provide a unified view of the customer. This will enable firms to formulate holistic strategies that address all key dimensions of their customer's needs and wants, enabling them to deliver superior performance. It is such firms that will in the future hold the key to improved success. Ritchie, Marshall and Eardley (1998) identify the 5 most important functions of information as reduction of uncertainty, control over operational performance through

defect signalling, communication, forecasting, historical data provision, performance levels and effects of decisions and reduction of complexity through upgrading the user's knowledge.

Four major stages of marketing that can be isolated will involve defining markets and understanding value, creating the value proposition and delivering and monitoring value. These are shown in Figure 2.3. Defining markets and understanding value is the process by which the firm identifies the markets it participates in and how these divide into segments. The stage involves four major steps, namely, the corporate mission and objectives; external market research; and internal data flowing from the "deliver value" and "monitor value" activities. The choice of markets will be guided by the corporate objectives as well as the resources and capabilities of the firm (Daniel et al., 2003).

Once each market segment has been defined, it is then necessary to understand what value the customers within each want. Value to the customer can be thought of using the four Cs: "cost", "convenience", "communications" and "consumer wants and needs". These translate the four Ps of marketing to the customer's perspective. For example, the customer is concerned with "convenience" of purchase, which influences how the organisation will "place" the product through distribution channels. This step also covers what the customer is prepared to give in exchange, in terms of price, loyalty and so on. Understanding competitor value positioning refers to the process of establishing how well the firm and its competitors currently deliver the value that the customer seeks. The outcome of these 3 processes is then used to determine the relative attractiveness of the different market segments and for positioning the firms offer (Daniel et al., 2003).

The create value proposition process involves choosing which market segments the firm will participate in, defining objectives, defining the price/value proposition, defining marketing strategies and estimating expected results. Each step of the "create value proposition" process has an important feedback loop to the earlier steps. For example, if the expected results from the final step do not meet the objectives earlier defined, then it may be necessary to iterate the price/value proposition and the marketing strategies until the objectives are likely to be met. The output from the "create value proposition"

process is a strategic marketing plan. Even when no plans are produced, though, the organisation is implicitly taking decisions about its offer to customers and how this offer is to be communicated and delivered (Gosney and Boehm, 2003).

The third stage, to deliver the value identified, has as its input, the marketing plan that was developed. It entails delivering the product or service and communicating value. Communicating the offer can be generalised as the design and implementation of marketing communication programmes. The marketing communication programmes will require monitoring (Luch and Rubin, 2005).

The "monitor value" stage examines the value delivered to the customer and the value received in exchange. The organisation monitors whether the value customers actually require corresponds to the analysis of customer requirements carried out in the "understand value" stage. Value delivered is also monitored against the value proposition defined during the "create value proposition" stage. The information for these will be comprehensively addressed by market research (Kotler and Keller, 2006).

The organisation will also want to monitor the value it receives against the marketing objectives defined during the "create value proposition" stage. This stage of evaluation is the one that most organisations focus on, often through monthly sales figures, to the exclusion of monitoring the other areas of value. Finally, organisations can monitor how the value actually delivered and communicated to customers compares with the marketing strategies incorporated in the marketing plan (Daniel et al., 2003). These four key stages are effectively implemented by making use of information obtained from the marketing information system.

2.4 Marketing Information Systems

The MkIS consists of people, equipment and procedures to gather, sort, analyse and distribute needed timely and accurate information to marketing decision makers (Kotler et al., 2005). The MkIS begins and ends with marketing managers. It first interacts with them to assess their information needs; then develops the needed information from internal records, marketing intelligence activities and the marketing research process

followed by information analysis to make the information useful and finally, distributes the information to managers in the right form at the right time to help them in marketing planning, implementation and control.

Internal Records consists of information gathered from sources within the company to evaluate marketing performance and to detect marketing problems and opportunities. For example, the finance functions that prepares financial reports keeps detailed records of sales, order, costs and cash flows. Information from internal records is limited in that since it was adapted for other purposes, it may need re-interpretation in order to fulfil the role of making marketing decisions. Also, a great deal of information is produced across the company and keeping track of it is difficult and the MkIS must collect, process and organize this information to make it easier to access (Pillai and Bagavathi, 2007).

Marketing intelligence is everyday information about developments in the marketing environment that informs marketing decisions (Jain, 2006). The marketing intelligence system determines the intelligence needed, collects it from the environment and delivers it to the marketing decision makers. Marketing intelligence comes from the employees and external sources such as customers. Information from competitors comes from their published annual reports and also from what they say in business publications and at trade shows. The company can also watch what competitors do through buying and analyzing their products or monitoring their sales levels.

Marketing research is the function linking the consumer, customer and public to the marketer through information that is used to identify and define marketing opportunities and problems, to generate, refine and evaluate marketing actions, to monitor marketing performance and to improve understanding of the marketing process (Gosney and Boehm, 2003). The market research process consists of four key steps: defining the problem and research objectives, developing the research plan for collecting information, implementing the research plan and interpreting and reporting the findings. The problem will usually be an observation linked to the business activities that result in poor performance of the firm e.g. declining sales or profitability. For better performance the MkIS, it is necessary to incorporate ICT into its various components.

The impact of ICT on business has been so dramatic and pervasive that it is no longer appropriate to view ICT as an external agent causing change to, say, the structure and co-ordination of organizations. To consider ICT as a separate area of management, to be studied in its own right, is to totally misunderstand its impact. The use of information systems is now embedded in organizations to such an extent that a more appropriate way of viewing the inter-relationships between ICT and marketing theory is to conceptualize marketing primarily as an information-handling problem (Holland and Naudé, 2004).

This is especially true, since most of the physical aspects of coordinating economic activity have been largely solved. Contemporary ICT-enabled marketing innovations mean that current marketing paradigms are inadequate in their explanatory and predictive powers. Examples of these new modes of operating include the virtual organization (Lockett and Holland, 1996), Web-based marketing (Loebbecke and Jelassi, 1997) and the emergence of one-to-one marketing strategies typified by American Express' relationship billing service (Berry, 1994).

When marketing tasks such as customer analysis and the development of marketing strategy are viewed as information-handling problems, it becomes much easier to understand and interpret the role of ICT because the marketing task is expressed in information terms which can be closely related to the development of new ICT-based marketing systems (Holland and Naudé, 2004). The problem of analysing the benefits of ICT investment in marketing also becomes more intuitive to marketing managers because the impact of the ICT marketing system can be measured in terms of how it improves the information processes that support key marketing tasks.

Any cursory examination of contemporary problems facing marketing managers reveals that a significant trend is that business activity is becoming more information intensive and that the physical handling problems of extracting raw materials, production and distribution are becoming less important than the information exchanges that underpin them. Even in heavy industries the information handling costs are outstripping the physical ones. For example, recent research suggests that information handling costs in the automotive industry account for 80% of the total costs. There are a number of reasons

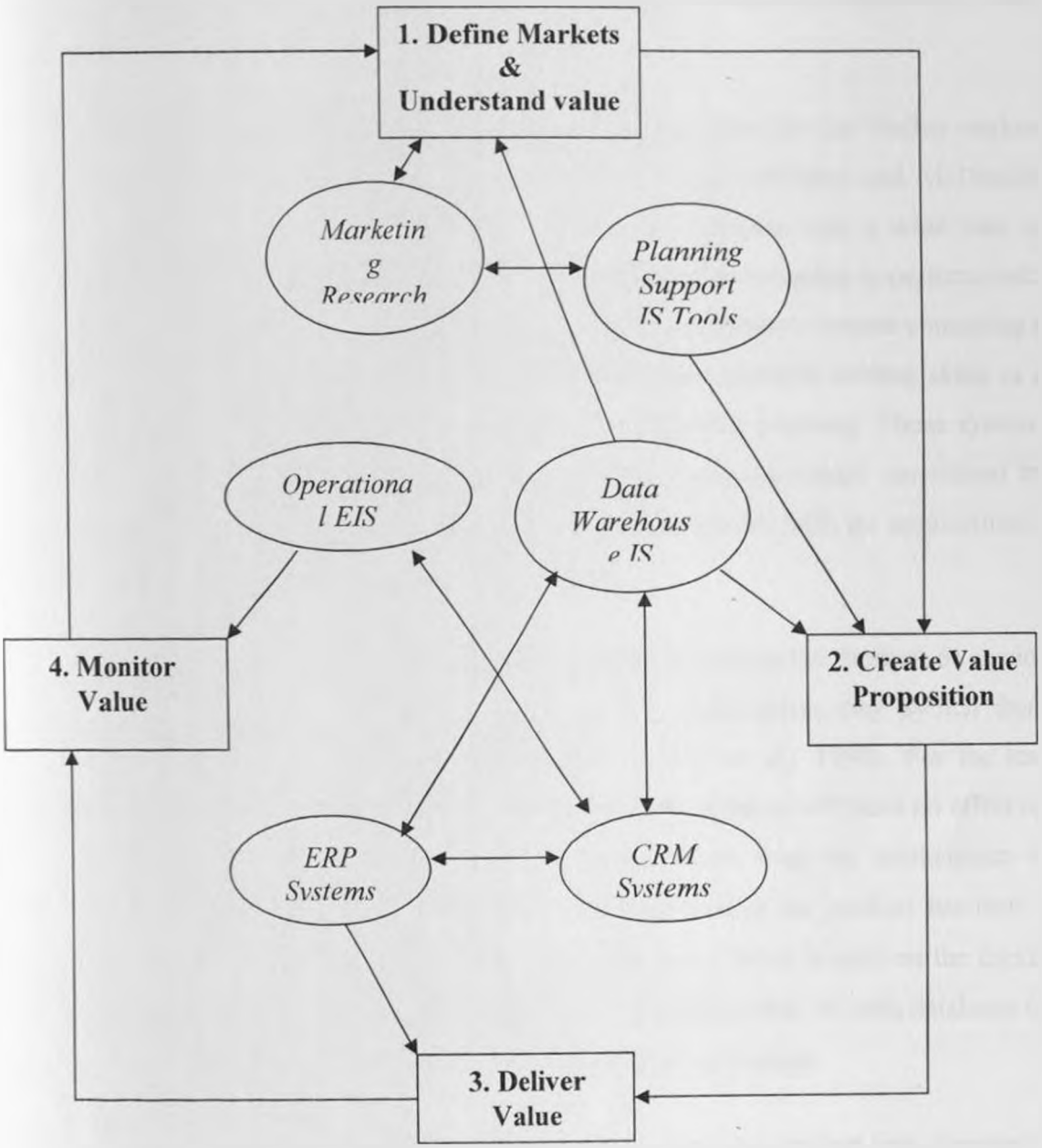
for this, but when one considers innovations in design and manufacturing such as CAD, simulation and automated production, and the associated huge investment in ICT to support these innovations, the figures become plausible (Rayport and Sviokla, 1995).

As seen from Figure 2.3 (page 15), four major stages of marketing that can be isolated will involve defining markets and understanding value, creating the value proposition and delivering and monitoring value. The various marketing tasks under these headings cover the whole lifecycle of a product or service from inception to delivery and ongoing servicing of a particular market. The focus is on the target market and the associated activities that bring the organization's resources in line with the requirements of the customers and their expected behaviour.

ICT in the marketing function can be used to support the market and value definition stage through market analysis and data collection facilitated through data aggregation and analysis tools. The market research function that falls under this category will be greatly aided by electronic information collection tools. The key resources here are Data Warehouses. These are reservoirs where the information-deliver and monitor value states is stored and used as a basis for marketing decision-making (O'Connor and Galvin, 1997). Market Research Aggregation/Analysis is where specific IS support may be provided for market research data, aggregating this across data sources and providing facilities to analyse it.

Other sources of intelligence on customer needs and behaviour are causal models, which examine behavioural data to deduce such information as advertising effectiveness. The create value proposition will involve tasks like R&D and New Product Development (NPD). IS enhance planning support for R&D broadening the planning procedures to consider more creatively the range of possible product-market segments that could be addressed, and which of these are of sufficient attractiveness and fit with firm skills to be sensible targets. IS support for NPD is not focused exclusively at the R&D stage but

Figure 1: Information Systems Support for Marketing



Source: Daniel, E., Wilson, H. and McDonald, M. (2003), Towards a map of marketing information systems: an inductive study, *European Journal of Marketing*, **37**(5/6).

instead links various stages of the marketing process. IS can be of benefit to banks through making data on Research and Development (R&D) projects and ideas widely available. In this case, information on the status of R&D projects had in the past been provided to marketing staff only at particular milestones in the project, rather than being

available continuously. It was envisaged that IS could improve the communication between these two groups and hence act as an enabler to make the relationship more effective.

Planning Support Tools may be used to provide decision support for the "define markets and understand value" and "create value proposition" stages (Wilson and McDonald, 1996). Examples are Expert Systems (ES), which are programs with a wide base of knowledge in a restricted domain that use complex inferential reasoning to perform tasks which a human expert could do. In other words, an ES is a computer system containing a well-organized body of knowledge which emulates expert problem solving skills in a bounded domain of expertise. These are useful for marketing planning. These systems reflect ICT capability in widening its focus to include tasks previously considered by most practitioners as too unstructured or creative to be compatible with the application of IS, such as idea generation and strategy formulation.

The deliver value stage in Figure 1 was seen to entail delivering the product or service and communicating value. With the advent of ICT, distribution may switch from channels to media, and time becomes instantaneous (Pitt et al., 1999). For the less tangible products and services that can be easily digitized, distance will have no effect on costs. No longer will location be the key. Business moves from the marketplace to marketspace and uses "real-time" marketing. Information about the product becomes a part of the product, but is separated from the product itself. What is sold on the digital media is digitized product, not the physical product. Because of this, IS with databases of customer information become a new source of competitive advantage.

Value delivery shifts from mass scale production based on the product line changes to mass customization based on the combination of ICT and an operating system. Hart (1995) defines mass customization as the use of flexible processes and firm structures to produce varied and often individually customized products and services at the low cost of a standardized, mass-production system. Through offering customized products and services, firms can realize one-to-one marketing to satisfy varied needs and wants. Firms

will pay greater attention to the customer life cycle than to the product life cycle. Every design sold is based on customer dialogue and combines the service with product.

Due to IS, promotion is changing in the following ways. First, realizing direct dialogue with customers and companies can keep loyalty by making use of virtual communities. Second, establishing brand image by offering information and interactive communication rather than creating brand image by advertising and promotion (Deighton, 1996). Third, from broadcast to narrowcast. The objective of advertising changes from creating a brand image in the broad target market to introducing a product or service to individual customers, which can reduce the waste of advertising expense.

Enterprise Resource Planning (ERP) Systems are a variety of operational systems that typically centre on the key operational tasks of supply, operations, distribution and logistics and support service (Wagle, 1998). Examples include Electronic Data Interchange (EDI), a term used to describe the technology by which marketing documents (such as orders, invoices and so on) are transmitted electronically. EDI benefits include low cost; reduction in paper dependency; improved customer service; reduction in mistakes and improved competitiveness.

CRM Systems support and integrate the customer-facing functions such as marketing, sales and customer service (Hewson, 1999). These enable customer profiling through providing information on the recency, frequency and size of purchases, identification of typical customer groups, computation of customer lifetime values etc. As companies procure large volumes of customer related data, they can perform customer management efficiently using data warehousing, data mining and other information technologies.

In the monitor value stage, Operational Executive Information Systems (EIS) (O'Connor and Galvin, 1997) are Management Information Systems (MIS) where operational data is summarized for purposes of management information. These present management information in the form of charts, tables and reports. These are classified as data oriented marketing applications as they focus mainly on data aggregation, analysis, summarization and presentation to aid in monitoring value.

Monitoring value enables segmentation of the market. The concept of segmentation is crucial as a means to maximize profits. It is imperative that "better" customers are separated from others. The application of segmentation and predictive modelling is an important topic in database marketing (Verhoef et al., 2002). Subsystems in MkIS support new product evaluation, forecasting demand or sales, product profitability, pricing strategy, analyzing profits, promotion strategy, computing budgets, selecting advertising media, assigning sales representatives, approving customer credit, location of facilities, routing of salesperson or deliveries and computing reorder points.

2.5 Challenges of Applying ICT in the Marketing Function

Despite cases of successful ICT and IS development projects, various estimates show persistently that half of all systems fail. A number of models for understanding IS failures have emerged. One study examines failure in terms of ignoring a number of organisational behaviour factors arguing for the importance of organisational variables. Lyytinen and Hirschheim's (1987) comprehensive study has mapped the following concepts of IS failure:

Correspondence failure: The IS fails to meet its design objectives; *Interaction failure*: The users maintain low or non-interaction with the IS; *Process failure*: The IS overruns its budget or time constraints; and *Expectation failure*: The IS does not meet stakeholders' expectations. To these types Sauer (1993) adds *Termination failure* (systems outage), when developmental or operational activities stop, leading to stakeholders' dissatisfaction due to the limited provision of service by the IS.

In ICT in the marketing function, correspondence failure arises when the ICT in the marketing function fails to provide marketing management with the right information. Despite the information overload available, what managers need is relevant information and thus, ICT in the marketing function that are designed to distil information and only feed managers with what they need to make effective decisions. Apart from expectation and termination failure concepts, the other types adopt a highly rational view of IS failure that is limited in capturing the complexity of the phenomenon and thus providing

inadequate learning. However, these types of failure are useful in showing surface manifestations of deeper organisational pathologies (Goulielmos, 2003).

Other reasons cited for IS failure include a lack of strategic direction given by the business to IS investment decisions (Earl, 1989), often reflected in a misalignment between ICT strategy and processes on the one hand and (marketing) business strategy and processes on the other (Henderson and Venkatraman, 1993); inability to leverage existing ICT infrastructures (to the marketing function) (Weill, 1993); 'paving the cow paths' rather than capitalizing on innovative ways to organize work that technology provides (Davenport, 1993); the relationship 'gap' between the IS function and rest of the business (Peppard and Ward, 1999).

Ndulu (2004) in a survey of the causes of IS failure among Micro Finance Institutions (MFIs) in Kenya identifies lack of adequate IT training among staff and lack of a formally documented IT strategy to which the IS implementation is aligned as some of the factors that influence IS failure. MFIs also tend to suffer from an emphasis on technology rather than its information value. This results in unnecessary investments in IT which does not complement the business needs. Further, Ndulu observes that most MFIs in Kenya lack adequate resources make supplementary investments necessitated by rapid technological changes rendering current systems obsolete.

Organisational stakeholders are important in determining what constitutes success or failure, and as such these models view IS development as socio-technical in nature. The socio-technical viewpoint in IS failure recognizes that problematic situations exist within the organisational context. Interaction failure then becomes a result of poor user attitude towards the ICT in the marketing function. This may occur due to resistance to change, IS illiteracy or poor information analytical skills. Change must also be dealt with from an application perspective. Pitman (1994) indicated that successful change depends on five critical factors, including visible management support and commitment, preparation for change, encouraging participation, supporting rewards and effective communication.

In support of this, Krovi (1993) contends that, in addition to technical proficiency, the success of strategic IS largely depends on how well firms implement such systems. Introducing any form of IS changes an organization to some extent, whether in its business, processes, culture or mission. Numerous businesses may fail in implementing MkIS owing to ignorance of organizational change. To reduce resistance to change, the MkIS implementation process should not only encompasses both business strategy and management control, but also consider change management.

This is further supported by Kinyanjui (2001) who, in a survey of work values and the use of information systems among selected business firms in Kenya, observes that organizational culture is a determinant the success of IS in these firms. Kinyanjui sees such values as ranging from employee perception of the impact of IS on their work (improvements, retrenchments) to management disposition and leadership (top management commitment to IS application). Kiprono's (2006) survey of challenges facing users of computer based information systems at the National Hospital Insurance Fund (NHIF) revealed the existence of an ageing workforce not fully committed to embracing IT directed change as a key challenge.

Implicit support for the notion of a failure system can be found in Turner (1994) who argues that pre-failure signals accumulate until a crisis turns them into a failure. The factors responsible for failure are significantly social, administrative and managerial, rather than technical. Preconditions for failure, he terms as "pathogens" involve a multiplicity of minor causes, misinterpretations and miscommunications that are not resolved until they emerge as failure. In the case of the ICT in the marketing function, such minor causes may include a MkIS that fails to consider contextual variables such as organizational culture. Such MkIS lend information that is applicable in other social contexts, making it hard for marketing managers to formulate relevant decisions.

User interaction may also be influenced b y ergonomic factors. Ergonomics is the science of redesigning the workplace to meet the safety and health needs of the worker in order to prevent ailments such as RSIs, which are of say, the wrists and fingers. Ergonomics takes a holistic approach to the relationship between the work environment and human factors.

It aims to improve job design to minimize monotonous and repetitive tasks, which may contribute to fatigue and stress. Wachira's (2001) study on ergonomic factors to consider in IS application revealed that users may be concerned about eye safety ("monitor glare") and Repetitive Strain Injury (RSI) caused by repeated use of hardware tools (e.g. mouse). To encourage user interaction, such factors need to be considered by implementing tools such as anti-glare visors and system time-outs.

ICT in the marketing function may also be prone to attacks by hackers, cyber criminals and insiders who seek to steal from or damage an organization. Individuals planning an attack have a wide array of attack options. Erasing customer data bases, planting virulent viruses or rifling through strategy correspondence are just a few of the attacks that may be directed at the victim's ICT system. The use of ICT has become more widespread and today's organizations rely on IS the extent that it would be impossible to manage without them. The growth of e-business and e-commerce applications also presents abundant opportunities for unauthorized access to IS (Brooks et al., 2002).

Although ICT provides a powerful vehicle for processing information, the focus on technology has often shifted the emphasis away from the real issue of exploiting information for value creation to the delivery of technology. In general, ICT has no inherent value in itself; for example, just having PCs on employees' desks does not confer any value to the organization. This value must be unlocked and it is only business managers and users who can ensure that this occurs (Peppard et al., 2000).

In short, the 'T' of IT has become the focus of attention rather than the 'I'. Unfortunately, information is a Cinderella with few champions while the 'T' has lots of mercenaries (the technology supply industry IS functions and outsourcing vendors, to name but a few). Yet the irony is that information is a factor of production (Bell, 1981) while technology is a cost of doing business. Organizations must redress the balance in favour of the 'I' if value is to be created (Peppard et al., 2000).

Meeting these opportunities and challenges requires technology infrastructures directed toward flexibility, openness and interconnectivity. It simultaneously entails a degree of

local autonomy and control on localized service provision, as well as the agility to connect to external parties as needed. On the other hand, existing legacy technical and organizational infrastructures for banks are overwhelmingly closed, monolithic and inward directed. The legacy architectures make it difficult for these organizations to modify, develop and integrate their existing applications to meet the opportunities and challenges arising from deregulation, globalization and the changing demands of the market (Kumar and van Hillegersberg, 2004).

Recognizing the imperative to generate value from IS, organizations often engage in an examination of their IS function and many have looked towards the re-engineering of IS processes (Brown and Magill, 1998). However, such re-engineering effort generally only addresses the supply of technology into the business: the IS function becomes better at building and operating applications. Yet, these applications may only be contributing marginally to the achievement of organizational goals and objectives as the focus is on building and operating applications and technology rather than delivering significant business benefit (Peppard et al., 2000).

Developing measures of effectiveness has long been a focus of Management Information System research (Delone and McLean, 1992). Such techniques as system usage (Ein-Dor and Segev 1982), cost/benefit analysis (King and Schrems, 1978), information economics (Maish, 1979) and critical success factors (Zahedi, 1987), have all been used with mixed results to gauge the contribution that information systems and the information services function make to firms and individuals. These same concerns are witnessed in the adaptation process, whereby MIS are used in enhancing given functions such as the marketing function.

Also, implementing database and software systems for customer information management can be costly, difficult and time-consuming. Research is needed to understand whether and how, managing ICT in the marketing function in a particular strategic marketing context provides a sustainable competitive advantage. Again, there is the question of whether the organizational IS learning curve will lead to sustainable competitive advantage (Hult et al., 2000).

The efficacy of ICT in the marketing function is also determined by structural and cultural organizational capabilities. Structural capabilities include having a team and systems orientation, while cultural aspects of the organization's ability to learn derive from how open the culture is and various qualities of its leadership (Deshpande, Farley and Webster, 1993). Cultural and structural capabilities undoubtedly influence an organization's ability to manage MkIS.

2.6 Summary of the Literature Review

From the literature, we see that the extent of the application of Information Systems in marketing is maturing, as previous piecemeal systems are replaced by integrated suites, which provide a unified view of the customer. This will enable firms to formulate holistic strategies that address all key dimensions of their customer's needs and wants, enabling them deliver superior performance. Marketing research has benefited from the high quality data generated from the computerized data collection and aggregation tools; marketing intelligence has also been enhanced by the ease of collecting online primary data that improves decision making; and finally, internal records management is more versatile and such records easily accessed.

Examples of challenges that afflict ICT in the marketing function include a misalignment between ICT- and marketing-strategies; inability to leverage existing ICT infrastructures to the marketing function; a lack of innovative application of the IS capabilities; and poor interpersonal relationship between the ICT and marketing personnel. The computerized IS may also fail to provide managers with the relevant information owing to 'lag' or 'system outage'. Lack of alignment between ICT- and marketing strategies may deemphasize the information value of IS, leading to costly, unnecessary investments in hardware. Again, IS are costly to implement and there is always the risk of cost overruns. Other challenges include user rejection, information security issues and poor management of the change occasioned by IS introduction which may aggravate poor user attitude.

Given the aforesaid, extent to which different banks adopt the different Information Communication Technologies in their operations will vary. This arises from differences in the nature of the banks operations. Banks that emphasize on Corporate Banking will be expected to have less developed CRMs than those with Consumer Banking Divisions. Corporate Banks also adopt different marketing strategies compared with banks involved in Consumer Banking. These differences in marketing strategies will lead to different configurations of ICT in bank marketing activities. Additionally, challenges faced by the banks will also differ owing to these contextual differences. Lack of knowledge about the extent of application of ICT and subsequent challenges faced by the have motivated the need for this study.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

The study employed a survey design. The survey was believed to be the best given the observations by Kotler and Armstrong (2001) who observe that this method is the best suited for gathering descriptive information: where the researcher wants to know about people's opinions concerning one or more variables (in this case, ICT usage in the marketing function) through direct query. This research sought to find out bank managers opinions regarding the extent of ICTs usage in the marketing function and challenges facing their application. The study could have adopted a case methodology of one bank, but this was felt to be too risky given the possibility that the single entity might not capture the entire spectrum of ICT as applied in the marketing function. Again, the risk of the bank not responding would have been too high.

3.2 Population of Study

The population of study was composed of all banks registered in the Banking and Financial Institutions Directory as at 31st March 2008. This was the most current listing of players in the commercial banking sector. It was a total of 43 banks (Appendix 3). Since the population was small, a census method was used.

3.3 Data Collection Method

Primary data was collected by means of a questionnaire (Appendix 2). This was administered to the respondents using the "drop and pick later" method. The respondents were Marketing Managers. The instrument was composed of open-ended questions, closed-ended questions and five point Likert-type scales. The questionnaire was divided into 3 sections; Section 1 captured bio-data about the respondent organizations and the respondent's themselves. Section 2 captured information relating to the extent of application of ICT in marketing and Section 3 obtained information relating to the

challenges facing their application. One questionnaire was submitted per respondent bank.

3.4 Data Analysis Technique

Analysis of the data relating to respondent of questionnaire (Section A of questionnaire) and that regarding the first objective of the research (Section B of questionnaire) was done using descriptive statistics, mainly means, standard deviations, frequencies and percentages. According to Mugenda and Mugenda (1999) descriptive statistics enable meaningful description of a distribution of scores or measurements using a few indices or statistics. Mean values informed the researcher on the expected score or measure from a group of scores in a study. Standard deviations informed the analyst about the distribution of scores around the mean of the distribution. The frequency distribution and percentages recorded the number of times a score occurred and the extent of occurrence of a particular observation respectively.

Data relating to section 3 of the questionnaire relating to challenges was evaluated using Principal Component Analysis (PCA). Davidson (1996) notes that the aim of Principal Component Analysis is data reduction by extracting and grouping together the key variables that operationalize those measures used to assess challenges. From this, it was possible to assess those aspects of challenges that were most dominant in influencing application of ICT in the marketing function in banks. It was then possible to adequately model the banker's perception of the highest degree challenges by looking at only those statements.

CHAPTER FOUR: FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter discussed the findings of the research in relation to investigating the extent to which ICT has been applied in marketing by commercial banks in Kenya and the challenges of applying ICT in the marketing function of these banks. In order to attain these objectives, survey study was conducted. The research instrument used was a questionnaire administered by the researcher. The questionnaires were mostly well filled albeit some had blanks left. The response rate was 74.4%. This was considered satisfactory in line with Mugenda and Mugenda's (1999) observation that a response rate of 50% is sufficient form purposes of statistical analysis.

4.2 Profile of the Respondents

Table 1 Functional Titles of the Respondents

Title	Frequency	Percent
Assistant liability manager	2	6.3
Assistant Manager	2	6.3
Credit officer	2	6.3
Head sales and marketing	2	6.3
Investment officer	3	9.4
Manager	2	6.3
Marketing assistant	4	12.5
Marketing manager	2	6.3
Marketing officer	5	15.6
Marketing team leader	2	6.3
Relationships manager	6	18.8
Total	**32**	**100.0**

Table 1 lists the functional titles of the respondents. Different banks had different titles for the various respondents. We can conclude that the marketing function in different banks are differently configured going by the respondent titles. Going by the fact that the study sought out variances in ICT application in marketing, this observation will be evident in later findings.

Table 2 Years Worked in Marketing

Years	1	1.5	2	3	5	9	15	Sub-Total	Missing	Total
Frequency	6	2	7	4	6	2	3	30	6.3	32
Cumulative Freq.	6	8	15	19	25	27	30			
Percent	18.8	6.3	21.9	12.5	18.8	6.3	9.4	93.8	6.3	100.0

At least 50% of the respondents had cumulative experience of over 2 years in the marketing function. Those would give the responses that required marketing depth of response.

Table 3 Age Ranges

Age Range	Frequency	Percent
25 - 35	21	65.6
36 - 45	11	34.4
Total	**32**	**100.0**

Sixty five point six percent of the respondents were in the age range of 25 to 35 years while 34.4% were in the range of 36 to 45 years. Thus, majority of the respondents were relatively youthful.

Table 4 Respondent Qualifications

Qualifications	Count	Percentages
Bachelors Degree in Marketing	14	35.0
MBA Marketing Major	17	42.5
Chartered Institute of Marketing	9	22.5
Totals	**40**	**100**

Thirty five percent of the respondents had a Bachelors degree in marketing. 17% had MBAs with marketing as the major while 22.5% had Chartered Institute of Marketing qualifications. From the manner in which the findings were structured, it is difficult to ascertain whether all the respondents had one form of marketing qualification or the other.

Table 5 Gender

Gender	Frequency	Percent
Male	11	34.4
Female	15	46.9
Sub-Total	26	81.3
Missing	6	18.8
Total	**32**	**100.0**

From Table 5, 34.4% of the respondents were male while 46.9% were female.

Table 6 Shareholding Composition

Shareholding	Frequency	Percent
Wholly local	13	40.6
Part local/part foreign	14	43.8
Wholly foreign owned	5	15.6
Total	**32**	**100.0**

Forty point six percent of the firms were wholly locally owned, 43.8% were part local/part foreign, while 15.6% were wholly foreign owned. Given the differences in strategy based on country of origin, responses will be skewed to reflect this finding.

Table 7 Ownership

Ownership	Frequency	Percent
Private owned	21	65.6
Part private/part public	9	28.1
Public owned	2	6.3
Total	**32**	**100.0**

Sixty five point six percent of the firms were private owned, 28.1% were part private and part public while 6.3% were public owned. Again, responses will reflect the differences in ownership e.g. privately owned banks are expected to differ widely from publicly owned ones.

Table 8 Bank Branches

Number	1	2	3	4	7	8	10	11	37	Missing	Total
Frequency	2	3	5	6	2	2	5	2	3	2	32
Percent	6.3	9.4	15.6	18.8	6.3	6.3	15.6	6.3	9.4	6.3	100.0

From Table 8, 9.4% of the banks had 37 branches, the highest number while the lowest was 1 branch only owned by 2 banks. ICT strategy will also differ depending on the banks geographic scope.

Table 9 Numbers of Employees

Number	5	50	72	100	120	125	160	200	250	350	Sub-Total	Missing	Total
Frequency	2	2	2	4	3	2	3	2	4	3	29	5	32
Percent	9.4	12.5	6.3	9.4	6.3	9.4	12.5	6.3	6.3	6.3	90.6	9.4	100.0

Nine point four percent of the banks had 350 employees while 12.5% had 250 employees. 5 firms did not respond to this question. Number of employees may be a glimpse of the extent to which banks use ICT to manage productivity.

Table 10 Dominant Customer Segments

Segments	Frequency	Percent
Corporate	19	59.4
Small size enterprise	5	15.6
Medium-size enterprises	4	12.5
Consumer	2	6.3
Micro-enterprises	2	6.3
Total	**32**	**100.0**

Fifty nine point four percent of the banks were in corporate banking, 15.6% were focused on small size enterprises, 12.5% were concentrating on medium sized enterprises, 6.3% had consumer banking as the dominant segment and finally, 6.3% were focused in the micro-enterprise sector. This is expected to influence responses as the type of ICT solutions developed needs to be tailored to the customers needs.

Table 11 Marketing Department

Response	Frequency	Percent
No	11	34.4
Yes	21	65.6
Total	**32**	**100.0**

Thirty four point four percent of the banks did not have a fully fledged marketing department while 21% did. Thus the scope of marketing activities, and the degree to which ICT permeates them, is bound to differ among the banks.

Table 12 Presence of a Marketing Information System

Response	Frequency	Percent
No	20	62.5
Yes	12	37.5
Total	**32**	**100.0**

Sixty two point five percent of the firms did not have a marketing information system while 37.5% did. ICT usage will also vary accordingly.

4.3 ICT Application and Challenges of Applying ICT in the Marketing Function of Banks in Kenya.

This section will discuss findings in relation to the two objectives of the research. To assess these objectives, the study employed a five point Likert scale with the rankings "1 = No extent at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; and 5 = Greatest extent" to rank the various variables according to the extent of their usage in the different banks. For each response category, the mean values and standard deviations were computed using SPSS software (version 12.0). Mean values are an indicator of the extent of application of each ICT aspect across the respondent population. High mean values for a given aspect indicate that that aspect of ICT application was widely applied while the converse is also true.

The observed mean values were rounded off to 2 decimal places and assigned a meaning derived from the nearest corresponding point on the Likert scale. e.g. 1 = no extent, 2 = small extent and so on. The standard deviation values are an indicator of the extent to which respondents were in agreement over the extent of application of given ICT variables and the corresponding challenges faced. For purposes of this study, standard deviations greater than 1 indicated a high dispersion about the mean while those below 1 indicated a relatively high clustering about the mean. The former implies that the respondents differed widely in how they rated the given aspect while the latter implies that they gave largely similar ratings.

4.3.1 To Investigate the Extent to which ICT has been applied in Marketing by Commercial Banks in Kenya.

Table 13 indicates that credit contact information systems (system that provide credit information and manage credit history of customers) with a high mean value of 4.31 (a great extent) were the most widely used followed by computer software (application or general purpose software like spreadsheet, or word processing) with a mean value of 4.09. These two aspects of ICT application had standard deviation values of below 1.000, indicating a fairly high clustering around the mean.

Credit contact information systems are a form of Operational Executive Information Systems used to monitor values (O'Connor and Galvin, 1997). They provide information on the customers' credit worthiness and loan repayment performance. Given that the lending function is core to banking, their importance cannot be understated and thus their number one ranking is not at all too surprising. As earlier seen (Verhoef et al., 2002), these systems also permit market segmentation by separating "good customers from the "bad" customers. Thus, banks can focus on serving their profitable customers.

Table 13 The Extent to which ICT has been applied in Marketing

ICT Systems	N	Mean	Std. Dev
Credit contact information systems (system that provide credit information and manage credit history of customers)	32	4.31	0.998
Computer software (application or general purpose software like spreadsheet, or word processing)	32	4.09	0.893
Customer contact information system (systems that store information on customers product/service preference and sales history data)	32	4.00	0.984
Inquiry information systems (systems that capture customer inquiries and give responses)	32	3.53	1.436
Planning and developing information systems (systems that support product and service development)	32	3.31	1.120
Advertising and promotion systems (systems that provide information needed to decide which advertising or promotional strategies to use)	32	3.09	1.489
Prospects information systems (systems for helping to locate potential customers)	32	3.09	1.376
Sales management information systems (systems for developing reports analyzing sales activities)	32	3.06	1.523
Sales forecasting information systems (systems that forecast future sales for each product or service)	32	3.00	1.524
Telemarketing systems (use of ICT to sell products or services, initiate contacts, follow up on sales)	32	2.94	1.458
Direct mail advertising system (systems that mass mail brochures and catalogues directly to customers)	32	2.72	1.529
Pricing information systems (systems that help to set prices for products or services)	32	2.56	1.366
Competitive tracking information system (system for monitoring competitor activity)	32	2.50	1.191
Distribution channel decision support systems (systems that help to decide how products and services will be delivered to customers)	32	2.38	1.157
Point of sale systems (systems that capture data at the point of sale)	32	2.37	1.408
Computer kiosks (kiosks in public place that provide company, products, or services information)	32	1.84	1.139

All the other aspects had standard deviation values above 1, implying a wide dispersion about the mean. Computer kiosks (kiosks in public place that provide company, products, or services information) were the least used with a mean of 1.84, followed by Point of sale systems (systems that capture data at the point of sale) whose mean was 2.37.

From Table 14, delivering banking services was the marketing aspect where ICT was the most widely used (mean value of 4.42) followed by processing of customer enquiries with a mean value of 4.38. Both these marketing aspects had standard deviations below 1.000 indicating a high clustering about the mean. With digitization, intangibles such as services can be highly automated. Distance has a reduced effect on costs as systems move online in real time (Pitt, et al, 1999).

Table 14 Extent of Bank Marketing Activities using ICT

Marketing Activities	N	Mean	Std. Dev
Delivering banking services	31	4.42	.807
Processing customer inquiries	32	4.38	.907
Bank account opening	32	4.09	1.201
Sales report delivery and presentation	32	3.91	1.279
Credit information analysis	32	3.84	1.298
Bank account closing	32	3.81	1.148
Receiving and responding to customer complaints	32	3.78	1.211
Advertising bank products and services	32	3.69	1.355
Educating customers on product futures and benefits	32	3.44	1.243
Identify cross selling opportunities	32	3.41	1.434
Sales analysis	32	3.41	1.388
Customer account performance monitoring	32	3.41	1.365
Reactivating customer accounts	32	3.41	1.214
Product or service development	32	3.41	1.132
Direct mailing of brochures and catalogues	32	3.37	1.040
Analyzing customer satisfaction	32	3.31	1.615
Undertaking public relations activities	32	3.09	1.376
Customer searching/prospecting	32	3.06	1.458
Collecting competitor market intelligence	32	3.03	1.282
Customer segmentation	32	2.94	1.413
Pricing products and services	32	2.94	1.216
Strengthening customer loyalty	32	2.87	.976
Product or service demand forecasting	32	2.75	1.704
Conducting marketing research	32	2.72	1.550

Banking services fit into this category and consequently, it would be widely expected that banking services would be highly digitized. This increases access even outside banking hours and clients can access banking services from the comfort of their offices.

Surprisingly, conducting marketing research was the marketing aspect in which ICT was least used followed by product or service demand forecasting (mean value of 2.75).

Table 15 Challenges faced when applying ICT in Bank Marketing Activities

Challenges	N	Mean	Std. Dev
Systems development overruns budget constraints	32	2.69	1.256
Customers maintains low interaction with ICT	32	2.56	1.318
Too much reliance on historical secondary data	32	2.50	1.244
Failure of the ICT enabled information systems to provide relevant information	32	2.47	1.107
Limited IS capacity in capturing financial market data	32	2.41	.837
Systems development overruns time constraints	32	2.41	1.341
Obstructing application of ICT in marketing by work politics	32	2.38	1.238
Frequent business strategy changes rendering ICT systems rapidly obsolete	32	2.38	1.040
Poor top-down/bottom-up communication in the marketing function hampering proper usage of ICT	32	2.38	1.289
Poor customization of the information systems to bank needs	32	2.31	.965
Staff resistance to changeover to new ICT systems	32	2.25	1.244
Low levels of marketing function preparedness to embrace depth of changes ICT offers	32	2.22	1.184
Frequent IT system outrages causing disruptions in marketing operations	32	2.19	1.203
Low IS literacy among banking staff	32	1.91	1.088
Information security threats	32	1.84	.954
Lack of top management to application of ICT in marketing function	32	1.81	1.091
Low levels of marketing function preparedness to embrace scope of changes ICT offers	32	1.81	.931
Poor IS analytical skills among marketers	32	1.69	.780

Systems development overrunning budget constraints, with a mean value of 2.69, was the biggest challenge faced when implementing ICT in the marketing function of the banks. This was followed by the incidence of customers maintaining a low interaction with ICT systems with a mean value of 2.56. Too much reliance on historical secondary data was the third most challenging aspect with a mean value of 2.50. Lyytinen and Hirschheim's (1987) observes that process failure will occur when the IS implementation incur cost and/or time overruns. This then makes it uneconomical to continue with system design and implementation.

Poor IS analytical skills among marketers was the least challenging aspect facing ICT implementation followed by low levels of marketing function preparedness to embrace the scope of changes ICT offers. Both these aspects had standard deviations less than 1 implying a high level of agreement among the respondents regarding their efficacy. Poor information analytical skills conform to the socio-technical viewpoint model of IS application as pointed put by Pitman (1994). The analytical skills aspect however, does not appear to be a major hindrance in IS development and implementation in commercial banks in Kenya.

4.4 Principal Component Analysis

Table 16 Factor Loadings

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.387	41.037	41.037	4.940	27.447	27.447
2	3.996	22.203	63.240	4.135	22.970	50.417
3	2.540	14.111	77.351	3.739	20.772	71.188
4	1.265	7.029	84.380	2.374	13.192	84.380
5	.904	5.023	89.403			
6	.645	3.584	92.987			
7	.415	2.305	95 291			
8	.343	1.904	97.195			
9	.240	1 336	98 531			
10	.188	1 042	99 573			
11	.057	319	99 892			
12	.019	.108	100 000			
13	.000	.000	100 000			
14	.000	.000	100 000			
15	.000	.000	100 000			
16	.000	.000	100 000			
17	.000	.000	100 000			
18	.000	.000	100 000			

Extraction Method: Principal Component Analysis.

This study also sought to determine which of those aspects that underlie the "challenges" construct were widely perceived as being most difficult to surmount. "Challenges" is a complex construct and is a function of a whole set of different components. Thus, the 18 statements examined under this section were based on what were felt to be the key

components that may constitute the "challenge" construct. In this study, Principal Component Analysis (PCA) served two main aims. One was to group statements together that seemed to be getting at the same underlying component of the "challenges" construct (Davidson, 1996).

Then, it was possible to adequately model the respondents' perceptions by looking solely at those underlying dimensions or "factors". The second purpose was to define the substantive content or meaning of those factors. This was accomplished by identifying groups of items that covaried with one another and appeared to define meaningful underlying latent variables. Thus, for the four factors that emerged from the analysis, an examination of the statements that compiled these factor groupings gave an insight on how to best describe these factors.

The results of PCA are as shown in Table 16 and 17. The first step in factor analysis was to determine the number of factors to extract from the dataset. It would seem sensible to select factors from the analysis that put us in a better position after the analysis than we were in before we started. We therefore selected those factors that explained more variation in response than would the original 18 statements that were developed as key proxies of the challenge construct. SPSS furnished us with this information as part of its output, in the form of eigenvalues. Those factors with eigenvalues of less than 1.0 explained less variation than would one of our original statements, so it was sensible to select only those factors with eigenvalues greater than 1.0. The four eigenvalues that met this criterion are highlighted in Table 16 (second row in the table).

The fourth row in the table 16 shows percentage of variance in the full set of 18 statements underlying the "challenge" construct that were attributed to the four factors. The cumulative value is 84.38%. In simple terms, we could explain over 80% of the variation in response to our original statements by reference to only four factors. This would seem a satisfactory conclusion to our gal of data reduction. It is far easier to handler four items in subsequent analysis than our original 18.

The Rotated Component Matrix Table. Table 17. is used to search and quantify for correlations among the different factors and the various challenge statement variables. Since there is more than one factor, 'rotation' aims at creating all possible matches and detecting those matches between the factors and statements that produce the highest correlations. On other words rotation aims at finding which statements correlate highest with each of the given factors. We then establish relationships only between those statements and factors that demonstrate the highest correlations. Table 17 shows these correlations between the four factors and the various challenges statement variables.

The bold figures in italics indicate the statements with which the given components are highly correlated. Of course, realizing that there are four factors is itself not the end of the story; it is often useful to develop an understanding of what these factors are. This is a little subjective, but the trick lies in looking at the correlations provided in Table 17 and deciding what the bundle of statements correlated with each factor might represent.

4.4.1 Factor 1 "Low ICT Capability Appreciation"

Factor 1 correlated highly with to challenges to do with poor customization of the information systems to bank needs, frequent business strategy changes rendering ICT systems rapidly obsolete, information security threats, lack of top management to application of ICT in marketing function, low IS literacy among banking staff and low levels of marketing function preparedness to embrace the scope of changes ICT offers. Since these statements lean on poor appreciation of ICT functionalities, Factor 1 has been labelled "Low ICT Capability responsiveness".

Extending our earlier argument regarding the challenge posed by cost overruns, it is arguable that "low ICT capability appreciation" may result from the other reasons cited in the review of literature for IS failures such as a misalignment between ICT strategy and processes on the one hand and (marketing) business strategy and processes on the other (Henderson and Venkatraman, 1993); inability to leverage existing ICT infrastructures (to the marketing function) (Weill, 1993); 'paving the cow paths' rather than capitalizing on innovative ways to organize work that technology provides (Davenport, 1993); and

the relationship 'gap' between the IS function and rest of the business (Peppard and Ward, 1999). The cumulative effect of all these failures is to aggravate any IS shortcomings.

4.4.2 Factor 2 Staff Apathy

Factor 2 was highly correlated with statements that relate to internal problems in the firm. Factor 2 will thus be labelled "staff apathy". Staff apathy subsequently boils down to resistance to change and problems arising from low staff interaction with IS systems. As earlier seen, to turn around this state of affairs, Pitman (1994) argued about the need for visible top management support and commitment, preparation for change, encouraging participation, supporting rewards and effective communication. Krovi (1993) proposes about the need to fact in change management in the IS implementation process in order to overcome organizational culture limitations arising from people related constraints.

Table 17 Rotated Component Matrix(a)

	Component			
	1	2	3	4
Failure of the ICT enabled information systems to provide relevant information	.208	-.054	.527	***.674***
Poor customization of the information systems to bank needs	***.750***	-.134	.358	.365
Obstructing application of ICT in marketing by work politics	.003	.383	.100	***.825***
Frequent business strategy changes rendering ICT systems rapidly obsolete	***.806***	-.188	-.010	-.015
Frequent IT system outrages causing disruptions in marketing operations	-.229	.372	***.836***	.263
Information security threats	***.626***	-.150	.591	-.274
Staff resistance to changeover to new ICT systems	.451	***.526***	.392	.503
Lack of top management to application of ICT in marketing function	***.699***	.205	.341	.405
Limited IS capacity in capturing financial market data	.332	.071	***.735***	.027
Low IS literacy among banking staff	***.915***	.049	.126	.130
Low levels of marketing function preparedness to embrace the scope of changes ICT offers	***.861***	.196	-.037	.002
Low levels of marketing function preparedness to embrace the depth of changes ICT offers	***.667***	.603	-.113	-.328
Poor top-down/bottom-up communication in the marketing function hampering proper usage of ICT	.128	***.874***	.257	.120
Poor IS analytical skills among marketers	.586	***.654***	-.049	-.386
Systems development overruns budget constraints	.006	.521	***.775***	.146
Systems development overruns time constraints	.093	.291	***.817***	.378
Customers maintains low interaction with ICT	-.016	***.876***	.220	.231
Too much reliance on historical secondary data	-.213	***.852***	.223	.193

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 5 iterations.

4.4.3 Factor 3 Performance and Implementation Constraints

The statements correlating with this factor relate to system performance and implementation. Statements correlating with this factor are "frequent IT system outrages causing disruptions in marketing operations: limited IS capacity in capturing financial market data; systems development overruns budget constraints: and systems development overruns time constraints". Factor 3 was thus labelled "performance and implementation constraints" as it correlated well with statements relating to performance and implementation limitations.

Factor 4 is also more of a performance and implementation issue albeit the implementation constraint is more to do with people politics. Performance constraints may arise from systems that are superfluous to business needs, thereby not meeting the business' specification to enable value creation and delivery (Peppard et al., 2000). Again, performance may be hindered by legacy software (Kumar and van Hillegersberg, 2004) that hinder seamless software integration to optimize on performance.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings, draws conclusions relevant to the research, and makes recommendations on the same. Just to recap, the study had two objectives, namely, to investigate the extent to which ICT has been applied in marketing by commercial banks in Kenya and to determine the challenges of applying ICT in the marketing function of banks in Kenya. To achieve this, a survey study was conducted using a questionnaire.

5.2 Summary of Findings

The first objective of the research was to investigate the extent to which ICT has been applied in marketing by commercial banks in Kenya. The findings indicate that credit contact information systems (system that provide credit information and manage credit history of customers) were the most widely used followed by computer software (application or general purpose software like spreadsheet or word processing). The importance of credit contact information systems was attributed to the fact that lending is a core banking function and it is important to ensure that this function is efficiently conducted and monitored. The popularity of general purpose computer software like spreadsheets lay in their versatility to promote office automation.

Regarding the extent of conducting bank marketing activities using ICT, delivering banking services was the marketing aspect where ICT was the most widely used, followed by processing of customer enquiries with bank account opening third. Banking, being a service industry, offers vast opportunities for digitization of its industry. These aspects naturally emerged top in line for purposes of automation. Delivery channels range from Internet banking to Automated Teller Machines deployed in various geographic locations. This ability to eliminate distance and move services online in real-time has given ICT a veritable role to play in the marketing of banking services.

Systems development overrunning budget constraints was seen to be the biggest challenge faced when implementing ICT in the marketing function of the banks. This was attributed to a number of factors such as the emphasis on technology architecture rather than contribution to added business value. Such misplaced emphasis results in misadvised investments in expensive ICT equipment. This was followed by the incidence of customers maintaining a low interaction with ICT systems a fact that can be attributed to poor education regarding the benefits offered by ICT technology. It is therefore incumbent upon banks to educate their customers on ICT and its benefits.

Too much reliance on historical secondary data was the third most challenging aspect. Secondary data is readily available and cheap, making its use convenient. Nonetheless, it suffers from problems of recency and too much emphasis in its use may lead to systems underutilization. Poor IS analytical skills among marketers was the least challenging aspect facing ICT implementation followed by low levels of marketing function preparedness to embrace the scope of changes ICT offers.

5.3 Overall Conclusion

The main lessons learnt is that ICT is rapidly gaining acceptance as an aid to the creation of business value as is seen from the data reflecting its usage across the banking industry. Credit contact information systems had the highest extent of application. This can be understood in light of the core business activity underlying banking which is lending. These systems are vital for efficient and effective credit risk management and cut across the industry in terms of their strategic importance. Cost overruns during implementation were the biggest challenge encountered, implying a need for effective and efficient implementation strategies.

5.4 Limitations of the Study

Owing to the need to guard against revealing information of strategic value that may then be copied by competitors will make respondents restrain their freedom while responding. As such, responses are not expected to incorporate strategically valuable information.

Again, 11 banks did not respond and these would probably have offered useful insights into the issue being researched. There may also have been issues to do with a lack of comprehension of given questionnaire items or a total misunderstanding of what the researcher intended to study. Also, a number of questions were left blank and these would tend to skew the results of the analysis, creating generalization problems.

Given differences in management style and strategic based on bank ownership and country of origin, ICT strategy will also vary. These aspects were not captured in the study. There was also the problem to do with inadequate availability of literature especially in the area underlying challenges faced by banks in ICT application. Finally, the common limitations of inadequate time and budgetary constraints were encountered in the course of conducting the study.

5.5 Recommendations

The study recommended that banks move the next mile towards further innovative use of ICT systems. This implies embracing concepts such as computer kiosks, distribution channel decision support systems and competitive tracking information systems which registered a low level of usage. This will help push technology diffusion and acceptance in the industry as well as the country to higher levels and assist in the industrialization process. A more holistic incorporation of ICT across the entire spectrum of marketing activities will also help optimize on ICT utilization in the sector as well as increase the levels of marketing effectiveness and efficiency.

In order to improve ICT implementation, the study recommended that overall, firm strategy be aligned well with both marketing- and ICT-strategy. This will ensure that any investments made in ICT that target the marketing function will indeed add value to marketing activities. This will avoid costly upgrades and/or replacements that in turn avoid cost overruns and budget constrains. Banks will also be well advised to educate their customers about new technologies in order to speed up technology diffusion and acceptance. This will the increase its usage and in turn, increase Return on Investments and shareholder value.

5.6 Areas for further Research

The study proposed further enquiry into the role of ICT into specific marketing functions. Marketing is a very broad field and encompasses domestic as well as international markets. Marketing functions also encompass the elements of product, price, promotions, physical evidence, process and people among others. It would be interesting to conduct studies targeting any of these elements and evaluate how ICT has impacted on performance under each of these headings.

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Appendix 1

Letter to the Respondents

University of Nairobi
School of Business
P.O. Box 30197, Nairobi
Nairobi, Kenya

Telephone: +2542-318262
Telegrams: "Varsity".
Telex: 22095 Varsity

Dear Sir/Madam,

To Whom It May Concern

The bearer of this letter: _____

Registration Number: _____ Telephone: _____

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

The student is required to submit, as part of the coursework assessment, a research project report on a given management problem. We would like the students to do their projects on real problems affecting firms in Kenya today. We would therefore appreciate if you assist the student collect data in your organization to this end. The results of the report will be used solely for purpose of the research and in no way will your organization be implicated in the research findings. A copy of the report can be availed to the interviewed organization(s) on request.

Yours respectfully,

The Coordinator,

MBA Programme

Appendix 2

Section A:

Individual Respondent Demographic Data

1. Please indicate your job title _____
2. For how many years have you worked in Marketing? _____
3. Please indicate your age range in years by ticking in the appropriate box

☐ 18-24; ☐ 25-35; ☐ 36-45; ☐ 46-55; ☐ Above 55

4. Indicate your professional qualifications below by ticking in the appropriate box (you may tick more than one)

☐ Bachelors Degree in Marketing; ☐ MBA, Marketing Major;

☐ Chartered Institute in Marketing; ☐ Specify Others: _____

5. Indicate your gender. ☐ Male; ☐ Female

Bank Biodata

6. Tick in the appropriate box the shareholding composition of your Company

☐ Wholly Local; ☐ Part-local/part-foreign; ☐ Wholly Foreign owned

7. Kindly indicate by ticking in the appropriate box whether your company is:

☐ Private owned; ☐ Part private/part public

☐ Public owned; ☐ Parastatal

8. How many branches does your bank have? _____
9. How many employees does your bank have? _____
10. Indicate by ticking in the appropriate box below your banks dominant customer segments

☐ Corporate; ☐ Consumer; ☐ Medium-size enterprises;

☐ Small-size enterprises; ☐ Micro-enterprises.

11. Do you have a fully fledged Marketing Department? ☐ No; ☐ Yes (Please tick one option)

12. Do you have a Marketing Information System? ☐ No; ☐ Yes (Please tick one option)

Section B:

13. As per the scale below, please rank the extent to which your bank uses the systems listed below in the marketing activities:

1 = No extent at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent;

5 = Greatest extent

	Extent				
Systems	**1**	**2**	**3**	**4**	**5**
Competitive tracking information systems (systems for monitoring competitor activity)					
Computer kiosks (kiosks in public places that provide company, products or services information)					
Credit information systems (systems that provide credit information & manage credit history of customers)					
Customer contact information systems (systems that store information on customers product/service preferences & sales history data)					
Direct mail advertising systems (systems that mass mail brochures and catalogues directly to customers)					
Distribution channel decision support systems (systems that help to decide how products and services will be delivered to customers)					
Inquiry information systems (systems that capture customer inquires and give responses)					
Advertising and Promotion systems (systems that provide information needed to decide which advertising or promotional strategies to use)					
Point of sale systems (systems that capture data at the point of sale)					
Planning and development information systems (systems that support product and service development)					
Pricing information systems (systems that help to set prices for products or services)					

1 = No extent at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Greatest extent					
	Extent				
Systems	1	2	3	4	5
Prospects information systems (systems for helping to locate potential customers)					
Sales forecasting information systems (systems that forecast future sales for each product or service)					
Sales management information systems (systems for developing reports analyzing sales activities)					
Telemarketing systems (use of ICT to sell products or services, initiate contacts, follow up on sales)					
Computer software (application or general purpose software like spreadsheet, or word processing)					
Other: (Please indicate & rank)	1	2	3	4	5

14. As per the scale below, please rank the extent to which the **bank marketing activities** stated below are performed using **Information and Communication Technologies.**

1 = No extent at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Greatest extent

Marketing Activities	Extent 1	2	3	4	5
Conducting marketing research					
Delivering banking services					
Undertaking public relations activities					
Advertising bank products and services					
Educating customers on product features and benefits					
Direct mailing of brochures and catalogues					
Bank account opening					
Bank account closing					
Processing customer inquiries					
Receiving & Responding to customer complaints					
Identify cross selling opportunities					
Product or service demand forecasting					
Sales analysis					
Sales report delivery and presentation					
Collecting competitor market intelligence					
Customer segmentation					
Customer account performance monitoring					
Strengthening customer loyalty					
Customer searching/prospecting					
Reactivating customer accounts					

1 = No extent at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Greatest extent					
	Extent				
Marketing Activities	1	2	3	4	5
Product or service development					
Pricing products and services					
Credit information analysis					
Analysing customer satisfaction					
Other (please Indicate & rank):	1	2	3	4	5

Section C

15. As per the scale below, please rank the extent to which the challenges stated below are encountered in ICT application in marketing in your bank:

1 = No extent at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Greatest extent

	Extent				
Challenges	1	2	3	4	5
Failure of the ICT enabled information systems to provide relevant information					
Poor customization of the information systems to bank needs					
Obstructing application of ICT in marketing by work politics					

1 = No extent at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Greatest extent					
	Extent				
Challenges	1	2	3	4	5
Customers maintains low interaction with ICT					
Too much reliance on historical secondary data					
Other (Please indicate & rank)	1	2	3	4	5

Thank you for completing this Questionnaire

Appendix 3

List of Commercial Banks in Kenya as at 01st June 2007

1	African Banking Corporation	23	First Community Bank Limited
2	Bank of Africa Ltd	24	Giro Commercial Bank Ltd
3	Bank of Baroda Kenya Ltd	25	Guardian Bank Ltd
4	Bank of India	26	Habib Bank A.G. Zurich
5	Barclays Bank of Kenya Ltd	27	Habib Bank Ltd
6	CFC Bank Ltd	28	Imperial Bank Ltd
7	Chase Bank Kenya Ltd	29	Industrial Development Bank Ltd
8	Citibank N. A.	30	Investment & Mortgages Bank Ltd
9	City Finance Bank Ltd	31	Kenya Commercial Bank Ltd
10	Commercial Bank of Africa Ltd	32	K-Rep Bank Ltd
11	Consolidated Bank of Kenya Ltd	33	Middle East Bank Kenya Ltd
12	Co-operative Bank of Kenya Ltd	34	National Bank of Kenya Ltd
13	Credit Bank Ltd	35	National Industrial Credit Bank Ltd
14	Development Bank of Kenya Ltd	36	Oriental Bank Ltd
15	Diamond Trust Bank Kenya Ltd	37	Paramount Universal Bank Ltd
16	Dubai Bank Kenya Ltd	38	Prime Bank Ltd
17	EABS Bank Ltd	39	Southern Credit Banking Corporation Ltd
18	Equatorial Commercial Bank Ltd	40	Stanbic Bank Kenya Ltd
19	Equity Bank Ltd	41	Standard Chartered Bank Kenya Ltd
20	Family Bank Limited	42	Transnational Bank Ltd
21	Fidelity Commercial Bank Ltd	43	Victoria Commercial Bank Ltd
22	Fina Bank Ltd		