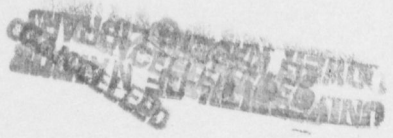
INFORMATION TECHNOLOGY PLANNING PRACTICES IN KENYAN BANKS



BY

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DECLARATION

This project is my original work and has not been submitted for a degree in any other University.

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This project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

This project is dedicated to my parents:

Alfred Nyambati Nyagaka and Alice Kemunto Nyambati

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My most sincere gratitude to my mother Alice Kemunto, brothers and sisters for their support and encouragement throughout this program. Special tribute to my Late dad for his love for education that made it possible for me to be writing this paper. May the Almighty Lord rest his soul in eternal peace. I also thank my fiancée Zipporah Nyaboke Onsomu for her encouragement and material assistance.

There are many whose support can not be overlooked. To all my colleagues I say thank you for your pieces of advice and support and wish you well in all your future endeavours. To all those who in one way or another facilitated the completion of not only this study but the entire program, may the Almighty Lord bless you abundantly. My thanks also go to all those commercial banks that participated in this research for their valuable information.

ABSTRACT

The principal objectives of this study were to find out how commercial banks in Kenya carry out planning for information technology and the factors that they consider in doing so.

The study covered all the commercial banks operating in Kenya.

The result of the data collected indicates that these organizations' IT planning process is formal, business - oriented in approach, and top-down in nature. It was also found out that the following are the key methodologies employed: Critical Success Factor (CSF), Business Systems Planning (BSP), Ends/Means Analysis, and Stages of IT Growth. Planning for IT is done on an annual basis and the resultant plans updated quarterly.

The following factors were identified as important in planning for IT: Management guidelines; Availability of personnel with the required expertise; Time, Availability of resources; Organizational mission, objectives, and goals; and Composition, participation, and coordination of the planning team.

From the findings it can be generally concluded that Kenyan Banks are prepared as far as adoption and use of information technology is concerned. It is however important to note that IT costs have kept rising as revealed by the research data and therefore an indication that there is still room for improvement.

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CHAPTER ONE

1.0 INTRODUCTION

The survival and growth of organizations in an increasingly turbulent environment would depend upon effective utilization of information technology (IT) for aligning the organizational structure with environmental preferences and for creating symbiotic inter-organizational structures (Malhotra, 1993). Browning (1990) further adds that information technology is no longer a business resource; it is the business environment. Ongoing advances in IT along with increasing global competition are adding complexity and uncertainty of several orders of magnitude to the organizational environment.

Today, organizations are faced with managing many diverse technologies: videoconferencing, fiber optics, distributed databases, local area networks, mainframe-based administrative information systems, multimedia, and many other new technologies. Some are older, well understood technologies whereas others are new and unfamiliar. These diverse technologies are also undergoing rapid changes that are creating enormous opportunities, but these opportunities cannot be pursued without effective planning (Schultheis and Sumner, 1995).

With poor planning, a proliferation of incompatible hardware, software, operating systems, and database management systems will evolve. Technology is expensive and mistakes can be costly. Because of the importance attached to information, the planning of information technology is elevated to the same level as planning for such things as fixed-asset investment and long-term financing.

The process of planning for information technology is intended to complement and support the organization's information policy as well as address the unique planning requirements of the information technology function itself. Information Technology planning is broad,

encompassing both long-range and short-range horizons, and embodies both strategic and operational characteristics (Davis and Olson, 1985). So effective planning of investments in information technology by business unit managers is a key ingredient in achieving strategic business success with IT.

Inadequate planning and management of information technology by business firms and the organizations has been documented for many years. Thus, there is a real need for managerial end-users to understand how to plan and manage this vital organizational function (O'Brien, 1993).

1.1 PROBLEM BACKGROUND

Information Technology is reshaping the basics of business. Customer service, operations, product and marketing strategies, and distribution are heavily, or sometimes even entirely, dependent on IT. The computers that support these functions can be found on the desk, on the shop floor, in the store, even in briefcases. Information technology, and its expense, has become an everyday part of business life (Keen, 1991). Champy (1996) adds that Information Technology has become a strategic necessity.

Information Technology has changed the way corporations compete and the manner in which people manage in the information age (Kanter, 1996). The rapid change in today's business environment has made information systems and information technology vital components that help keep an enterprise on target to meet its business goals. Information technology has become an indispensable ingredient in several strategic thrusts that businesses have initiated to meet the challenges of change. They include the internetworking of computing, internetworking of the enterprise, globalization, and business process reengineering, and using information technology for competitive advantage (Nolan et al., 1994).

Businesses are expanding into global markets for their products and services, using global production facilities to manufacture or assemble products, raising money in global capital markets, forming alliances with global partners, and battling with global competitors for customers from all over the globe. Managing and accomplishing these strategic changes would be impossible without the Internet, intranets, and other global computing and telecommunications networks that are the central nervous system of today's global companies (O'Brien, 2000).

In order to reap the benefits of investing in information technology, there is need for a clearly stipulated IT management policy. The first step in the management of IT resources is to plan. Planning involves strategic planning activities for the long run, goal setting and budgeting in the short-run, and identification of benchmarks or standards for critical performance criteria (Stivers and Beard, 1987). O'Brien (2000) argues that managing information technology requires planning for changes in business goals, processes, structures, and technologies. A good planning process helps organizations learn about themselves, uses resources efficiently and effectively, and promotes organizational change and renewal.

Growing appreciation of the changing role of information technology has highlighted the need to focus on different approaches to information technology planning which aligns information technology plans to business with business plans. Many IT departments are however managed on an ad hoc basis and are constantly threatened by rapidly advancing technologies and changing informational needs (Kanungo and Chouthoy, 1998). Although the IT environment is in a state of flux, the goals of IT should be constant: effective output and efficient utilization of resources. To achieve these goals, it isn't enough to have adequate resources on hand to meet current needs. Plans must be made to assure long-term harmony between the organization's

information needs and the IT service capabilities. Failure to plan can result in user dissatisfaction, increased costs, loss of competitive advantage, missed opportunities, and other major problems (Stivers and Beard, 1987).

The IT function has performance problems in many organizations. The promised benefits of information technology have not occurred in many documented cases despite continued increase in information technology investments (O'Brien, 2000). This phenomenon has been christened as the *"information technology productivity paradox"*. This has engendered a significant amount of research. Robert Solow, the Nobel Laureate economist, has aptly characterized the results: *"we see computers everywhere except in the productivity statistics."* Given the enormous promise of IT to usher in the biggest technological revolution men have known, disillusionment and even frustration with the technology is increasingly evident in comments like "No, computers do not boost productivity, at least not most of the time" (Economist, 1990). Poor planning and control has been enumerated as one of the key causes of IT performance problems (Thomas, 1995).

Aosa (1992) established that *contextual factors* have an impact on managerial processes. He further acknowledges that most African countries import technology and that organizations in these countries mainly acquire technology that has been developed elsewhere. It is important that these organizations be able to identify their technology needs, know the alternatives available, their values, and where to get the technologies they are seeking. Wallender (1978) summarizes that firms have problems in understanding the technology they need, how to get it, and what to do with it once it has been acquired. Contextual factors therefore play an important role in how organizations develop and implement IT strategies and plans (Kanungo and Chouthoy, 1998).

In most organizations, planning for the use of information technologies is difficult for two reasons. First, the competitive environment is so dynamic that competitive strategy and technology strategy are constantly changing. Second, the manager of information technology is responsible for managing multiple application portfolios: data processing, microcomputers, office automation systems, and factory automation. Each of the systems is evolving at a different stage of automation. The challenge is to use different management strategies to manage multiple application portfolios (Schultheis and Sumner, 1995).

Ochieng (1998) established that strategic planning for information technology is a key factor in effective IT implementation. Through ensuring alignment of IT strategy with business strategies, IT planning helps in streamlining of issues arising during implementation.

Many industries have been transformed by technology, and around the world deregulation, privatization, and the like have led to the imperative need for very high investment in IT. Today, you cannot remain an industry leader without being (and staying) a leader in IT. Those not keeping up with IT... are not keeping up (Eldon, 1996).

IT use, if planned and developed properly, can bring about greater efficiency in operations, better working conditions and faster decision making. On the other hand, ad hoc acquisition of IT has often resulted in under-utilization of the equipment and the developmental impact in such cases has also been minimal (Mulira, 1995).

1.2 STATEMENT OF THE PROBLEM

Virtually all managers agree that planning is essential to the success of every part of every business. In the Information Technology area, the need for sound, comprehensive, effective planning would seem to be even greater than any other area. This is due to many factors, but

the ones that stand out are the complexity (and volatility) of the technology, contextual factors and the increasingly critical lack of resources available to most IT departments. Because the computer environment is constantly changing, a plan to maximize the utilization of existing systems while taking advantage of new technologies is a valuable tool.

Studies by management consulting firms, computer user groups, and university researchers have shown that many businesses have not been successful in managing their computer resources and information service departments. Information Technology is not being used effectively, efficiently, or economically (O'Brien 2000). A study carried out in India found out that a lack of planned IT strategy, which results in ad hoc IT processes, is a major impediment to IT effectiveness in Indian organizations. It was found out that the level of IT planning in most organizations was inadequate (Kanungo and Chouthoy, 1998).

Research has revealed that most organizations in India have often embraced the "wait and watch" approach towards IT before making any major commitments. Others are being forced by competitive pressures to adopt IT in a bid to be at par with their competitors without giving it any prior conscious thought. Yet others are finding themselves at the mercy of IT (their acquisition and implementation of information technologies is outpaced by the rate at which the technologies are changing). What is the situation in Kenya? Are Kenyan organizations embracing the "wait and watch" approach and if so, how effective is it?

Though not verifiable through documented evidence, it has been observed that management still view acquisition of IT as an end in itself. They believe that as long as the right technology is in place the results will automatically follow and thus fail to plan for the usage of the acquired technology in order to improve performance and productivity. Other organizations on

realizing that they cannot survive liberalization and globalization forces are rushing into ad hoc acquisition of information technology hoping to catch up with earlier adopters. Can this observation be evidenced by researched data?

In Kenya different studies have been done focusing on different aspects of information systems. Kipngetich (1991) studied management satisfaction with information systems, Gatune (1993) studied the factors considered important in implementing local area networks, Nyambane (1996) studied the evaluation of the extent of and factors limiting information technology usage in publicly quoted companies in Kenya, Ochieng (1998) studied the factors considered important in the implementation of information systems, and Nyambura (2000) studied the challenges facing Internet growth in Kenya. Except Ochieng (1998) who recommended a study in information systems planning, none of the other researchers has addressed this pertinent issue.

The reason behind the selection of commercial banks for this study is that the commercial banking sector is undisputedly the most dependent on IT with competition now shifting to the use of IT in providing better quality services. A recent survey of bank executives in Africa by Grant Thorton found that over 90% of them thought technology was critical to their survival (Young, 1999).

This research shall therefore attempt to answer the following questions:

- How do commercial banks carry out planning for IT?
- What are the factors influencing IT planning in Commercial Banks?

1.3 OBJECTIVES OF THE STUDY

- To find out how commercial banks carry out planning for IT.
- To determine the factors that influence IT planning in Commercial Banks.

1.4 SIGNIFICANCE OF THE STUDY

Planning is the most important part of the manager's role (Thomas, 1995). Managers have always been leery of planning. Planning is hard work, not much fun, ill defined, not immediately rewarding, and can detract from time devoted to the day to day operations of the business. The research will therefore be of great significance to all organizations irrespective of their size and area of operation as long they use IT as a key strategic weapon/tool in their day-to-day operations.

To the clients and other stakeholders, the research will be of significance since it will highlight the importance of IT planning and also give them a glimpse of whether their organizations have properly stipulated plans for taking advantage of information technology as a key strategic weapon in the provision of quality goods and services and hence survival in the global market place. For managers, the research will act as a guide to effective and adequate information technology plans formulation.

Since this is an area that has received little attention in research studies, this research will act as a stimulant for more in-depth studies in this area.

1.5 DEFINITION OF TERMS

1.5.1 Information Technology

Information Technology (IT) has been defined in a number of ways by different scholars. In this study the definition by Waema, T. M. (1999) who defines information technology to encompass computer hardware and systems, computer-controlled systems,

computer software and systems, and communications equipment and systems and the services that all these systems provide shall be adopted.

1.5.2 Planning

There are numerous definitions of planning as a management function. In this study the definition by Bateman and Zeithaml (1993) shall be adopted. They define planning as "a conscious, systematic process during which decisions are made about the goals and activities that an individual, group, work unit, or organization will pursue in future."

1.5.3 Practice

The dictionary of contemporary English defines a practice as:

a) Regular or repeated performance or exercise in order to learn to do something well.

b) The actual doing of something rather than the idea of it.

c) A repeated, habitual or standard act or course of action.

1.5.4 Information Technology Planning Practices

For this study, information technology planning practices shall be defined to encompass all the activities that are carried out in the planning for the acquisition and use of information technology in an organization. This shall include the methodologies that are used, the formality of the process, whether it is techno-centric or business focussed, management participation and involvement, levels at which planning is carried out, and the challenges that face the planners.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 MANAGEMENT PLANNING

Management is traditionally described as a process of leadership involving the management functions of planning, organizing, directing, and controlling (O'Brien, 2000).

Planning is potentially the most important part of a manager's role (Thomas, 1995). Davis and Olson (1985) assert that the value of planning is well understood. Companies that tend to plan tend to achieve better results than companies that do not, yet many organizations don't plan or do it poorly. The complexity of the information resources environment suggests that planning is vital for success.

Planning involves the development of long- and short-range plans requiring the formulation of goals, objectives, strategies, policies, procedures, and standards. Planning also involves the perception and analysis of opportunities, problems, and alternative courses of action and the design of programs to achieve selected objectives (O'Brien, 2000).

Organizations go through a planning process of (1) evaluating what they have accomplished and the resources they have acquired, (2) analyzing their environment, (3) anticipating future developments, (4) deciding on what goals they want to achieve, and (5) deciding what actions to take to achieve their goals.

Planning should be the true starting point for IT. If IT is to support management, and management is goaled and measured by the long-range plan, then it is obvious that the contents of the plan are vital to the overall goals and objectives of the IT operation. Indeed IT must itself be a part of the long-range plan – both influencing and being influenced by it (Kanter, 1997).

2.2 EVOLUTION AND GROWTH OF IT PLANNING.

Kanter (1997) identifies the following as the stages of IT planning evolution. The first emergence of planning was ***project planning***, for it was found that many of the earlier applications did not really satisfy user needs once the implementation was completed. Projects typically were behind schedule and took more resources than was contemplated– and by an order of magnitude or worse. It soon became clear that identifying the project milestones, gaining user sign-off on specifications, and scheduling management reviews throughout the cycle produces better products.

The proliferation of applications during the contagion stage resulted in heavy demands of computer time. This initiated the second kind of IT planning–***capacity planning***. Capacity planning permits the modeling of the current workload in order to project future volume levels and the need and time frame for added capacity.

With the increase in computer resources, management became alarmed over the sharply rising cost of IT services. This led to a third type of IT planning–***resource or budgetary planning***. IT managers began developing annual operational plans, which necessitated looking ahead at least a year to project what hardware, software, people, and facilities were required to run the operation and handle the growing portfolio of computer applications.

As IT matured, an assessment of management needs showed a requirement for integrated data files and architecture in order to provide meaningful management information to run the business. This finally ushered in ***long-range planning***–the need to formulate the direction and strategy of the IT function to support the business in the next three- to five-year period or longer.

Evidence has been presented that suggests that the business world may be a complex system poised at the edge of chaos. Chaotic systems are known to exhibit a sensitive dependence on initial conditions that makes long-range planning and prediction impossible. In this state, long-range planning is still effective because stable conditions may prevail for protracted periods of time. However, instability is also present in the system and sudden unexpected changes are always possible. In these situations, organizations should abandon strategic planning in favour of organizational learning where the firm must learn to rapidly adapt to its changing environment (Phelan, 1995).

2.3 ROLE OF IT PLANNING.

Proper and focused IT planning is a key ingredient in ensuring the effective, efficient, and economic use of Information Technologies. By moving closer to the business operation and focusing support to visibly maximize the impact of all expenditure, IT will be in a position to increase its worth to the company and take a major step toward aligning support with the real goal of any company — to make money.

IT planning is done to make sure that information systems are maximally utilized in achieving organizational objectives. There is a technical dimension as well as an organizational dimension to IT planning. Successful IT planning makes managers aware of the computers that can have significant effects on their organization's competitive position and more importantly that information system planning needs to be coupled more closely with the goals of the organization (Kanungo and Chouthoy, 1998).

Information Technology planning is an important component of organizational planning. IT can play a vital role in the efficiency of a company's operations, the effectiveness of managerial decision-making, and the success of an organization's strategic initiatives.

Therefore, managing IT requires a planning process that is part of the strategic, tactical, and operational planning of the organization (O'Brien, 2000).

The factors that dictate how elaborate information systems' planning is in an organization depend on individuals who are involved in the planning process. How often it is done, the mechanics of the planning process and the level at which it is discussed.

2.4 LEVELS OF IT PLANNING

2.4.1 Strategic Information Technology Planning.

A strategic IT plan formulates policies, objectives, and strategies for delivering information services and allocating information technology resources. It involves a study of how the information technology function can contribute to the achievement of the goals contained in the strategic plan for the entire organization.

A strategic IT plan frequently contains an analysis of a firm's application portfolio. It helps a firm plan an IT investment strategy, since it spotlights the types of IT applications being developed, the business functions being supported, and the resources being allocated (as a percentage of revenue to assets) to the information systems function. Strategic IS planning also requires environmental analysis, in which the external business and technical environments and the internal or organizational environment are analyzed. Assessment is made of information technology problems and opportunities and of the capabilities of the organization's hardware, software, and people resources.

Especially important at this stage is an analysis of the potential the firm has for using IT for competitive advantage. Porter's models of competitive forces (competitors, customers, suppliers, new entrants, and substitutes) and competitive strategies (cost leadership,

differentiation, and innovation), as well as the value chain model of basic business activities can be used in the strategic planning process to help generate ideas for the strategic use of IT.

2.4.2 Tactical Information Technology Planning

This starts with a specific assessment of an organization's current and projected information requirements. These requirements are then sub-divided into individual project proposals for the development of new or improved information systems. These projects are then evaluated, ranked and fitted into a multi-year development plan. Finally, a resource allocation plan is developed to specify the hardware, software, and telecommunications facilities, and financial commitments needed to implement a master development plan.

2.4.3 Operational Information Technology Planning.

This involves the preparation of annual operating budgets and the planning for individual information technology development projects. Annual operating budgets specify the allocation of financial and other resources needed to support the organization's information services departments in day-to-day operations and systems development and maintenance activities.

Project planning is an important operational planning function. It involves the development of plans, procedures, and schedules for an information system development project. Such planning is an important part of management effort that plans and controls the implementation of systems development projects. This is necessary if a project is to be completed on time and within its proposed budget and if it is to meet its design objectives.

2.5 IT PLANNING METHODOLOGIES.

2.5.1 Critical Success Factor (CSF) Method.

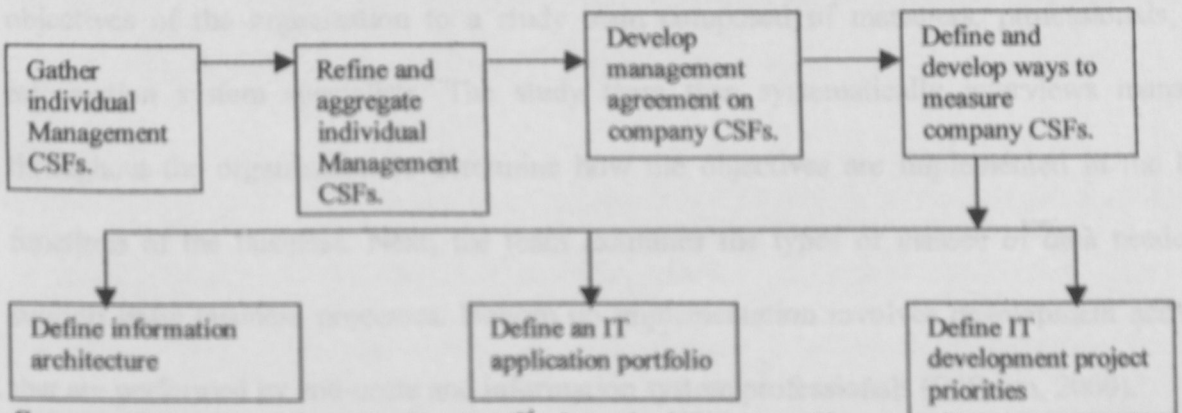
Developed by John Rockart of the Massachusetts Institute of Technology to address the

information needs of senior managers. Traditional approaches to helping managers define their information needs are ineffective, Rockart (1979) argues. One such method, which he calls the "by-product technique," uses the by-products of transaction processing systems to support managers' needs. However, reports such as sales summaries and monthly budget summaries may not zero in on current business problems (Schultheis and Sumner, 1995).

As a result of their frustration with current management reporting systems, many managers fail to use computer-generated information to make decisions. They argue that the business environment is so dynamic that no information system could be designed to provide them with the information they needed.

CSF's major premise is that the information requirements of an organization should be determined by its critical success factors, a small number of key factors that executives consider critical to the success of the organization and the attainment of its goals. Thus, information technology is designed to continually measure performance in each CSF and report this information to management (O'Brien, 2000).

The figure below summarizes the key activities of a CSF approach to information technology planning.



Source: *Management Information Systems, 3rd edition, by O'Brien pp. 478*

The main weakness of the CSF method is that it focuses on manager-specific information needs rather than organizationwide information requirements. The CSF approach doesn't try to recommend a data architecture planning to accompany the analysis of managerial information needs, and it doesn't address the MIS management responsibilities associated with implementing these systems projects.

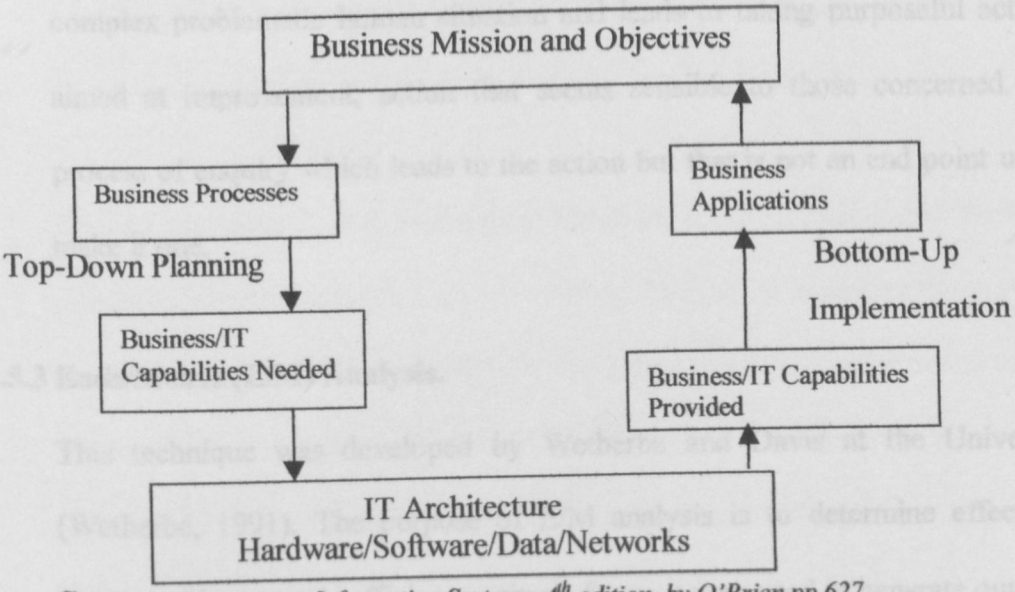
2.5.2 Business Systems Planning (BSP) Method.

This is an approach used to assist a business in developing an information systems plan that supports both the short- and long-term information needs. The goal of the approach is to provide a formal, objective method for management to establish information system priorities that support business needs.

BSP is a comprehensive, well-documented and widely used methodology. It stresses business objectives and processes as the bases for information architecture for future information system development.

One of the basic premises of BSP methodology is that an organization's information system should be planned from the top down and implemented piece by piece from the bottom up. Top down planning requires that a group of top executives lay out the strategic mission and objectives of the organization to a study team composed of managers, professionals, and information system specialists. The study team then systematically interviews managers throughout the organization to determine how the objectives are implemented in the basic functions of the business. Next, the team examines the types or classes of data needed to support basic business processes. Bottom up implementation involves development activities that are performed by end-users and information system professionals (O'Brien, 2000).

The figure below highlights the key steps in BSP.



Source: *Management Information Systems, 4th edition, by O'Brien pp.627*

The most common criticisms of BSP are that it is time consuming and its recommendations are not easy to implement. This approach also requires end-users to participate in implementing a system they did not participate in planning for. Therefore the top-down approach borrows from the hard systems thinking which entails starting from a carefully defined objective which is taken as given. But in many, perhaps most, managerial problems at any level the questions- what are the objectives? What are we trying to achieve? - are themselves part of the problem. The top-down approach is therefore simplistic, naïve, and thus not suitable for 'real' problems which are messy, complex with multiple objects usually unclear. Checkland (1972) came with soft systems methodology (SSM), which is currently used at the initial process of a systems project to iron out the social issues before the system development should commence.

SSM is best understood in relation to its origins. It is the problem solving approach developed from systems engineering when that approach failed. And systems engineering- impressive enough as a way of carrying out technological projects- failed when attempts were made to apply it to the messy, changing, ill-defined problem situations with which managers have to

cope in their day to day professional lives. SSM is a learning system. The learning is about a complex problematic human situation and leads to taking purposeful action in the situation aimed at improvement, action that seems sensible to those concerned. SSM articulates a process of enquiry which leads to the action but that is not an end point unless you choose to make it one.

2.5.3 Ends/Means (E/M) Analysis.

This technique was developed by Wetherbe and Davis at the University of Minnesota (Wetherbe, 1991). The purpose of E/M analysis is to determine effectiveness criteria for outputs and to specify efficiency criteria for processes used to generate outputs.

The first question in E/M analysis is "What is the end or good or service provided by the business process?" The next question is "What makes the goods or services effective to the recipients or customers?" The final question is "What information is needed to evaluate that effectiveness?"

In the other part of the E/M analysis, the manager needs to specify efficiency criteria for processes used to generate outputs. This analysis asks three questions. First is "What are the key means or processes used to generate or provide goods or services? Second, "What constitutes efficiency in providing these goods or services?" Third, "What information is needed to evaluate that efficiency?"

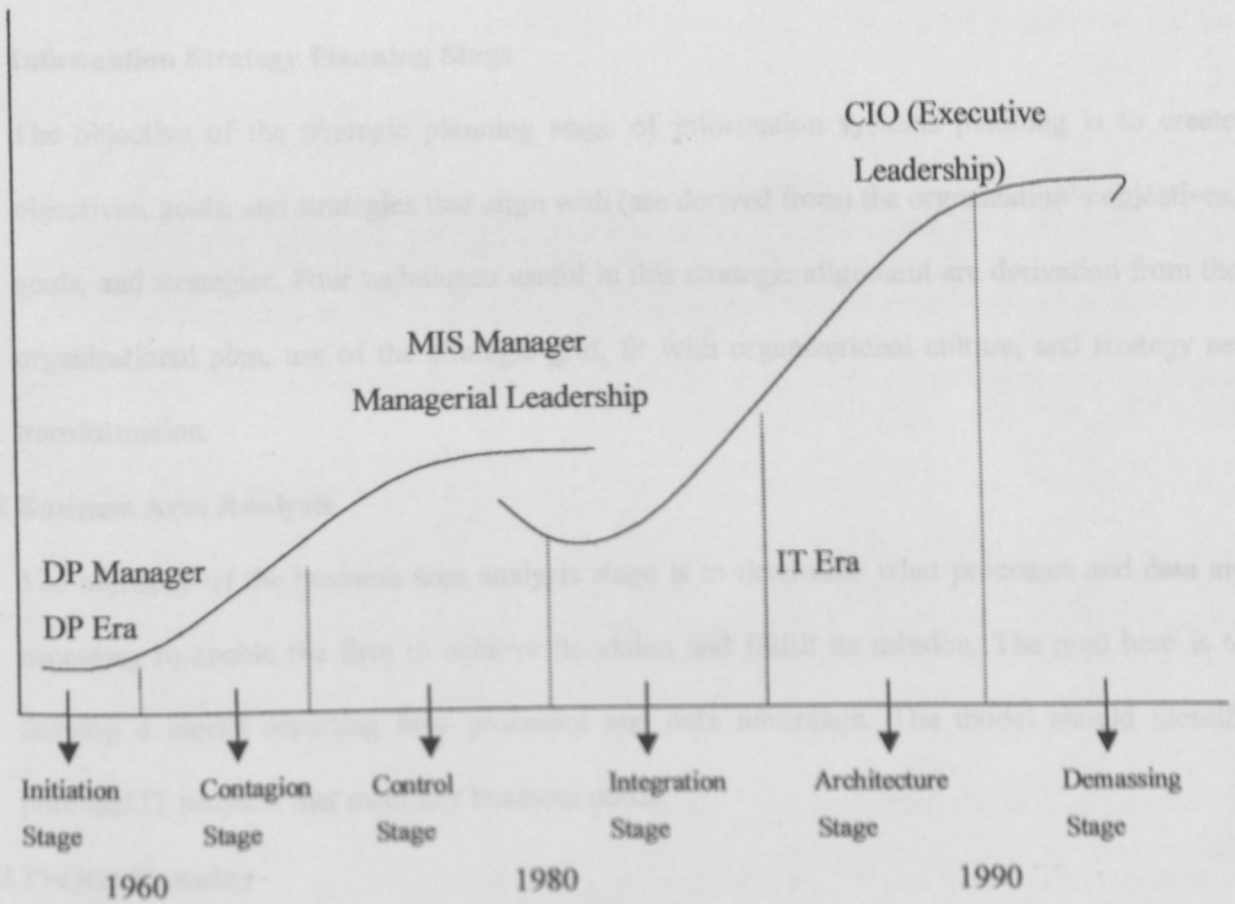
2.5.4 Stages of IT Growth

The Nolan stage model is a framework for information system planning that matches various features of information systems to stages of growth. It is a contingency theory which states: IF these features exist THEN the information system is in this stage. The basic theme is that an

organization must go through each stage of growth before it can progress to the next one; it thus provides a set of limits to planning if the organization's current stage of growth can be diagnosed (Davis and Olson, 1985).

King and Kraemer (1984) describe the Nolan Model as an evolutionist model that characterizes change by the direction the change is taking. The model describes the logic of change and the destination that is to be achieved. The strengths of an evolutionist model and thus of the Nolan Model is its explanation of the logic of development. The weakness of an evolutionist model is lack of specificity; it does not define the mechanisms of change.

IS stage analysis



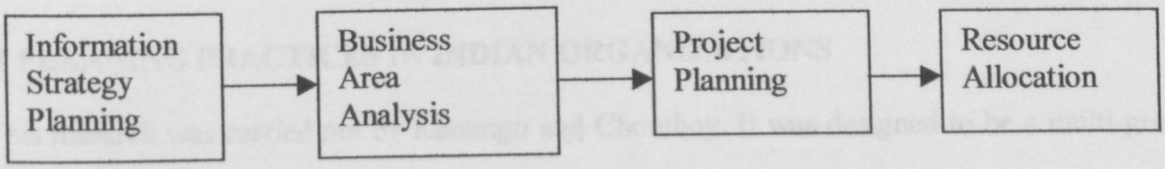
Source: *Managing with Information by Jerome Kanter pp.25.*

The Nolan stage model is a useful model to understand the general directions of change. At a

conceptual level, it aids the planning process by providing a framework for understanding change. The diagnostic measurements and prescriptive elements of the model should be viewed as general guidelines for information system planning (Davis & Olson, 1985).

2.6 BASIC FOUR-STAGE MODEL OF IT PLANNING

This model was developed by Wetherbe in 1993. The figure below shows the four main stages.



Source: *Information Systems for Managers by Reynolds pp.331.*

2.6.1 Information Strategy Planning Stage

The objective of the strategic planning stage of information systems planning is to create objectives, goals, and strategies that align with (are derived from) the organization's objectives, goals, and strategies. Four techniques useful in this strategic alignment are derivation from the organizational plan, use of the strategic grid, fit with organizational culture, and strategy set transformation.

2.6.2 Business Area Analysis

The objective of the business area analysis stage is to determine what processes and data are necessary to enable the firm to achieve its vision and fulfill its mission. The goal here is to develop a model depicting how processes and data interrelate. The model should identify potential IT projects that meet key business needs.

2.6.3 Project Planning

The goal of project planning is to clearly define the scope, benefits, and constraints (e.g., total cost, elapsed time, e.t.c.) associated with the potential projects identified during the business area analysis. It provides an overall framework within which specific applications can be

planned, scheduled, and controlled.

2.6.4 Resource Allocation

Developing the hardware, software, data communications, facilities, personnel, and financial plans needed to execute the master development plan. Provides the framework for technology and labor procurement, and identifies the financial resources needed to provide appropriate service levels to users.

2.7 IT PLANNING PRACTICES IN INDIAN ORGANIZATIONS

This research was carried out by Kanungo and Chouthoy. It was designed to be a multi-group-post-test-only research design which is an extension of the one-group-post-only model. In this case multiple organizations were identified. All the organizations were post-tested for the outcome variables – IT planning and IT use.

IT planning was measured on various dimensions like alignment with business plans, organizational participants in IT planning, whether formal planning methods are used, and the time horizon. The questionnaires were filled by the individual(s) responsible for managing information systems in the organization.

One hundred and sixty seven sets of questionnaire responses were received out of which seventy-eight sets were useable. Those that contained less than 10% of the information elicited were not selected for the final sample. Of the 78 sets of useable questionnaires, 50% of the responses were from the manufacturing sector, while 31% were from the service sector. The remaining responses, i.e., 19%, were from organizations that felt that they did not fit either in the manufacturing or services sector entirely.

A majority of organizations reported that they engaged in formal IT planning, as shown in the table below:

State of IT planning	Nature of planning		Total
	Technical Orientation	Incorporates business Issues	
Formal	105	24	129
Not Formal	33	7	40
Total	138	31	169

Source: Information Technology for Development 8 (1998) pp.75

Out of 129 organizations, 105 organizations have reported IT planning to be heavily biased toward "technical aspects". Technical aspects include items such as hardware choices, procurement standards, choice of a database environment, and selecting and justifying a programming language as an organizational standard. In other words this planning tends to be techno-centric – where technology aspects dominate over organizational or business aspects. Only 21 organizations reported using corporate plans as an input for IT plans. Most respondents were candid enough to state that their organizations did not have plans- instead they had budgets.

The results support the contention that there is a relationship between the extent of IT planning and organizational mission. Organizations that did not have elaborate IT planning frame works were characterized by a generally weak overall business plan as mentioned by the respondents themselves. This usually manifests itself in haphazard growth, inability to capitalize on new technologies and a myopic attitude that affect IT planning. A clear implication arises out of this research finding. For organizations to plan formally for IT, the organizational mission should embody a sense of purpose concisely, which can be translated into meaningful actions.

Most organizations in India are in the automating stage (Remenyi, 1991), i.e., their focus is on implementing and utilizing cost cutting information technologies. Therefore, those

organizations with large number of employees have elaborate IT planning frame works because they have been involved primarily with automating their accounting and payroll functions (i.e., they are faced with the problem of scope).

Qualitative analysis of data also revealed that most organizations reported ad hoc purchasing/procurement procedures. Such a lack of procedure points to weak IT plans. The weaknesses in IT planning arise mainly due to three reasons: quite often, top management is not involved in IT planning, MIS personnel are not part of top management, and the immensity of the task at hand overwhelms planners who end up juggling priorities and providing piece-meal solutions. Only 10 out of 169 organizations in the research sample had an MIS representative on the board of directors.

Many organizations in India adopt a "wait and watch" stance toward IT before making any major commitments hoping to ride the technology crest. In doing so, they also bring upon themselves the onerous task of automating, "informating"(Zuboff, 1988), and transformating processes in parallel. While many organizations in industrialized countries started off automating operational systems before proceeding on to "informate" and transformate, many organizations in India have attempted to skip the learning curve (or leapfrog technology) and are faced with the ramifications of having skipped the experience curves.

Managers in India still feel that the IT concept is still too premature to be applied effectively in the corporate milieu. Consequently, tactical and strategic systems have not been developed and conceptualized (planned for). Yet, at the same time, organizations find themselves having to gear up for competition from multi-nationals and other domestic organizations. From an IT standpoint this translates into concurrent development of operational as well as strategic systems.

One of the main findings of this study is that organizations in India demonstrate an average profile in terms of IT effectiveness – a profile that is consistent with findings elsewhere. Leading factors that influence IT perception and use (enablers and inhibitors) are somewhat distinct from those in the US context. Lastly, the level of IT planning in most organizations is inadequate.

2.8 SUMMARY

The following observations can be made in light of the reviewed literature:

- That there is no study that has been carried out in Kenya addressing this pertinent area of IT despite a continued increase in the usage of IT in various sectors of the economy. Can this be taken to imply that planning for information technology poses no challenges or is of little significance in the adoption and use of IT by organizations? Or else why has this area attracted little attention from researchers?

- The applicability of long-term planning in the planning for IT has been jeopardized by the rapidly changing business environment and faster rate of growth of technology. This therefore leaves most organizations at the mercy of technology given the fact that returns from investments in IT accrue after some period of time. Given this scenario, what are organizations doing as far as planning for IT is concerned? Are they still embracing long-term planning or have they come up with viable alternatives?

- Planning for IT is done at three key levels – strategic, tactical and operational. Do organizations in Kenya plan at all these levels given the resource and time constraints or do they prefer one level to the other? Is there any particular model that is being applied in IT planning in Kenya?

- IT planning methodologies were first developed in the developed world, some of them dating back to the 1970's. This raises the question as to whether these methodologies are applicable today and moreso whether they are applicable in a country like Kenya given the different contextual environments. For example Nolan's stage model where planning is done according to the growth stage may not be applicable to most organizations in Kenya where higher level technologies are normally sought even before adopting lower level technologies.

- In the Indian case study it was found out that most IT plans tend to be technical-oriented – there is more thought given to the technology than that given to what the technology can do to improve provision of goods and services. Can this finding be validated in Kenya?

- As a casual observation most managers still don't appreciate the benefits of IT and thus relegate it to operational or financial managers and are always jittery in approving IT budgets. They are obsessed with the idea of immediate results and thus consider IT to be too expensive and yet not immediately rewarding. Some executives also look at IT as an image booster for the organization and that is it (how else can one explain an executive with a PC in the office but which he seldom touches!) Can this observation be validated using researched data?

CHAPTER THREE

3.0 RESEARCH METHODOLOGY.

3.1 RESEARCH DESIGN

This was a survey study. It aimed at finding out how information technology managers in commercial banks in Kenya plan for information technology.

3.2 POPULATION OF THE STUDY

The population of the study consisted of all registered commercial banks operating in Kenya (see Appendix II). Given the size of the population a census was done.

Banks under statutory management were not considered because of their legal status and the uncertainty of their continuity.

The rationale behind the selection is that the commercial banking sector is arguably the most computerized in the industry.

3.3 DATA COLLECTION

Primary data was collected using semi-structured questionnaires administered in person by the researcher (see Appendix I for a sample Questionnaire). The questions were constructed from the study of pertinent literature.

The questionnaire was divided into three parts. Part I was intended to gather the general information about the Commercial banks under study. Part II covered general aspects of information technology usage in the banking sector. Part III delved into the issues of information technology planning. Most of the questions were open ended since no prior study had been carried out in this area. In Part III a five point Likert scale was used to capture the

opinion(s) of the IT Manager(s) on various issues pertaining to IT planning.

The questionnaire was addressed to the information technology managers (or whoever is in charge of IT resources) who were seen to have the necessary information. The "drop- and-pick- later" method of data collection was employed. This was considered appropriate in view of time constraints and in order to encourage responses.

3.5 DATA ANALYSIS AND PRESENTATION

Descriptive statistics (tables, percentages, cross-tabulation) were used to analyze and present parts 1, 2 and a section of part 3 of the questionnaire which focused on organization characteristics and general issues relating to IT planning and usage.

Factor analysis was used to analyze the likert scale responses in the last part of the questionnaire. SPSS package with Principal Component Analysis was used for analysis. The objective of Principal Component Analysis is to transform a set of interrelated variables into a set of unrelated linear combinations of these variables.

CHAPTER FOUR

4.0 RESULTS AND DATA ANALYSIS

A total of 47 questionnaires were circulated. The total number of usable responses was 28. This represented a response of approximately 59 percent. This is considered adequate for this study given the sensitivity of the study topic and the confidentiality with which banks treat information.

4.1 CHARACTERISTICS OF RESPONDENTS

Table 4.1: Firm Characteristics

CHARACTERISTIC	FREQUENCY	PERCENTAGE
Date of incorporation:		
Before 1970	9	32%
1971-1980	6	21%
1981-1990	8	29%
After 1990	5	18%
Ownership:		
Foreign owned	15	53%
Local owned	8	29%
Joint foreign and local	5	18%
Number of Branches:		
Less than 5	20	71%
Between 6 and 10	5	18%
Between 11 and 15	0	0%
Greater than 15	3	11%
Number of employees:		
1-500	28	100%
501-1000	0	0%
Above 1000	0	0%
Value of Assets:		
Below Kshs. 100 Million	0	0%
Kshs. 101-500 Million	2	7%
Kshs. 501 Million - 1Billion	21	75%

Kshs. 1.1 Billion – 1.5 Billion	2	7%
Above Kshs. 1.5 Billion	3	11%

***Source*: Research Data**

Table 4.1 above indicates that 32% of the banks studied were established before 1970, 21% between 1970 and 1980, 29% between 1980 and 1990, and 18% after 1990. This spread in dates of incorporation ensures that the sample constitutes early as well as late adopters of IT.

In terms of ownership, 53% of the banks are foreign owned, 29% locally owned, and 18% jointly owned. This can be attributed to the fact that the banking sector has been one of the most profitable in the country and thus attracting foreign investment. Liberalization and globalization forces may also help explain these results.

Most of the banks studied (71%) have less than five branches, 18% have between 6 and 10 branches, and 11% have greater than 15 branches. There was no bank with between 11 and 15 branches. This result can be attributed to the fact that most banks have reduced the number of branches as one of the ways of cutting costs.

All the banks studied had between 1 and 500 employees. This may be due to retrenchment that led to a substantial number of employees losing jobs.

Majority of the banks studied (75%) indicated their asset base to be between Kshs. 501 Million - 1Billion. 11% have an asset base of above Ksh. 1.5 Billion, 7% have between Kshs. 1.1Billion - 1.5 Billion, and 7% between Ksh. 101 - 501 Million.

4.2 INFORMATION TECHNOLOGY USAGE

Table 4.2: Mission Statements

	Frequency	Percentage
Incorporates IT	13	46%
Does not incorporate IT	15	54%
Total	28	100%

***Source*: Research Data**

Table 4.2 above indicates that only 46% of the organizations did incorporate IT aspects in their mission statements while a larger percentage of 54% did not. This implies that although IT is increasingly becoming a critical resource, it is yet to be incorporated into the overall purpose (mission) of most of the organizations.

Table 4.3: Objectives

	Frequency	Percentage
Incorporate IT	13	46%
Does not incorporate IT	15	54%
Total	28	100%

***Source*: Research Data**

Table 4.3 indicates that only 46% of the respondents indicated that pursuance and integration of the latest information technologies is an important objective for their organization. This proportion tallies with that of the mission statements in Table 4.2. 54% of the respondents indicated that IT did not form part of their objectives.

Table 4.4: IT Departments

	Frequency	Percentage
Organizations with IT Depts.	25	89%
Organizations without IT Depts.	3	11%
Total	28	100%

***Source*: Research Data**

Table 4.4 above shows that 89% of the banks had an IT department responsible for all issues pertaining to IT. 11% did not have an IT department. This implies that IT is increasingly being treated as a business function just like Marketing, Accounting and Operations.

Table 4.5: IT Managers

	Frequency	Percentage
Organizations with IT Managers	28	100%
Organizations without IT Managers	0	0%
Total	28	100%

***Source*: Research Data**

All the banks indicated that they had an IT manager. This finding may be due to the fact that IT has cut across all the facets of the organization and therefore the need to manage it separately instead of placing its management under the Finance manager or any other departmental head.

Table 4.6: Reporting Structures for IT Managers

	Frequency	Percentage
Managing Director/C.E.O	9	32%
General Manager	12	43%
Operations Manager	5	18%
Finance Manager	2	7%
Total	28	100%

***Source*: Research Data**

Table 4.6 above shows that majority of the IT managers (43%) report to the General Manager, 32% report to the Managing Director, 18% to the Operations manager and 7% to the Finance Manager. From the result 75% of the IT managers report to top management. This may be due to the fact that IT investments consume vast amounts of resources and also IT is increasingly becoming a strategic competitive tool.

Table 4.7: Level of Reliance on IT

	Frequency			
	Human Resource	**Accounting**	**Marketing**	**Operations**
High	8 (29%)	26 (93%)	6 (21%)	27 (96%)
Average	12 (42%)	2 (7%)	16 (58%)	1 (4%)
Low	8 (29%)	0 (0%)	6 (21%)	0 (0%)
Total	28	28	28	28

***Source*: Research Data**

According to Table 4.7 above, 96% of the banks indicated a high level of reliance on IT for operations followed by Accounting with 93%, then Marketing with an average reliance of 58%, and lastly Human Resource with an average reliance of 42%. This finding may be due to the fact that most of the banks' operations are information intensive and thus the high level of reliance in Operations and Accounting functions.

Table 4.8: Information Technologies Used

	Number	**Frequency**	**Percentage**
Mainframe	4	4	14%
Mini-computers	15	9	32%
Micro-computers	1025	28	100%
Database	30	20	71%
LANs	56	21	75%
WANs	18	12	43%

***Source*: Research Data**

Table 4.8 indicates that all the respondents (100%) use microcomputers. These are followed by Local Area Networks (LANs) with 75%, then Database with 71%, Wide Area Networks (WANs) with 43%, minicomputers with 32%, and mainframes with 14%. This finding may be attributed to the fact that microcomputers have become more powerful in terms of speed and memory, the need for banks to be interconnected in order to improve services to customers and

thus the need for shared databases, and also the need to have a presence on the Internet.

Table 4.9: IT Department Mission and Objectives

	Frequency	Percentage
Existent	18	64%
Non-existent	10	36%
Total	28	100%

***Source*: Research Data**

Table 4.9 indicates that majority of the IT departments (64%) have a mission statement and objectives to guide them as far as IT issues are concerned. 36% of the IT departments lack an IT mission and objectives and thus can be said to rely on the rule of thumb. This is likely to have an impact on the IT planning practices.

Table 4.10: IT Plans

	Frequency	Percentage
Existent	25	89%
Non-existent	3	11%
Total	28	100%

***Source*: Research Data**

According to Table 4.10 above, 89% of the respondents have IT plans in place while 11 % of them do not have any IT plans. This result implies that majority of the banks do actually plan for information technology.

Table 4.11: Updating of IT Plans

	Frequency	Percentage
Annually	3	12%
Semi-Annually	0	0%
Quarterly	15	60%
Others	7	18%
Total	25	100%

***Source*: Research Data**

Table 4.11 above shows that most of the IT plans are updated on a Quarterly basis (60%). 12% of the respondents however update their plans on an annual basis. This result may be due to the fast rate at which technology is changing. The others category includes those who do not have any update policy.

Table 4.12: Sub-headings in IT Plans

	Frequency	Percentage
Corporate Guidelines	15	56%
Current Operations	9	32%
Management Control Tools	12	43%
Operating Budget	20	71%
Objectives	12	43%
Strategies	9	32%
Priorities and Schedules	15	56%
Resource Projections	6	21%
Assumptions and Risks	6	21%
Policies	14	50%
Transition Plans	6	21%
Organization and Delegation	3	11%
Environmental Analysis	3	11%
Mission Statement	6	21%

***Source*: Research Data**

In Table 4.12 above, the operating budget forms part of most of the plans (71%). This may be due to resource constraints. Corporate guidelines and priorities and schedules are the next common sub-topics (56%). These are followed by Policies (50%), Objectives and Management Control Tools (43%), Current Operations and Strategies (32%), Resource Projections, Assumptions and Risks, Transition Plans, Mission Statement (21%), Organization and Delegation and Environmental Analysis (11%). The overall implication of this result is that

most of the banks still strive to remain within the operating budget which in turn implies that resources are limited.

Table 4.13: Adequacy of IT Plans

	Frequency	Percentage
Adequate	20	71%
Not Adequate	5	29%
Total	25	100%

***Source*: Research Data**

Table 4.13 above indicates that 71% of the respondents viewed their plans as being adequate while 29% indicated that they were not adequate. This result may be due to lack of a common measurement for adequacy. However, based on the responses above we may say that IT plans in use are adequate.

Table 4.14: Frequency of Planning

	Frequency	Percentage
Yearly	19	68%
Twice in a year	3	16%
Quarterly	3	16%
Monthly	0	0%
Total	25	100%

***Source*: Research Data**

Table 4.14 above indicates that most organizations (68%) undertake planning on a yearly basis. Only 16% plan on a half-yearly basis and 16% on a quarterly basis. This finding may be due to time and resource constraints. It also implies that planning on a long-term (3-5 years) basis is not commonly practiced currently.

Table 4.15: Participants in IT Planning

	Frequency	Percentage
Managing Director/CEO	24	96%
IT Manager	21	84%
Departmental Managers	15	60%
User Representatives	13	52%
An IT Consultant	12	48%
Others	4	16%

***Source*: Research Data**

Table 4.15 indicates that the Managing Director is a key participant in the IT planning process (96%). This is followed by the IT Manager (84%), Departmental Heads (60%), User Representatives (52%), IT Consultant (48%), and others (global headquarters for some foreign banks) (16%). This finding may be due to the fact that the Managing Director controls the resources of the organization and thus must be consulted and the IT manager is in charge of all IT issues. However users seem not to be involved most of the time and yet are the systems' greatest clients.

Table 4.16: IT planning is part of Organizational Planning

	Frequency	Percentage
Yes	20	80%
No	5	20%
Total	25	100%

***Source*: Research Data**

Table 4.16 indicates that IT planning is part of organizational planning (80%). This may be due to the forces of liberalization and globalization which drive organizations into adopting up-to-date information technology (ies) in order to survive in what has become a global market place. Only 20% of the respondents indicated that IT is planned for in isolation of organizational

planning.

Table 4.17: State and Nature of IT Planning

State of IT Planning	Nature of IT Planning		Total
	Technical Orientation	Incorporates Business Issues	
Formal	6 (24%)	16 (64%)	22 (88%)
Informal	0 (0%)	3 (12%)	3 (12%)
Total	6 (24%)	19 (76%)	25 (100%)

***Source*: Research Data**

Table 4.17 above indicates that majority of the banks (88%) carry out formal IT planning while a paltry 12% still embrace informal IT planning. Of those whose planning is formal, 64% embrace a business-oriented approach while 24% are technical oriented. All those whose planning is not formal incorporate business issues in their planning. 76% of the banks consider the incorporation of business issues in IT plans as important while 24% are for a technical oriented approach. This result may be attributed to the fact that IT is increasingly becoming a critical business resource at par with capital, labor, land, and entrepreneurship.

Table 4.18: IT Planning Methods

	Frequency	Percentage
Critical Success Factor (CSF)	6	24%
Business Systems Planning (BSP)	6	24%
Ends/Means Analysis	6	24%
Stages of IT Growth	6	24%
Others	3	12%

***Source*: Research Data**

Table 4.18 above indicates that 24% of the banks utilize the critical success factor method, 24% the Business Systems Planning method, 24% the Ends/Means Analysis method, and 24%

the Stages of IT Growth method. The others category include those who were not sure which method was being used in the organization. A look at the description of planning procedures did however show that most of the methods were modified to fit the bank's operating environment.

Table 4.19: Are the Planning Methods Used Adequate?

	Frequency	Percentage
Yes	24	96%
No	1	4%
Total	25	100%

***Source*: Research Data**

In Table 4.19, 96% of the respondents indicated that the planning methods in use help them meet the IT planning objectives. 1% felt that the method(s) used was inadequate. This implies that even though the planning methodologies were developed in the West, they can still be fine-tuned to fit the Kenyan environment. To the extent that the planning methodologies currently in practice have helped the firms achieve their IT planning objectives, they can be considered as adequate.

4.3 FACTOR ANALYSIS

Table 4.20: Statements Used in the Questionnaire

1. Planning is business-oriented.
2. The organization uses new untested technology.
3. There is a clear acquisition policy for IT products.
4. The organization has a strategic policy for IT.
5. IT projects are completed within set deadlines.
6. The organization ensures that new information systems are compatible with current systems.
7. IT Manager has sufficient authority and influence.
8. There is adequate participation in the planning process by all participants.
9. Emphasis is placed on proper co-ordination between IT staff, the users and the management during the planning process.
10. The organization makes accurate initial cost estimates for the new information systems.
11. IT planning objectives are always achieved.
12. The IT plans are aligned to the organizational mission, objectives, and goals.
13. IT costs have kept rising.

A summary statistics was first performed. The results are shown below in Table 4.21.

Table 4.21: Descriptive Statistics

Variable	Mean	Std. Deviation	Analysis N
1	1.54	.92	28
2	3.64	1.47	28
3	1.50	.51	28
4	1.79	.79	28
5	1.64	.62	28
6	1.89	.92	28
7	1.89	1.03	28
8	2.14	.80	28
9	1.50	.64	28
10	1.50	.51	28
11	2.00	.38	28
12	1.89	.92	28
13	1.50	.64	28

***Source*: Research Data**

A score of one (1) represented strongly agree and five (5) strongly disagree.

A look at the descriptive statistics above reveals that, in general, respondents tended to strongly agree with statements 1, 3, 9, 10 and 13. These statements related to the nature of IT planning, IT acquisition policy, Coordination of the planning effort, Cost estimates of new systems, and lastly Adoption of new technology.

Respondents tended to agree with statements 4 (Strategic IT policy), 5(IT project deadlines), 6(Compatibility of systems), 7(IT manager's authority and influence), 8(Participation in the planning process), 11(IT planning objectives achievement), and 12(Alignment of IT plans to organizational mission, objectives, and goals).

Respondents however generally disagreed with statement 2 (the organization uses new untested technology).

Principal Components Analysis (PCA) was performed on the respondents' scores. A total of five factors or components were extracted. The achieved communalities are shown in Table 4.22 below.

Table 4.23: Communalities

Variable	Extraction
1	.933
2	.945
3	.932
4	.913
5	.888
6	.813
7	.987
8	.792
9	.972
10	.848
11	.838
12	.946
13	.972

***Source*: Research Data**

Extraction Method: Principal Component Analysis.

Communality expresses the proportion of variance that is extracted or accounted for by the factors. For instance, 98% of variance observed in variable 7 is explained by the factors. Similarly, 97% of variance observed in variable 9 is explained by the factors. An analysis of the achieved communalities reveals that most of the variation in the variables was captured by the factors. The lowest variation was captured was for variable 8 with a communality of 79%.

Table 4.23: Total Variance Explained

	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.422	38.726	38.726	3.809	27.209	27.209
2	3.104	22.168	60.894	3.501	25.004	52.213
3	1.762	12.584	73.477	1.942	13.872	66.084
4	1.232	8.799	82.277	1.846	13.183	79.267
5	1.038	7.413	89.690	1.459	10.423	89.690

***Source*: Research Data**

Extraction Method: Principal Component Analysis.

Table 4.23 above shows the total variance explained for each of the extracted factors. Each factor accounts for a decreasing proportion of variance subject to the condition that it is uncorrelated to all previous factors. For a factor to account for at least one variable, it should have a variance of at least 1. This serves as a cut-off point for determining the number of factors to be extracted.

Looking at the figures, factor 1 accounts for 38.7% of the total observed variation, factor 2 explains 22.2% of the total variation, and so on. The five-factor solution explained 89.7% of the total observed variation.

Table 4.24: Rotated Components Matrix[a]

Component	1	2	3	4	5
VAR1	-.226	.150	.891	6.165E-02	-.248
VAR2	-6.738E-03	-9.098E-02	-.677	-.662	-.199
VAR3	.770	.438	-.181	.146	-.307
VAR4	.893	.296	.111	-.125	-5.001E-03
VAR5	.114	.867	.126	.175	.276
VAR6	.825	2.234E-02	-.223	-.193	.212
VAR7	.702	-6.542E-02	3.764E-02	.698	-3.169E-02
VAR8	-.287	.286	.161	.765	-.126
VAR9	.267	.941	.119	2.324E-02	1.794E-02
VAR10	-.141	.670	.127	.437	.415
VAR11	.159	.227	-7.347E-02	-3.728E-02	.869
VAR12	.841	.174	.216	-3.265E-02	.400
VAR13	.267	.941	.119	2.324E-02	1.794E-02

***Source*: Research Data**

Extraction Method: Principal Component Analysis. **Rotation Method**: Varimax with Kaiser Normalization.
a Rotation converged in 10 iterations.

Table 4.24 above shows the results of orthogonal Varimax Rotation with Kaiser Normalization done on the initial factor matrix. "Varimax rotation attempts to clean up the factors in the factor loading table – that is, force the entries in the (initial factor matrix) columns to be near 0 or 1" (Churchill, 1999:909). Such loading shows more clearly what variables go together and are thus more interpretable. This final rotated matrix represents both a pattern and a structure matrix, since it is an orthogonal-factor matrix. The coefficients in the matrix represent both regression weights and correlation coefficients.

In the results above, variables 3,4,6,7 and 12 load heavily on factor 2. A summary of variables that load heavily on the various factors is shown in Table 4.25 below:

Table 4.25: Heavily Loading Variables

Factor	Variables
1	3,4,6,7,12
2	5,9,10,13
3	1
4	8

5	11

***Source*: Research Data**

The statements that make up the various factors are listed in Table 4.26 below:

Table 4.26: Factors and Constituent Statements

Factor	Statements
1	• There is a clear acquisition policy for IT products. • The organization has a strategic policy for IT. • The organization ensures that new information systems are compatible with current systems. • The IT manager has sufficient authority and influence. • The IT plans are aligned to the organizational mission, objectives, and goals.
2	• IT projects are completed within set deadlines. • Emphasis is placed on proper coordination between IT staff, the users, and the management during the planning process. • The organization makes accurate initial cost estimates for the new information systems. • IT costs have kept rising.
3	• Planning is business oriented.
4	• There is adequate participation in the planning process by all participants.
5	• IT planning objectives are always achieved.

***Source*: Research Data**

4.4 FACTORS CONSIDERED IN IT PLANNING

Respondents were asked to give the main factors they consider when planning for IT. The following were the responses:

- Management Guidelines. Most of the respondents indicated project approval and budgetary allocations as falling under this category.
- Availability of personnel with the required expertise.

- Time. Technology is changing so fast such that a plan should be flexible enough to accommodate the arising changes.
- Infrastructure - especially communications infrastructure.
- End-user requirements.

CHAPTER FIVE

5.0 SUMMARY AND CONCLUSION

The main objectives of this study were to find out how commercial banks plan for information technology and to determine the factors that are considered in planning for information technology in Kenyan commercial banks.

A Questionnaire based on available literature and discussions with information technology academicians was used to gather data. The data collected was analyzed using tables, percentages, proportions and factor analysis.

5.1 CONCLUSION

A majority of organizations reported that they have IT plans in place. Out of 28 banks studied, 25 banks had established plans for IT that act as a guide to the acquisition and use of information technology. From this finding it can be concluded that most banks actually do plan for IT in advance and therefore do not adopt the "wait and watch" approach as evidenced in Indian organizations.

Research results also indicate that the information technology plans are updated more regularly (on a quarterly basis for most companies). This shows that these organizations constantly monitor and incorporate the fast changes witnessed in the information technology area. Thus it is important that IT plans be flexible enough to adjust so as to take advantage of new and emerging technologies.

Planning for information technology is done on a yearly basis for most banks (68% of the banks studied as indicated in Table 4.13). This may be attributed to the time and resources consumed by the planning process and the fact that these resources are limited in

most organizations. Long-term planning (3-5 years) is no longer feasible in IT due to the fast pace at which technology is changing as indicated by most respondents.

The results indicate that IT planning is business-focussed as opposed to technical oriented (Table 4.17). This finding contradicts that of the Indian case where majority of the organizations' IT plans were technical-oriented. The planning process for most of the banks was also reported to be formal (Table 4.17).

The findings also indicate that the top management plays a key role in the planning process (Table 4.15). This leads to the conclusion that IT planning in most organizations is top-down in nature.

IT planning is treated as part of organizational planning in most banks (Table 4.16). The overall business plan impacts on IT planning. As observed by Kanungo and Chouthoy (1998) in a study of Indian organizations, organizations with weak overall business plans did not have elaborate IT planning frameworks. This manifests itself in haphazard growth, inability to capitalize on new technologies and a myopic attitude that affect IT planning. Therefore IT planning should be considered as part of the overall organizational business plan.

The IT function is formalized (Table4.4 and 4.5) in most banks with most of the IT managers reporting to the Managing Director (Table 4.6). The formalization of the IT department provides a balance between planning capacity and action-orientation. This can also prove to be a long-term management ability as it supports organizational learning.

The common planning methodologies documented in literature are equally employed (Table

4.18). 96% of the respondents indicated that they are satisfied with the methodology(ies) being employed (Table 4.19) and that the IT plans in place are adequate.

From the factor analysis we can draw the following conclusions:

- The organization should have a clear acquisition policy for IT products.
- The organization should have a strategic policy for IT.
- The organizations must ensure that any new information systems should be compatible with the current systems.
- The IT manager should be bestowed with sufficient authority and influence to deal with all issues pertaining to information technology.
- The IT plans should be aligned to the organizational mission, objectives, and goals.
- Time is an important consideration in IT planning.
- There should be proper coordination between the IT staff, the Users, and Management during the planning process.
- IT costs should be kept in check so that the initial estimates are as accurate as possible.
- IT planning should be business-oriented as opposed to technical-oriented.
- All the participants in the planning process shoould be encouraged to actively participate in the process.
- IT planning should be geared towards achieving the IT planning objectives.

Generally, Kenyan banks are doing well on the above factors. It was however found that the costs of IT have kept rising over the years. This may be due to the rapid rate of change in technology that may render earlier technologies redundant. This may also serve to show that there is still room for improvement as far as planning for IT is concerned.

Although all the most common methodologies (Table 4.18) were found to be in use, the manner in which they are implemented slightly differs from what the proponents intended. While this can be argued to be due to the contextual factors, it is important that the basic premise of each of the methodologies be observed. The banks could also benefit from the soft systems methodology (SSM) which though not currently in use could help iron out social issues that may crop up during the planning process.

With evidence adduced that the business world is a complex system poised at the edge of chaos (Phelan, 1995), IT managers could also borrow from the chaos theory (defined by Kellert: 1993 as "the qualitative study of aperiodic behaviour in deterministic nonlinear dynamical systems".

5.2 LIMITATIONS OF THE STUDY

Some commercial banks refused to participate in the study. However, there is no reason to believe that they could have responded differently.

The time available to complete the study was inadequate. More time to gather literature from other parts of the world via electronic libraries could have helped enrich the study.

Conducting research on information technology, and especially in the banking sector where IT is considered critical for operations is made difficult by the art of confidentiality. Some respondents refused to indicate the names of their banks on the questionnaire although they cooperated in the study. It is difficult to know whether this phenomenon also made some respondents withhold some information or actually falsify it.

The IT managers were relied upon for data in this study. This therefore raises the possibility of

self-assessment bias.

5.3 SUGGESTIONS FOR FURTHER RESEARCH

This study principally focused on the commercial banking sector. A similar study could be carried out in the other sectors of the economy to find out whether there is any significant difference.

A study could also be carried out focusing on IT planning at various levels (Strategic, Tactical, and Operational).

The applicability of the various IT planning methodologies can also be examined as a separate study.

Lastly, a study can be carried out to come up with a model that can be relied upon by organizations in the Kenyan environment in planning for information technology.

APPENDICES

APPENDIX I: QUESTIONNAIRE

SECTION A: GENERAL

(**Tick ✓**) where appropriate.

1. Name of your organization.....(Optional)

2. Date of incorporation:
   - ( ) Before 1970
   - ( ) 1971-1980
   - ( ) 1981-1990
   - ( ) After 1990

3. Ownership
   - ( ) Local
   - ( ) Foreign
   - ( ) Joint venture

4. Number of Branches
   - ( ) Less than 5
   - ( ) Between 6 to 10
   - ( ) Between 11 to 15
   - ( ) Greater than 15

5. Number of employees
   - ( ) 1-500
   - ( ) 501- 1000
   - ( ) Above 1000

6. Value of assets
   - ( ) Below Kshs. 100 million
   - ( ) Kshs. 101 million- 500 million
   - ( ) Kshs. 501 million- Kshs. 1 Billion
   - ( ) Kshs. 1.1 Billion- 1.5 Billion
   - ( ) Above Kshs. 1.5 Billion

7. State the mission statement of your bank .....

.....

.....

8. State the objectives of your bank in order of importance

i) .....

ii) .....

iii) .....

iv) .....

v) .....

SECTION B: INFORMATION TECHNOLOGY

9. a) Does your organization have an IT department?

( ) Yes ( ) No

b) If no, who provides your IT services?

.....

10. Do you have an IT manager? ( ) Yes ( ) No

If the answer above is no, who is in charge of computer facilities?

.....

11. Who does the IT manager (or whoever is in charge of IT resources) report to?

.....

12. When did your organization start using computers in its operations?

.....

13. Please state the level of reliance on IT in your various departments /functional areas.

	High	Average	Low
Human resource	( )	( )	( )
Finance/ Accounting	( )	( )	( )
Marketing	( )	( )	( )
Operations/Production	( )	( )	( )
Others (please specify)	( )	( )	( )

14. What type of information technologies does your organization use? Please specify number. (Tick all applicable).

	Number		Number
( ) Main frame	.....	( ) Database	.....
( ) Mini computers	.....	( ) LANs	.....
( ) Micro computers	.....	( ) WANs	.....
( ) Others			

15. Are computer users within the organization conversant with the information technologies they are currently using?

( ) Yes ( ) No ( ) Other (Specify).....

16. State the mission of the IT department (if any).....

.....

.....

17. State three key objectives of the IT department (if any)

a) .....

b) .....

c) .....

PART C: INFORMATION TECHNOLOGY PLANNING

18. a) Do you have an information technology plan?

( ) Yes ( ) No

b) If your answer is yes, how often is the plan updated?

.....

c) Which of the following sub-topics apply to your plan? (Tick all applicable).

( ) Corporate guidelines	( ) Environmental analysis
( ) Current Operations	( ) Mission statement
( ) Objectives	( ) Assumptions/Risks
( ) Strategies	( ) Policies
( ) Management control tools	( ) Transition plans
( ) Priorities and schedules	( ) Organization and delegation
( ) Resource projections	( ) Operating budget

d) Do you consider the IT plan in your organization adequate as far as IT acquisition and use is concerned?

( ) Yes ( ) No

19. Who are the participants in the IT planning process? (Tick all applicable).

a) Top management – e.g. the CEO or MD or a representative ( )
b) IT Manager (or whoever is in charge of IT) ( )
c) Departmental Heads ( )
d) User Representatives ( )
e) An IT Consultant ( )
f) Others .....

20. How often is planning for IT carried out?

a) Yearly ( ) b) Twice in a year ( ) c) Quarterly ( )

d) Monthly ( ) e) Any other ( ) .....

21. Is IT planning considered part of organizational planning? Explain briefly.

.....

.....

.....

22. How can you describe the planning process in your organization?

( ) Formal ( ) Informal

23. Kindly state the time horizons for the following plans.

Plan	Time Horizon
Strategic	.....
Tactical	.....
Operational	.....
Contingent	.....
Others	.....

24. Briefly describe the planning procedure of your organization.

.....

.....

.....

.....

25. a) Do you have a specific IT planning method(s) that is used by your organization?

( ) Yes ( ) No

If Yes, which of the following method(s) do you use? (Tick all applicable).

i. Critical Success Factors (the few key areas where things must go right if the business is to flourish) ( )

ii. Business Systems Planning (top-down planning and bottom-up implementation) ( )

iii. Ends/Means Analysis (identifying the output required and then determining the means to achieve it) ( )

iv. Stages of IT growth (developing plans depending on the stage of growth of the technology) ( )

v. Others (specify)

.....

.....

.....

b) Do you think the methods used have helped your organization achieve its objectives?

( ) Yes ( ) No

Explain your answer briefly .....

.....

26. State some of the critical factors that you consider important in planning for IT

i) .....

ii) .....

iii) .....

iv) .....

Listed below are statements dealing with various issues in information technology planning. Please tick the bracket to specify the extent to which you agree with each statement.

5 Strongly Disagree 4 Disagree 3 Indifferent 2 Agree 1 Strongly Agree

	5	4	3	2	1
27. IT Planning is business-oriented	( )	( )	( )	( )	( )
28. The organization uses new untested technology	( )	( )	( )	( )	( )
29. There is a clear acquisition policy for IT products	( )	( )	( )	( )	( )
30. The organization has a strategic policy for IT	( )	( )	( )	( )	( )
31. IT Projects are completed within set deadlines	( )	( )	( )	( )	( )
32. The organization ensures new information systems are compatible with current systems	( )	( )	( )	( )	( )
33. The IT manager has sufficient authority and influence	( )	( )	( )	( )	( )
34. There is adequate participation in the Planning process by all participants	( )	( )	( )	( )	( )
35. Emphasis is placed on proper coordination Between IT staff, the users and the management during the planning process	( )	( )	( )	( )	( )
36. The organization makes accurate initial costs Estimates for the new information systems	( )	( )	( )	( )	( )
37. IT planning objectives are always achieved	( )	( )	( )	( )	( )
38. Top Management are committed to IT Planning	( )	( )	( )	( )	( )
39. The IT plans are aligned to the organizational mission, objectives, and goals	( )	( )	( )	( )	( )
40. IT costs have kept rising	( )	( )	( )	( )	( )

Thank you very much for your time and participation in this study.

APPENDIX II: LETTER OF INTRODUCTION

Dear Sir/Madam,

RE: INFORMATION TECHNOLOGY PLANNING PRACTICES IN KENYAN BANKS

I am a postgraduate student at the faculty of commerce, University of Nairobi. As part of my MBA (Management Information Systems) course requirements I am undertaking a research project that seeks to establish the information technology planning practices with a special emphasis on the commercial banks in Kenya.

To satisfy information requirements for this research I am administering a questionnaire to information technology/systems managers (or whoever is in charge of information systems) in the commercial banks in Kenya.

I would like your assistance in completing the attached questionnaire. I would be most grateful if you can spare some time to answer these questions to the best of your knowledge and ability. The information requested is needed for purely academic purposes and will be treated in strict confidence and will not be used for any other purpose other than for my research.

Any additional information you might consider necessary for this study is most welcome and can be written on the backside of the questionnaire.

Your assistance in completing the questionnaire is greatly appreciated.

Yours Sincerely,

Nyambati N. Richard

Supervisor
James M. Njihia
Department of Management Science
University of Nairobi

APPENDIX III

COMMERCIAL BANKS OPERATING IN KENYA AS ON DECEMBER 2000

1. ABN-AMRO BANK N.V
P.O. BOX 30262, NAIROBI

2. AFRICAN BANKING CORP. LTD
P.O. BOX 30359, NAIROBI

3. AKIBA BANK LTD
P.O. BOX 49584, NAIROBI

4. BANK OF BARODA (K) LTD
P.O. BOX 30033, NAIROBI

5. BANK OF INDIA
P.O. BOX 30246, NAIROBI

6. BARCLAYS BANK OF KENYA LTD
P.O. BOX 30120, NAIROBI

7. BIASHARA BANK OF KENYA LTD
P.O. BOX 30831, NAIROBI

8. CFC BANK LIMITED
P.O. BOX 72833, NAIROBI

9. CHASE BANK (K) LTD
P.O. BOX 64042, NAIROBI

10. CHARTER HOUSE BANK LTD
P.O. BOX 43252, NAIROBI

11. CITIBANK N.A.
P.O. BOX 30711, NAIROBI

12. CITY FINANCE BANK LTD
P.O. BOX 22741, NAIROBI

13. COMMERCIAL BANK OF AFRICA LTD
P.O. BOX 30437, NAIROBI

14. CONSOLIDATED BANK OF KENYA LTD
P.O. BOX 51337, NAIROBI

15. COOPERATIVE BANK OF KENYA LTD
P.O. BOX 48231, NAIROBI

16. COOPERATIVE MERCHANT BANK
P.O. BOX 48231, NAIROBI

17. CREDIT AGRICOLE INDOSUEZ
P.O. BOX 69562, NAIROBI

18. CREDIT BANK LTD
P.O. BOX 61064, NAIROBI

19. DAIMA BANK LTD
P.O BOX 54319, NAIROBI

20. DEVELOPMENT BANK OF KENYA LTD
P.O. BOX 30483, NAIROBI

21. DIAMOND TRUST BANK KENYA LTD
P.O. BOX 61711, NAIROBI

22. EQUATORIAL COMMERCIAL BANK LTD
P.O. BOX 52467, NAIROBI

23. EURO BANK LTD
P.O. BOX 43071, NAIROBI

24. FIDELITY COMMERCIAL BANK LTD
P.O. BOX 34886, NAIROBI

25. FINA BANK LIMITED
P.O. BOX 20613, NAIROBI

26. FIRST AMERICAN BANK OF KENYA LTD
P.O. BOX 30691, NAIROBI

27. GUARDIAN BANK LTD
P.O. BOX 46983, NAIROBI

28. GIRO COMMERCIAL BANK LTD
P.O. BOX 46739, NAIROBI

29. HABIB BANK A.G. ZURICH
P.O. BOX 48361, NAIROBI

30. IMPERIAL BANK LTD
P.O. BOX 44905, NAIROBI

31. KENYA COMMERCIAL BANK LTD
P.O. BOX 48400, NAIROBI

32. MIDDLE EAST BANK KENYA LTD
P.O. BOX 47387, NAIROBI

33. NATIONAL INDUSTRIAL CREDIT BANK LTD
P.O. BOX 44599, NAIROBI

34. PRIME BANK LTD
P.O. BOX 43825, NAIROBI

35. SOUTHERN CREDIT BANKING CORP. LTD
P.O. BOX 66171, NAIROBI

36. STANDARD CHARTERED BANK (K) LTD
P.O. BOX 30003, NAIROBI

37. TRANS-NATIONAL BANK LTD
P.O. BOX 34353, NAIROBI

38. K-REP BANK LTD
P.O. BOX 39312, NAIROBI

39. HABIB BANK LTD
P.O. BOX 6906, NAIROBI

40. INVESTMENTS AND MORTGAGES BANK LTD
P.O. BOX 30238, NAIROBI

41. DUBAI BANK
P.O. BOX 11129, NAIROBI

42. NATIONAL BANK OF KENYA LTD
P.O. BOX 72866, NAIROBI

43. PARAMOUNT UNIVERSAL BANK LTD
P.O. BOX 14001, NAIROBI

44. RELIANCE BANK LTD
P.O. BOX 39865, NAIROBI

45. STANBIC BANK KENYA LTD
P.O. BOX 30550, NAIROBI

46. VICTORIA COMMERCIAL BANK LTD
P.O. BOX 41114, NAIROBI

47. INDUSTRIAL DEVELOPMENT BANK LTD
P.O. BOX 44036, NAIROBI

APPENDICES

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