FACTORS INFLUENCING SUCCESSFUL IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING SYSTEMS IN PARASTATALS IN KENYA

BY

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DECLARATION

This project is my original work and has NOT been presented for a degree in any other university or any other award.

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ABBREVIATIONS AND ACRONYMS

ERP	Enterprise Resource Planning
CSF	Critical Success Factors
IS	Information System
SAP	Systems Applications and Products
MNC	Multi National Corporations
IT	Information Technology
ICT	Information and Communication Technology

ABSTRACT

The rapid development in Information systems has resulted in a border-less business environment along with an amplified market competition. Traversing through such a trend globally, organisations have had to significantly restructure, adopt and implement Enterprise Resource Planning (ERP) systems to automate their prime business processes and thereby enhance their organizational productivity with lower costs and prompt service delivery to fulfil consumer demands. Despite the adoption and implementation of ERP systems being considered challenging and expensive, the captains of the industry have pushed their organizations through the rigors of modernizing Information Systems after exhaustive investigation of the pointers as to why the adoptions and implementation of ERP systems is necessary. The purpose of the study was to investigate the factors influencing the successful implementation of ERP, a software system that is used to manage and coordinate all the resources, information, and functions of a business. A survey of all parastatal organizations in Nairobi was conducted to entail the examination of four key Critical Success Factors (CSF) which include End User Training, Top Management Support, Key Users Expertise and Knowledge and Planning & Management. The target population was all the parastatal organizations who are users of the ERP system in Nairobi. A sample of 5 respondents from each organization was used in the study. Managers participating in the study were purposively selected while end users were sampled using a stratified random sampling approach. The study collected data through self administered questionnaires which was analyzed qualitatively through content analysis to identify emerging themes and patterns that formed the basis of discussing the research findings.Notwithstanding; the implications of this research decimated the scope of how efficient and viable ERP systems are to parastatal organizations in Kenya. It was found that all the managers were computer literate. All the staffs indicated that non-managerial staff needed training in ERP for its successful implementation. It was established from the study that 87.50% of the managers were directly involved in using ERP system and all the managers received training on the use of ERP before it was implemented in the organization. It was also established that 92% of the managers indicated that technology is needed for the implementation of ERP in the organization. The study concludes that the managers were computer literate and had attained computer packages plus professional packages. IT department had the leading role in the implementation process. Staff should be trained and training of trainers is the best approach. Major changes the company faced during ERP implementation was updating/ increasing IT and other equipment. The study recommends that the organizations should ensure all the managers are computer literate and have attained computer packages plus professional packages. Managers should be trained in all aspects of ERP. The training should be appropriate. The organizations should invest in technology for successful implementation of ERP. .

OPERATIONAL DEFINITION OF TERMS

Project: A project is an interrelated set of activities that has a definite starting and ending point and results in the accomplishment of a unique often major outcome (Clements, 2007).

Project Management: An interrelated group of processes that enables the project team to achieve a successful project

Project Cycle: A sequence of events which a project follows. These events, stages or phases can be divided into several equally valid ways, depending on the parties involved.

Critical Success Factors: An element that is necessary for a project to achieve its mission

Stakeholders: The management using ERP systems

End Users: Non Managerial Staff

Key Users: Managerial Staff

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

A project is an interrelated set of activities that has a definite starting point and a definite ending point, and results in the accomplishment of a unique often major outcome (Clements, 2007). Project management is therefore the discipline of planning, organizing, securing and managing resources to bring about the successful completion of specific project goals and objectives (Harvey 2003) while honouring the identified constraints of scope of work, time and budget (Cleland D. & Gareis R 2006).

Every project has to pass through the five phases of project management: Conception phase, Definition phase, Planning and organizing phase, Implementation phase and Project handover phase. Project implementation is an application or execution of an idea, plan, model, specification, design, standard and policy.

ICT adoption for business goes beyond simply buying a computer and being connected to the Internet. It is more beneficial to set up integrated information systems to support the functional areas of the business such as the operations and management of accounting, finances, manufacturing, production, transportation, sales & distribution, human resources, supply chain, customer relationship and E-business. One of these systems is the Enterprise Resource Planning (ERP) Software.

While companies in Africa have historically been slower off the mark in using IT to automate business processes, they are fast catching up and those still relying on manual systems are no longer commonplace. According to Paul Marketos (2010), just seven years ago it was not uncommon to find large companies in countries such as Kenya with turnovers in excess of 60-

million still using manual ledgers. Now, having automated their accounting processes, many are looking at fully-integrated enterprise resource planning (ERP) solutions to improve efficiencies and profits. This is attributed to a greater availability of solutions, such as Systems Applications and Products (SAP) Business One, which are better-geared for mid-tier enterprises. But as much as the ERP requirements of companies in Africa are largely consistent with those of businesses in South Africa or elsewhere in the world, they aren't easily addressed by larger ERP solutions. This is due to their size, the skills level of users and the lack of locally-relevant support. For an ERP solution to fly in an African business, the software has got to be intuitive and user-friendly. It also has to be uncomplicated to implement and maintain. In a nutshell, it's got to be right-sized for Africa.

For years, many ERP vendors have serviced their customers in Africa from a distance and as a result, companies sometimes battle to find the necessary technical support for implementations, maintenance and customizations. However, this is changing as ERP becomes more widely-adopted by African businesses because vendors and consultants can justify having a presence in the region, Marketos (2010), adding that Blue key's own success in the African region, more specifically in Kenya where it has an office, is due to its approach to up-skill and empower locally-based staff to provide high-quality support services rather than try to service customers from South Africa.

1.1.1 ERP in Parastatals in Kenya

A parastatal is an organisation formed or controlled by the Government. They perform specific roles in a country and their activities are found in such areas as transport, communication, financial and management, production and marketing. Parastatals are formed to provide services that are generally in public interest that private sector may not provide on grounds of heavy

capital investment needed at initial stages. Most parastatals are formed by acts of parliament while others are formed under the existing laws. When formed under acts, such acts outline proposed names of the parastatal, aims and objectives, goals and services to trade, location, appointment of top executives, powers of board of directors and ministry under which they function.

The management of a parastatal is by the chairman and the members of the board of directors, all appointed by the relevant minister. The chairman and the board of directors are responsible for implementation of aims and objectives of the parastatals. (researcher 2013).

The first ERP was implemented in Kenya in 1999 by Kenya Power Ltd as part of a transformation strategy to enhance its efficiency(Quinn J J 2002). This provided a benchmark for other parastatals to start embracing ERP systems as a tool for business transformation. The ERP implementation however has been undertaken with varied rates of success and failure, and some of the successful ones include the implementations at Kenya revenue authority, Kenya Pipepline Company and KenGen.

1.2 Statement of the Problem

In the face of newly emerging dynamics in the business environment, organizations are increasingly feeling compelled to implement systems that will help them to better adapt to the evolving environmental challenges. One of the implementing systems that is globally acceptable is ERP system.

The challenge for many organizations was to consolidate heterogeneous systems within the organization. Most of them were using separate systems for their different divisions, such as Finance, Human Resource, Sales and Marketing, Supply Chain and others.

When looking at the processes within those different areas, however, it was found that most of them flow interdepartmentally, so what the organizations needed was a system platform that would provide integration for processes throughout their departmental systems and help achieve expected huge time-savings, rapid return on investment and a more effective ERP environment once all systems went online. Most of the organizations were willing to surrender existing business processes in lieu of packaged processes from a competent ERP solution that would offer something better.

The ERP solution would help assure maximum efficiency and minimal waste, which helps to save the environment while cutting costs, all the while enabling optimum product quality and full traceability. It would also help the organizations to integrate their entire line into a network, integrate all their existing systems, achieve exceptional performance planning and repeatability, as well as life-cycle management, and achieve the greatest efficiency at the lowest cost.

From the background, it further found that these processes were only successful if they involved the top management level of staff to lead this implementation of ERP systems.

Although, ERP systems have gained numerous benefits to organizations, research has shown that the Implementation of ERP system is complex, resource consuming and costly procedure (Al-Mashari et al., 2003; Finney & Corbett, 2007; Häkkinen & Hilmola, 2008; King and Burgess, 2006; Saatcioglu, 2009). Managers of ERP implementation projects face extensive problems and challenges (Dazdar & Sulaiman, 2009). Due to insufficient organizational analysis and difficulties of ERP implementation, the failure rate of ERP implementation project is high (Francoise et al., 2009; Saatcıoglu, 2009).

The study therefore attempts to establish the challenges that both managers and end users face in the implementation of ERP software solution in parastatals in Kenya.

1.3 Objectives of the Study

1.3.1 Broad objective

The overall objective of this study was to investigate the factors influencing successful implementation of ERP in corporations in Kenya.

1.3.2 Specific Objectives

The study was guided by the following objectives

1. To find out the effectiveness of full involvement and support of top management in the implementation of the ERP system
2. To determine the effects of proper planning and management in the successful implementation of ERP
3. To investigate the effect of the level of staff knowledge and expertise on the effective implementation of ERP
4. To establish the effects of proper training of staff (key-users and end-users) on the effective implementation of ERP

1.4 Research Questions

The study attempted to answer the following research questions:

1. How does the involvement of top management in the planning process affect the implementation of ERP?
2. How does proper planning and management affect the implementation of ERP?
3. How does the level of staff knowledge and expertise affect the implementation of ERP?
4. How does staff training affect the implementation of ERP?

1.5 Significance of the Study

This research would be useful because the categorization of CSFs of ERP implementation help researchers to understand and recognize which are the most significant CSF's for ERP implementation success. The identification of critical success factors for ERP implementation success would prove to be important and needs to be taken into consideration by business managers when planning and designing the implementation project.

Also, this study would seek to reveal whether there exists different perception of success by stakeholders of ERP system which is valuable for both researchers studying ERP implementation and practitioners involved in ERP project.

1.6 Scope of the Study

The study involved an investigation into the factors influencing successful implementation of the ERP systems in parastatals in Kenya. The study focused on the management and middle level staff, who are both direct (Key Users) and indirect (End Users) users of ERP systems. The selected organizations cut across the key sectors of the economy, for instance Transport, Manufacturing, Energy, Agriculture, Education, Health and ICT. The study recognizes that ERP implementation is very complex and involves all the company's activities at every management level to include all the business processes. Although several factors may influence ERP implementation, this paper will only focus on two main critical success factors that includes planning and management involvement and ERP Knowledge and Expertise, as these are viewed as successful implementing measures by the ERP users either directly or indirectly.

1.7 Limitations of the study

The researcher was faced with limitations of Time, Budget constraints and access to information. The information to be gathered, as it is deemed sensitive, may present a challenge of not getting

feed back in due time since a wide range of bureaucracy was followed in order for the information to be released. Cost of survey tools and material, like printing questionnaires, and transport to the offices to administer and collect the questionnaires may be a challenge. Also, it may be hard to have a sit-down with some managers as they may be busy and in meetings all day.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The following section consists of a review of literature, either directly or indirectly regarding ERP system implementation process and the perception of ERP success by various stakeholders such as users within the organization. A description of widely known "CSFs" is also provided in order to facilitate the understanding of factors involved in implementing ERP system.

2.2 Theoretical Review

The vision of an integrated information systems started in the 1960s, evolving from the inventory tracking systems to Materials Requirements Planning (MRP), and finally to Enterprise Resource Planning (ERP) (Brady J et al, 2001). Today, almost every organization integrates part or all of its business functions together to achieve higher efficiency and productivity. ERP is the process of integrating all the business functions and processes in an organization to achieve numerous benefits. First, a single point of data entry helps to reduce data redundancy while saving employee's time in entering data, thereby reducing labour and overhead costs (Whybark et al, 2000).

Second, the centralization of information, decision-making, and control leads to increases in efficiencies of operations and productivity, as well as coordination between departments, divisions, regions, and even countries. This is especially true for multinational corporations (MNC), in which global integration could result in better communications and coordination around the world. The global sourcing and distribution of parts and services could also provide appropriate benchmarks for operations around the world.

Third, the sharing of a centralized database provides business managers with accurate and up-to-date information to make well informed business decisions. Further, it reduces data redundancy while improving data integrity at the same time. Fourth, functional integration will consolidate all sorts of data, such as financial, manufacturing, and sales, to take advantage of bulk discounts.

ERP is especially important for companies who are "intimately connected" to their vendors and customers, and who use electronic data interchange (EDI) to process sales transactions electronically. Therefore, the implementation of ERP is exceptionally beneficial to businesses such as manufacturing plants that mass-produce products with little changes (Brady J et al, 2001). Nevertheless, the revolutionary and innovative ERP software system quickly expands into other business areas such as finance and retailing. ERP also provides companies with a competitive advantage over their competitors.

2.2.1 ERP Life Cycle

After developing a framework of different important CSFs for ERP implementation, it is significant to sort the identified CSFs into stages of ERP implementation life cycle (Nah et al., 2001). The ERP life cycle is a process-oriented approach to ERP research with the aim to give a dynamic view of the relationship between CSFs and the different stages of the implementation process. These stages categorize those CSFs where they come in to action, in the life cycle. ERP life cycle model, developed by Markus and Tanis (2000) cited in Nah et al., (2001) clearly illustrates that its phases are quite compatible with the stages of traditional systems development life cycle. ERP implementation life cycle model is based on four phases; chartering phase, project phase, shake down phase and onward & upward phase (Nah et al., 2001). Researchers such as Nah et al. (2001) and Parr & Shanks (2000) have synthesized the process model with CSFs in order to enhance the overall understanding of the ERP system project. This research,

will categorise the identified CSFs in their respective phase in the ERP life cycle model adapted by Nah et al. (2001).

Preparation;Analysis:Design ⟶ Implementation ⟶ Maintenance

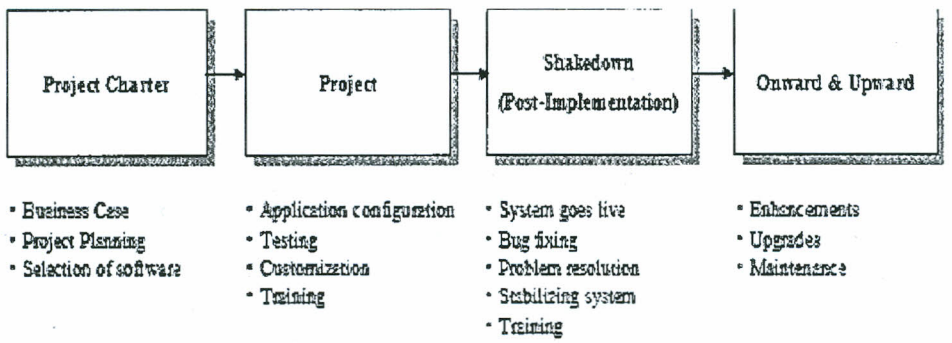

Figure 2. 1 ERP life cycle model, developed by

Source: Markus and Tanis (2000)

2.3 Empirical Review

ERP systems implementation process is a complex process with a lot of factors and conditions which can potentially influence the implementation (Soja, 2006). The presence of those conditions and factors can help to produce good results for ERP, whereas the absence can have opposite effect (Soja, 2006). Gyampah (2007) have emphasized upon the need of additional research and insights within the field of CSFs. Dezdar et al. (2009) have termed the studies of CSFs inconsistent and inconclusive. Those arguments have increased the importance of study about CSFs of ERP implementation. Dawson & Owens cited in Dezdar et al., (2009) claim that authors have defined many differences between CSFs. During their research they found that researchers often bring into play different terms for same kind of CSFs, or some time make sub units of one CSF (Dezdar & Sulaiman, 2009).

2.3.1 Factors influencing Successful ERP Implementation

Adequate Training

End-users are referred to as those employees within the organization, who interacts with ERP application indirectly (Somers, et al., 2003). Gyampah (2004) defines end-users as non-managerial level employees across the organization. The function of these end-users in the organization according to Gyampah (2004) consists of finance and accounting, operations, customer service representatives and other functional area personnel. End-users are involved in ERP implementation through their training and education sessions (Al-Mashari, et al., 2003). Selection and execution of a plan for end-users training and education is a particular challenge in ERP implementation project (Al-Mashari, et al., 2003; Finney & Corbett, 2007). Inappropriate or lack of training of end-users has been one of the main reasons behind many ERP systems failure (Gupta, 2000). Al-Mashari et al. (2003) has underlined that End-users training should cover all aspects of ERP systems. Françoise et al. (2009) stressed for more user involvement throughout the ERP implementation project, since end-users knowledge can be used in areas where the ERP team lacks the expertise. Involving end-users in the ERP acquisition motivates and provides end-users with more knowledge about the issues and technologies concerning ERP system (Verville, et al., 2006).

The findings of a research conducted by Verville et al. (2006) showed that end-users involvement in acquisition phase of ERP system results in end-users desire for technology purchase. The end-users desire for technology acquisition according to Verville et al. (2006) was a critical factor in the success of ERP implementation as they found strong evidence that end-users desire for acquisition of ERP system resulted in end-users open acceptance of the ERP application following the implementation. Furthermore, claiming that the end-users' involvement

must be maintained throughout ERP implementation process including the acquisition phase. A case study that was conducted by Woo (2007) in order to find out the flaws of ERP implementation projects that didn't succeed at the first attempt, highlighted end-user training that was not given importance by purchasing firm as a major flaw. Instead of providing training sessions for all users including end-users, these firms only focused on training of senior managers, departmental managers and key employees. The amount of training session was reduced to save costs and many employees were not allowed by their managers to participate in the training sessions. Woo (2007) claims that it is very common during ERP implementation process that organizations give very low priority to the training of end-users.

Proper Planning and Management

A survey conducted by information week, revealed that some of the significant reasons, for ERP project failures, considered by IT managers was lack of proper planning and management, change in Business goals during the project and the lack of Business management support. Langewalter cited in Umble et al., (2003) has claimed that, in between 40% to 60% of whole ERP implementation failed due to the above mentioned reasons. This highlights the importance of identifying the critical success factors to use to plan, carry out an evaluation of projects for successful implementation of ERP.

However, as mentioned earlier, there is much criticism regarding the CSFs for implementing ERP system. Researchers such as Yu (2005) has criticized CSFs by arguing that CSFs are factor-based ERP research, which fails to match with implementation process, as CSFs are static view while implementation process is dynamic. Therefore After developing a framework of different important CSFs for ERP implementation, it is significant to sort the identified CSFs into stages of ERP implementation life cycle (Nah et al., 2001).

Knowledge and Expertise

Key Users like IT professionals are regarded by researchers such as Ifinedo (2007), Willcocks and Sykes (2000) and Markus and Tanis (2003) as being a great asset for modern organizations who are using IT systems in their operations. Willcocks and Sykes (2000) claims that IT professionals' technical backgrounds are very important both during the selection and acquisition of complex IT system like ERP and for the implementation of ERP system into adopting organizations. This view is also shared by Lee and Lee (2004); suggesting that IT professional's quality such as knowledge of the technological change and updated skills are important factors that are needed for an ERP implementation success. However, Markus and Tanis (2003) suggest that IT professional´s skills are also important at the post-implementation of ERP system as they provide support for end-users and the organization and making sure that the system runs smoothly.

The study by Lee and Lee (2004) regarding change management after ERP implementation indicates that there is a correlation between ERP success and IT assets such as IT professionals' skills and IT department's values. Their study supports the suggestion by Willcocks and Sykes (2000), claiming that organizations that value their IT department highly are more likely to implement ERP system successfully. Furthermore, suggesting that the involvement of IT professionals in user training is crucial for the success of ERP implementation.

The Key findings by Ifinedo and Nahar (2009) also support this argument by concluding that IT assets are positively related to ERP systems success. This shows the importance of IT professionals in an ERP project from selection of the system through implementation process as well as post-implementation of ERP system. The role of IT manager as the head of IT

department is to develop "strategy, structures, processes and staffing to ensure the IT function delivers value for money" (Willcocks and Sykes, 2000, p 35). Willcocks and Sykes (2000) suggest that, in a successful ERP implementation, IT managers are required to possess the ability to build strong relationships with business executive peers and they should act as a strategic partner with the organization. Furthermore, claiming that IT managers should be involved in aligning IT investments such as ERP with strategic business priorities and visions. According to Woo (2007) many organizations have IT professionals in the project team responsible for the ERP implementation where in some organizations, IT manager is appointed to manage the project.

However, Woo (2007) is claiming that the reason for ERP implementation failure for some organizations is due to top management failure to incorporate other non-technical members into the project team. Woo (2007) Argues that IT professionals are mainly skilled in computer languages and technological aspect of ERP system rather than various aspects of the company's business operation. In contrast, Markus and Tanis (2003) claims that ERP project team mainly consists of non-technical members of different business units and functional area. However, IT professionals' involvement is seen as an important aspect of successful ERP implementation process by Markus and Tanis.

Top Management Support

Top management support and commitment is viewed by many researchers such as Al-Mashari et al. (2003), Finney and Corbett (2007) and Dezdar and Sulaiman (2009) as the most important critical success factor for ERP implementation. According to Al-Mashari et al. (2003) Top managements role in the implementation of ERP is highly important for the project as they "ensure an even change management and system rollout" (p 356). They are also responsible for setting the vision and business plan and to make sure to harness employees' creativity and

energy (Al-Mashari, et al., 2003). Furthermore, Al-Mashari et al. (2003) suggests that exploiting the ERP systems technological capabilities and making sure that the business performs in accordance to the plan is also key task of top management.

This view is supported by other researchers such as Nah et al. (2001) claiming that top managements are responsible for approving the ERP project and aligning it with the strategic goal of the business. Other top management responsibilities according to Nah et al. (2001) consists of allocating resources such as human, time and financial resources to the implementation effort. One of the telecom companies in Uganda has had challenges notifying their clientele in advance that they are due for disconnection due to defaulting on payment. Their clients are therefore disconnected without warning and the account relationship managers are not alerted either. Customer satisfaction and operational efficiency can be achieved by introducing ERP software.

For ERP implementation to be successful, strong commitment from upper management is essential since the introduction involves changing business practices and may require huge capital investments. Selecting the right employees to participate in the implementation process and motivate them to ensure its success.

Communicating the business vision and the role of ERP system is also seen by researchers such as Al-Mashari et al. (2003), Nah et al. (2001) and Wu and Wang (2006) to be a core responsibility of the top management in ERP implementation process. Furthermore, all mentioned researchers stress on the importance of top management support in overcoming resistance of ERP implementation within organization. Hence, top management are involved in

resolving conflict by mediating between groups and they are also involved in promoting project acceptance by building cooperation between various stakeholders and involving users in The ERP implementation process.

According to Al-Mashari et al. (2003), it is also top management's duty to decide on appropriate ERP system and select suitable vendors of ERP system. However, top management need assessment from end-users and IT professionals in the selection process of ERP (Willcocks and Sykes, 2000). Furthermore, Al-Mashari et al. (2003) argues that constantly monitoring the progress of ERP implementation and providing direction to the ERP project team is also major duties of top management which is critical for the success of ERP implementation. In general, although there are some variations in defining top managements duties in ERP implementation, the importance of their commitment and support is highlighted by all referred researchers.

2.4 Knowledge Gaps

By the implementation of the ERP solution in the organizations, it meant that top management and other key users were deeply involved in the process. This also meant that the ERP implementation eluded the fact that every staff in every management level were important to the process and therefore did not as much involve the End Users of the ERP solutions. This paper therefore will try to bridge the gap and look into the challenge of not including the end users in the ERP implementation process. The paper will be guided by the two objectives of the study.

2.5 Review of Previous Studies

There are a few studies on the factors influencing successful ERP implementation in Kenyan organizations; however a number of similar studies have been done in various developed countries.

ERP systems implementation process is a complex process with a lot of factors and conditions which can potentially influence the implementation (Soja, 2006). The presence of those conditions and factors can help to produce good results for ERP, whereas the absence can have opposite effect (Soja, 2006). Gyampah (2007) have emphasized upon the need of additional research and insights within the field of CSFs. Dezdar et al. (2009) have termed the studies of CSFs inconsistent and inconclusive. Those arguments have increased the importance of study about CSFs of ERP implementation. Dawson & Owens cited in Dezdar et al., (2009) claim that authors have defined many differences between CSFs. During their research they found that researchers often bring into play different terms for same kind of CSFs, or some time make sub units of one CSF (Dezdar & Sulaiman, 2009).

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2.6 Conceptual Framework

From the literature in this chapter, we have come to notice that for a factor to be considered as critical it has to greatly impact on the user satisfaction positively and this is the basis of forming our conceptual framework as derived from ERP life cycle. Although there are many CSFs, the study generally looks at four main critical success factors namely; End User Training, Top Management Support, Expertise & Knowledge and Planning & Management.

Unlike most researches which go further to look at these CSF's at specific stages, this study will focus mainly on the challenges of ERP implementation with regards to these specific CSF disregarding the stages mainly because project implementation is a dynamic process and every factor plays a critical role in IS/ ERP implementation at any one stage. The study also recognizes that successful ERP implementation/ perceived usefulness is the one time dependent variable and the independent variables (various CSFs) will be measured against this factor to get the outcome of IS success.

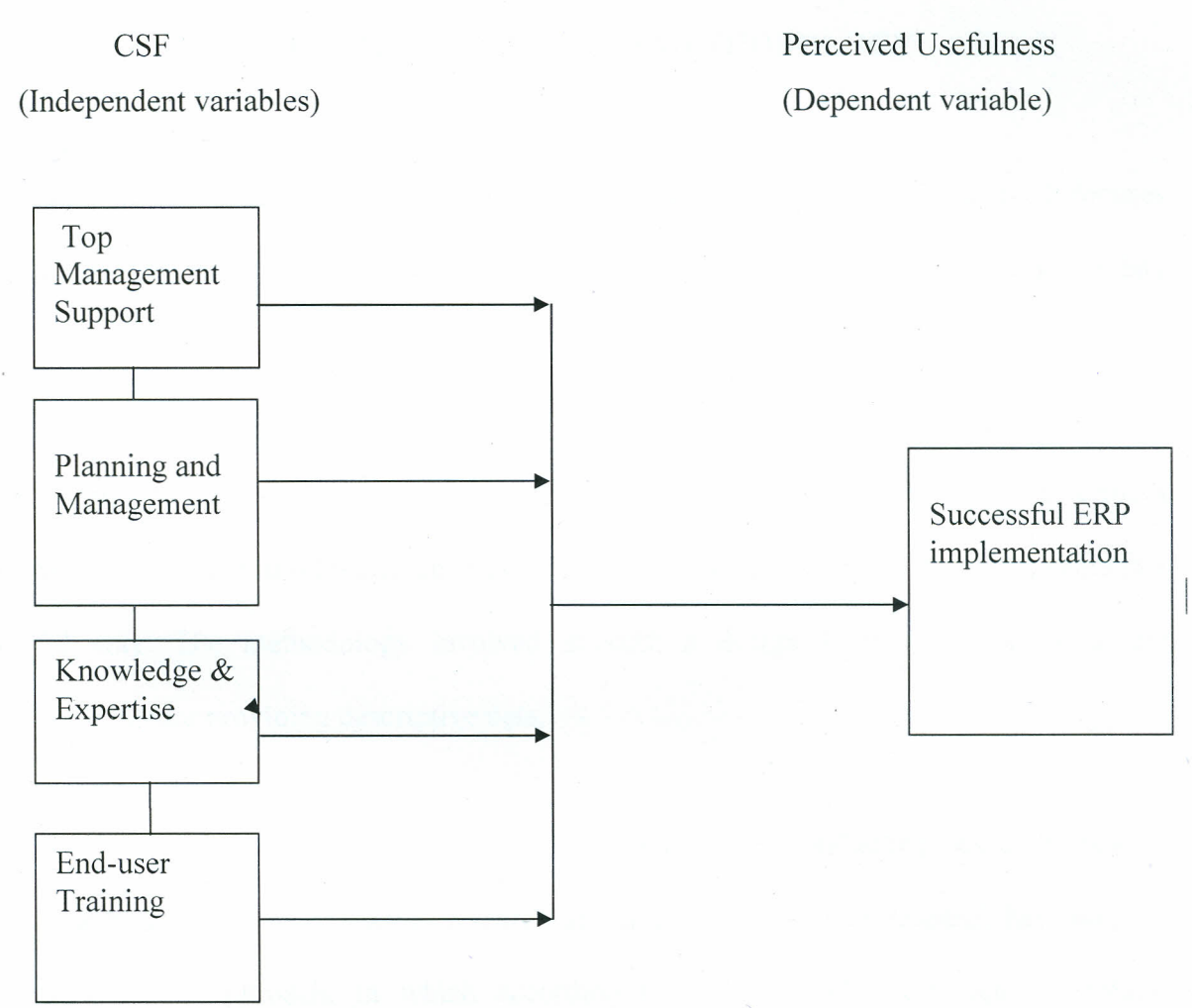


Figure 2.2 Conceptual Framework

Source: Adapted from Markus and Tanis, 2000

The conceptual frame work above can simply be conceptualized as follows; that the critical success factors of either end user training, Top management support, key users expertise or knowledge and or planning and management, may come into play at any one given stage of the project life cycle and will impact on the implementation of the ERP in certain ways either positively/ negatively and when it impacts positively is when we can say that there is successful implementation of ERP system.

The project's successful implementation depends on the Critical Success Factors.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with various procedures and strategies that was useful in the study. It focuses on research design, target population, sampling design, and data collection techniques and data analysis that were used to investigate the study.

3.2 Research Design

The study employed a descriptive research design. Mugenda and Mugenda (1999) describe a descriptive survey as a method which enables the researcher to summarize and organize data in a meaningful way. The methodology involved in such a design is mostly qualitative and quantitative in nature providing descriptive data.

Fisher (2007) suggests various methodological approaches for conducting research such as realist research, critical realism, action research and interpretivism. This research has taken on the realist research approach, in which according to Fisher (2007), although it contains "positivism ambitions", it differs from positivism by recognizing subjectivity as part of research. Realist researcher believes that "the knowledge we acquire can give good indications of what should be done" due to the nature of research that looks for relations between "variable" and trying to figuring out the "chains of cause and effect" (Fisher, 2007, p 42). In the realist research, both quantitative and qualitative method can be used for collecting and analyzing data.

3.3 Target Population

Ngechu (2005) defines population as the total collection of elements about which we wish to make some references. The target population for this study comprised of six parastatal organizations in Kenya which includes KIE (Kenya industrial estate), KIE (Kenya Institute of Education), KIRDI, KEMRI, KenGen and NEEMA The study specifically targeted staff in

departments that regularly use the ERP systems that have been customised by the service provider for the different operations of the organizations. The respondents from each organization will comprise of Business Managers, IT professionals, Project team members and End users.

3.4 Sampling Design

The sampling design describes the sampling unit, sampling frame, sampling procedures and the sample size for the study. The sampling frame describes the list of all population units from which the sample will be selected (Cooper and Schindker, 2003). The study employed Stratified random sampling technique in coming up with a sample size of 245 respondents from a total of 817 from the entire department under investigation from the selected parastatals in Kenya. The study employed 30% in sampling as supported by the Krenje and Morgan theory of sampling which states that a sample size should range between 10% to 40% of the total population under study. (Krenje& Morgan, 1970)

Stratified random sampling is unbiased sampling method of grouping heterogeneous population into homogenous subsets then making a selection within the individual subset to ensure representativeness. The goal of stratified random sampling is to achieve the desired representation from various sub-groups in the population. In stratified random sampling subjects are selected in such a way that the existing sub-groups in the population are more or less represented in the sample.

Table 3. 1 Target population and sample size
Krenje & Morgan Theory of Sampling Technique (Population)

Parastatal	Business Manager	IT	Project Team Manager	End users	TOTAL
KIE	27	33	33	40	133
KIRDI	30	40	27	37	133
KEMRI	30	37	30	50	147
KENGEN	30	30	33	40	133
KIE	27	30	37	47	140
NEEMA	30	27	33	40	130
TOTAL	**173**	**197**	**193**	**253**	**817**

Source: researcher (2013)

Sample size

Parastatals	Business Manager	IT	Project Team Manager	End users	total
KIE	8	10	10	12	40
KIRDI	9	12	8	11	40
KEMRI	9	11	9	15	44
KENGEN	9	9	10	12	40
KIE	8	9	11	14	42
NEEMA	9	8	10	12	39
TOTAL	**52**	**59**	**58**	**76**	**245**

3.5 Data collection

The data for this study was collected mainly through the use of questionnaires which included both structured and unstructured questions. This is because questionnaires are easier to administer, easier to analyze, and are economical to use in terms of time and money. The questionnaires were self administered to the selected sample size of managers and end users of the ERP software within the companies through hand delivery, and they completed them on their own. Secondary data was collected from records within the companies and their websites.

3.6 Validity and Reliability

Validity refers to the degree to which results obtained from the analysis of data actually represent the phenomenon under study, while Reliability refers to the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials. Mugenda(1999).

Content validity is a non-statistical method used to validate the content employment. The researcher helped to determine content validity by defining precise terms, and the question items sampled domain of the specific content that the questions assume to represent, and then determine how well the content is. The researcher carried out a pilot study to establish the content validity. The consistent supervisors' assistance helped in content validity of the research instrument.

The reliability of the study was able to address the similarity of the results through repeated trials. The pre-test was done to assess the clarity and effectiveness of the research instrument. The researcher was able to critically analyze the responses from the questionnaire in terms of their consistency, making judgment on their degree of reliability, after which the researcher made the necessary changes to improve on the quality of the questionnaire and increase its reliability.

3.7 Data Analysis Approach

The study used both qualitative and quantitative data analysis method. Responses to the open ended items in the questionnaire were analyzed quantitatively, while the close-ended items in the questionnaire were analysed and reported using descriptive statistics such as frequencies and percentages. Qualitative methods are aimed at describing, interpreting, and explaining the human experience through inductive reasoning (Patton, 2002). Qualitative research is designed to allow the researcher to explore in depth the experience of the participants through various means such

as interviews and observation. Patton (2002), contends that qualitative methods facilitate the study of issues in depth and details. It is conducted without being constrained by previously determined categories of analysis; the researcher has the latitude to probe for depth and detail and to allow openness in participants' responses to prevail. Qualitative research allows the researcher to explore concepts whose essence is lost in other research approaches (Bogdan & Taylor, 1975).

Structured questionnaires and secondary data were coded to facilitate statistical analysis. The SPSS (Statistical Package for Social Science) was used to aid in data analysis. Descriptive statistics such as mean, percentages, and also pie charts and tables was used to enable the researcher to meaningfully describe the distribution of measurements.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents research findings and discussions, starting with the response rate, through the raphic information of the respondents, and then gives in details the findings and discussions based on the specific objectives of the study

4.1.1 Response Rate

The study targeted 245 respondents in collecting data with regard to factors influencing successful implementation of ERP in parastatals in Kenya. From the study, 170 respondents out of the 245 sample respondents filled-in and returned the questionnaires making a response rate of 69.39%. According to Mugenda, Mugenda (2003) a response rate of above 60% is considered appropriate for credible results. This reasonable response rate was achieved after the researcher made personal calls and physical visits to remind the respondent to fill-in and return the questionnaires.

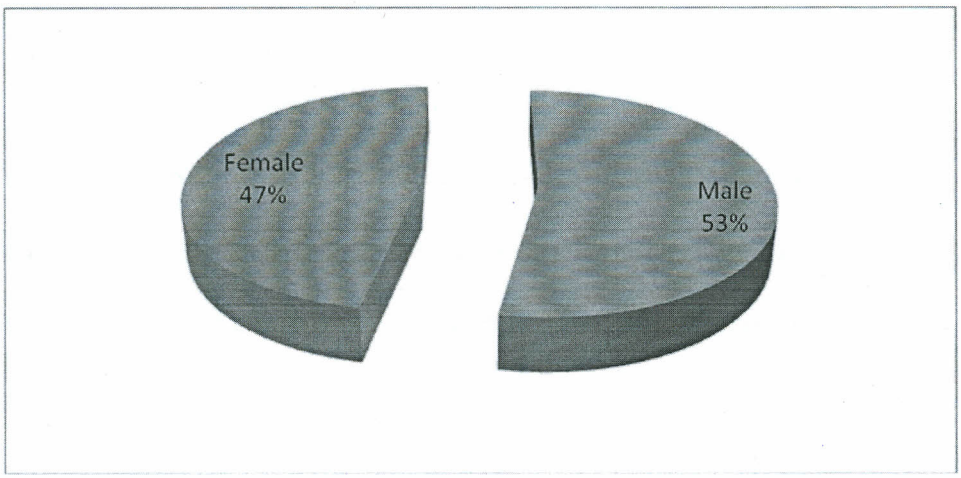
4.2 Demographic information

These are the information on characteristic of the respondents. They included marital status, gender, age, level of education, other occupation and average income.

4.2.1 Gender of the respondents

The study sought to find out the gender of the respondents. According to the findings, 53% of the respondents were male while 47% were female. This implies that majority of the employees in the parastatal organizations that were under investigation were majorly male as depicted by the findings.(refer to figure 4.1 gender of the respondents below)

Figure 4. 3: Gender of the respondents



4.2.2 Age of the respondents

The study sought to find out the age of the respondents. From the findings, 45.88% of the respondents were aged 35-45yrs, 27.06% of the respondents were aged 26-34yrs , 24.71% of the respondents were aged 45 and above and 2.35% of the respondents were aged 18-25yrs. From the findings it can be depicted that majority of the staff in these parastatals were made up of old employees of age between 35-45 years of age it can be drawn that most of these parastatals are not flexible enough to contain the majority who are the youth of age between 26-34 years of age. (Refer to table 4.1 Age of the respondents below)

Table 4. 2: Age of the respondents

	Frequency	Percentage
18-25yrs	4	2.35
26-34yrs	46	27.06
35-45yrs	78	45.88
45 and above	42	24.71
Total	**170**	**100.00**

4.2.3 Marital status of the respondents

The study sought to find out the marital status of the respondents. According to the findings, 47.06% of the respondents were married, 39.41% of the respondents were single, 10.59% of the respondents were separated and 2.94% of the respondents were divorced. From the findings it can be drawn that most of the respondents were composed of married couples this can be attributed to the fact that most of the respondents were adults. (Refer to table 4.2 marital status of the respondents)

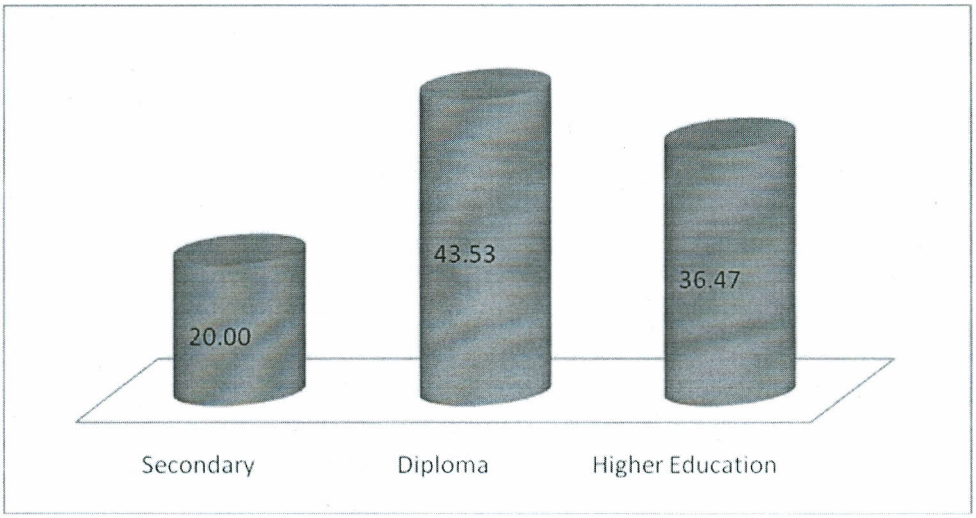
Table 4. 3: Marital Status of the respondents

	Frequency	Percentage
Single	67	39.41
Married	80	47.06
Divorced	5	2.94
Separated	18	10.59
Total	**170**	**100.00**

4.2.4 Level of Education of the respondents

The study sought to find out the level of education of the respondents. From the findings, 43.53% of the respondents had a Diploma, 36.47% of the respondents had higher education and 20% of the respondents had secondary education. From the finding this implies that majority of the respondents were Diploma holders followed by those with higher education qualifications it can thus be depicted that majority of the employees in the parastatals had not attained higher education qualifications. (Refer to figure 4.2 Level of education of the respondents)

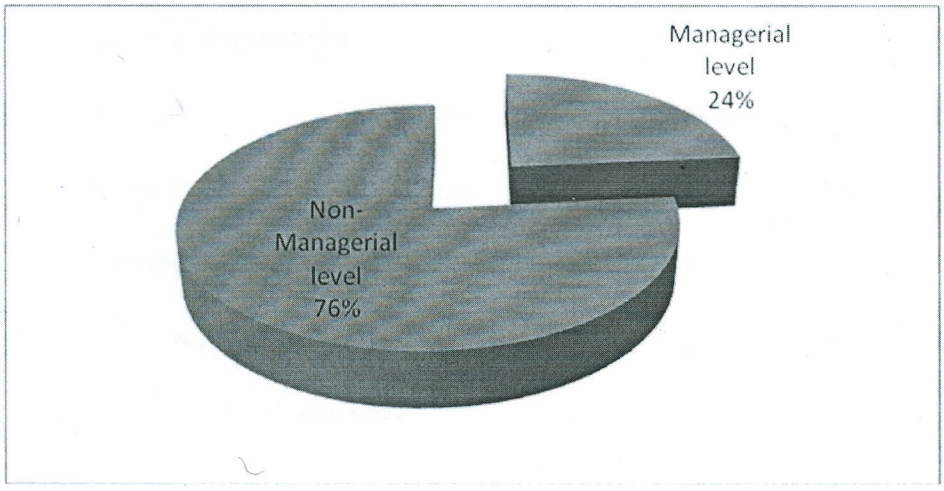
Figure 4.4: Level of Education of the respondents



4.2.5 Employment level of the respondents

The study sought to find out the employment level of the respondents. According to the findings, 76% of the respondents were in non managerial level of employment while 24% of the respondents were in managerial level of employment. This implies that majority of the respondents from these parastatals were from the non managerial level of employment as depicted by the findings (refer to figure 4.3 employment level of the respondents below)

Figure 4. 5: Employment level of the respondents



4.2.6 Number of years the respondents had been in the position

The study sought to find out the number of years the respondents had been at the position. From the findings, 41.18% of the respondents had been at their current position for 5-10 years, 33.53% of the respondents had been at their current position for 0-5 years and 25.29% of the respondents had been at their current position for 10 and above. This implies that majority of the respondents have been at their current level of employment for a period of between 5-10 years this shows that staff retention of the organization on the employees was high.(refer to the table 4.3 Number of years the respondents had been at the position Below)

Table 4.1: Number of years the respondents had been at the position

	Frequency	Percentage
0-5	57	33.53
5-10	70	41.18
10 and above	43	25.29
Total	**170**	**100.00**

4.2.7 Department of work

The study sought to find out the department the respondents work in. According to the findings, 24.71% of the respondents worked in finance department, 15.29% of the respondents worked in technical department, 14.71% of the respondents worked in procurement department, 14.71% of the respondents worked in corporate quality department, 12.94% of the respondents worked in HR department, 10.00% of the respondents worked in IS department and 7.65% of the respondents worked in safety and environment department. From the findings its evident that majority of the employees were from the finance department this can be attributed to the fact that

the implementation of enterprise resource planning systems affected mostly the finance department. (Refer to Table 4.4 Department the respondents work in below)

Table 4.4: Department the respondents work in

	Frequency	Percentage
HR	22	12.94
Finance	42	24.71
Procurement	25	14.71
Technical	26	15.29
IS	17	10.00
Corporate quality	25	14.71
safety and environment	13	7.65
Total	**170**	**100.00**

4.3 Level of Staff Knowledge and Expertise

4.3.1 Computer literacy of the Managers

The study sought to find out whether the managers were computer literate. From the findings, all the managers were computer literate. Woo (2007) Argues that IT professionals are mainly skilled in computer languages and technological aspect of ERP system rather than various aspects of the company's business operation. According to the findings, 80.00% of the respondents had attained computer packages plus professional packages and 20.00% had only attained computer packages. Woo (2007) many organizations have IT professionals in the project team responsible for the ERP implementation where in some organizations, IT manager is appointed to manage the project.

Table 4. 5: Level of computer literacy

	Frequency	Percentage
Only computer packages	8	20.00
Computer packages plus professional packages	32	80.00
Total	**40**	**100.00**

4.3.2 Staff role in the ERP implementation

The study sought to find out the staffs' role in the ERP implementation. According to the findings, 66.92% of the staffs indicated that their role in the ERP implementation was monitoring process and 33.08% of the staffs indicated that their role in the ERP implementation was providing direction. Markus and Tanis (2003) claims that ERP project team mainly consists of non-technical members of different business units and functional area. However, IT professionals' involvement is seen as an important aspect of successful ERP implementation process by Markus and Tanis.

According to Ifinedo and Nahar (2009) IT assets are positively related to ERP systems success. This shows the importance of IT professionals in an ERP project from selection of the system through implementation process as well as post-implementation of ERP system. (refer to the table 4.7 Staffs' role in the ERP implementation Below)

Table 4.6: Staffs' role in the ERP implementation

	Frequency	Percentage
Providing direction	43	33.08
Monitoring process	87	66.92
Total	130	100.0

4.3.3 Need for training in ERP for the Non Managerial staff

The study sought to find out whether non-managerial staff needed training in ERP for its successful implementation. From the findings, all the staffs indicated that non-managerial staff needed training in ERP for its successful implementation. Al-Mashari (2003) has underlined that End-users training should cover all aspects of ERP systems. Françoise (2009) stressed for more user involvement throughout the ERP implementation project, since end-users knowledge can be used in areas where the ERP team lacks the expertise (refer to the table below 4.8)

Table 4. 7: Whether non-managerial staff needed training in ERP for its successful implementation

	Frequency	Percentage
Yes	130	100.00
Total	130	100.00

4.4 Involvement and support of top management

The study sought to find out whether the managers were directly involved in using ERP system. From the findings, 87.50% of the managers were directly involved in using ERP system while 12.50% were not directly involved in using ERP system. According to Al-Mashari et al. (2003) Top managements role in the implementation of ERP is highly important for the project as they "ensure an even change management and system rollout" (p 356). They are also responsible for setting the vision and business plan and to make sure to harness employees' creativity and energy (Al-Mashari, et al., 2003).

Table 4. 8: Whether the managers were directly involved in using ERP system

	Frequency	Percentage
Yes	35	87.50
No	5	12.50
Total	**40**	**100.00**

4.4.1 Departments involved in the implementation process

The study sought to find out the departments involved in the implementation process. According to the findings, 55.38% of the staffs indicated that all departments were involved in the implementation process, 30.77% of the staffs indicated that IT department were involved in the implementation process, 10.77% of the staffs indicated that operations department were involved in the implementation process and 3.08% of the staffs indicated that HR department were

involved in the implementation process. IT managers should be involved in aligning IT investments such as ERP with strategic business priorities and visions. According to Woo (2007) many organizations have IT professionals in the project team responsible for the ERP implementation where in some organizations, IT manager is appointed to manage the project.

Figure 4. 6: Departments involved in the implementation process

	Frequency	Percentage
IT department	40	30.77
HR department	4	3.08
Operations department	14	10.77
All departments	72	55.38
Total	**130**	**100.00**

4.4.2 Leading role in the implementation process

The study sought to find out the department with leading role in the implementation process. From the findings, 66.15% of the staffs indicated that IT department had the leading role in the implementation process, 22.31% of the staffs indicated that operations department had the leading role in the implementation process, 7.69% of the staffs indicated that all departments had the leading role in the implementation process, 2.31% of the staffs indicated that HR department had the leading role in the implementation process and 1.54% of the staffs indicated that customer Service had the leading role in the implementation process.

Figure 4. 7: Leading role in the implementation process

	Frequency	Percentage
IT department	86	66.15
HR department	3	2.31
Operations department	29	22.31
Customer Service	2	1.54
All departments	10	7.69
Total	**130**	**100.00**

4.5 Effects of proper training of staff (Key-users and end-users)

The study sought to find out whether the managers received training on the use of ERP before it was implemented in the organization. According to the findings, all the managers received training on the use of ERP before it was implemented in the organization. Verville et al. (2006) showed that end-users involvement in acquisition phase of ERP system results in end-users desire for technology purchase. The end-users desire for technology acquisition according to Verville et al. (2006) was a critical factor in the success of ERP implementation as they found strong evidence that end-users desire for acquisition of ERP system resulted in end-users open acceptance of the ERP application following the implementation.

Table 4. 9: Whether the managers received training on the use of ERP before it was implemented in the organization

	Frequency	Percentage
Yes	40	100.00
Total	**40**	**100.00**

4.5.1 Impact of training on Managers and end users

The study sought to find out the impact of training on managers and end users. From the findings, the managers agreed that all staff should be trained and training of trainers is the best approach as shown by the majority of the respondents.120 (70.59%) In addition, managers were neutral that training should not focus on how to use the system also on new business processes as shown by 100 (58.8%) of the respondents. Involving end-users in the ERP acquisition motivates and provides end-users with more knowledge about the issues and technologies concerning ERP system (Verville, 2006)

Table 4.10: Impact of training on managers and end users

	Yes		No	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Training factors	60	35.29	110	64.71
Training of trainers is the best approach	100	58.82	70	41.18
All staff should be trained	120	70.59	50	29.41
Training should not focus on how to use the system also on new business processes	84	49.41	86	50.59

4.5.2 Key areas of Managers training

The study sought to find out the area managers were trained in. According to the findings, 92.50% of the managers were trained in all aspects of ERP while 7.50% of the managers were trained in only their area. Al-Mashari (2003) has underlined that End-users training should cover all aspects of ERP systems

Table 4.11: The area that managers were trained in

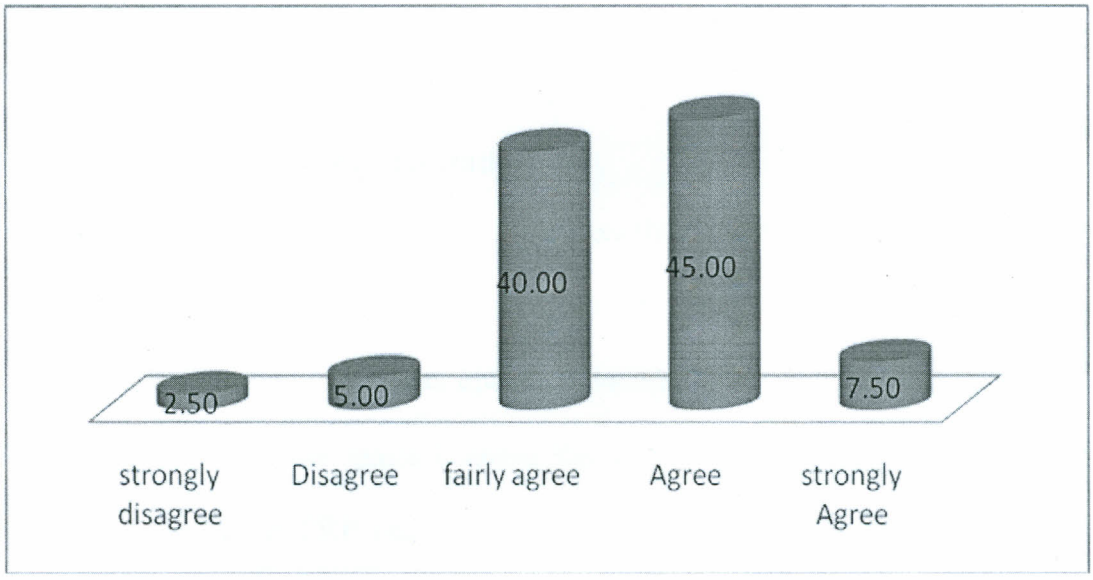
	Frequency	**Percentage**
All aspects of ERP	37	92.50
Only my area	3	7.50
Total	**40**	**100.00**

4.5.3 Appropriateness of the training given

The study sought to find out whether the training given was appropriate. According to the findings, 45% of the managers agreed that the training given was appropriate, 40% of the managers fairly agreed that the training given was appropriate, 7.5% of the managers strongly agreed that the training given was appropriate, 5% of the managers disagreed that the training given was appropriate, 2.5% of the managers strongly disagreed that the training given was appropriate. A case study that was conducted by Woo (2007) in order to find out the flaws of

implementation of ERP projects that didn't succeed at the first attempt, highlighted end-user training that was not given importance by purchasing firm as a major flaw. Instead of providing training sessions for all users including end-users, these firms only focused on training of senior managers, departmental managers and key employees. The amount of training session was reduced to save costs and many employees were not allowed by their managers to participate in the training sessions

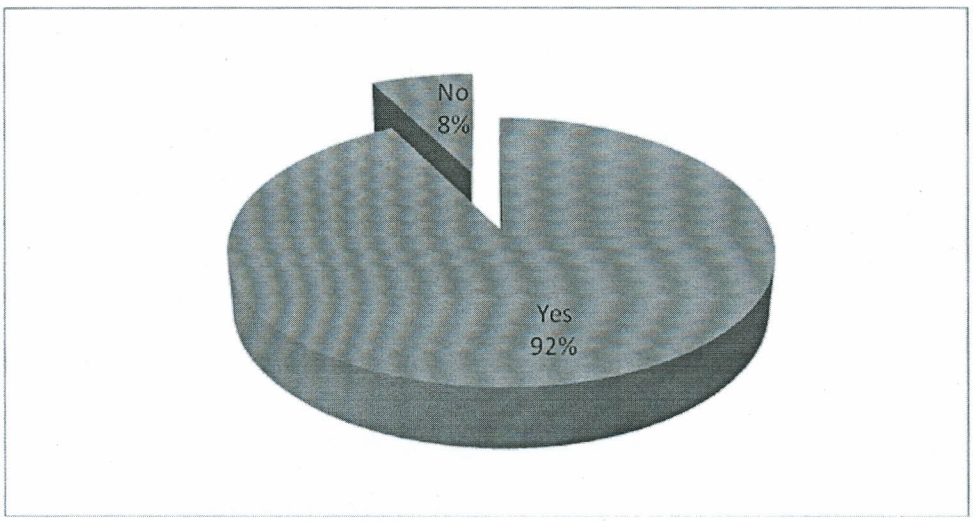
Figure 4. 8: Whether the training given was appropriate



4.5.4 Proper planning and management

The study sought to find out if more technology is needed for the implementation of ERP in the organization. From the findings, 92% of the managers indicated that technology is needed for the implementation of ERP in the organization while 8% of the managers indicated that technology is not needed for the implementation of ERP in the organization. From the findings it can be depicted that technology is needed for the implementation of the ERP as reported by majority of the respondents.

Figure 4. 9: If more technology is needed for the implementation of ERP in the organization



4.5.5 Changes in ERP implementation

The study sought to find out the major changes the company faced during ERP implementation. From the findings, 48.46% of the staffs indicated that the major changes the company faced during ERP implementation was updating/ increasing IT and other equipment, 31.54% of the staffs indicated that the major changes the company faced during ERP implementation was resolving conflict in ERP implementation and 20.00% of the staffs indicated that the major changes the company faced during ERP implementation was realigning of strategic goals. Some of the significant reasons, for ERP project failures, considered by IT managers was lack of proper planning and management, change in Business goals during the project and the lack of Business management support (Umble, 2003).

Table 4. 12: Major changes the company faced during ERP implementation

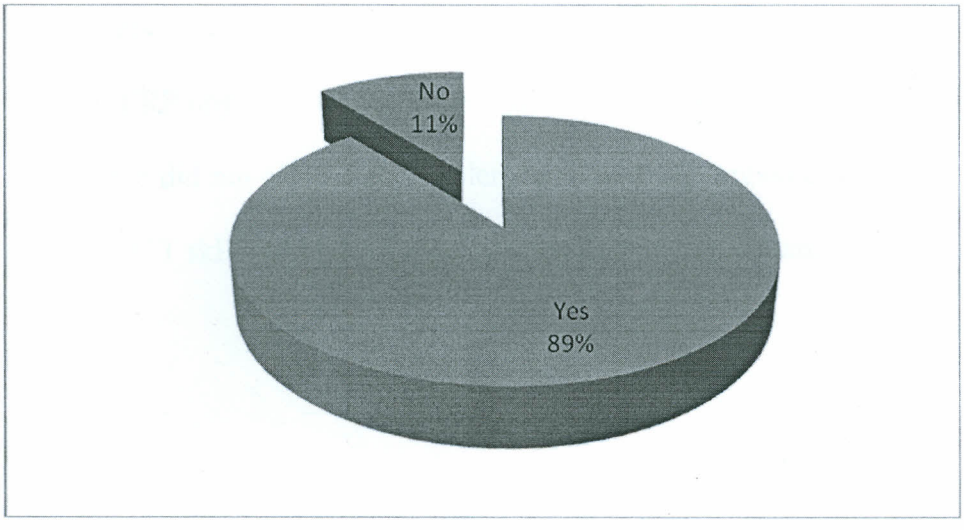
	Frequency	Percentage
Realigning of strategic goals	26	20.00
Resolving conflict in ERP implementation	41	31.54

Updating/ increasing IT and other equipment	63	48.46
Total	**130**	**100.00**

4.5.6 Appropriateness of the ERP system

The study sought to find out whether the ERP system picked for the organisation was appropriate. According to the findings, 89% of the staffs indicated that ERP system picked for the organisation was appropriate while 11% of the staffs indicated that ERP system picked for the organisation was not appropriate. After developing a framework of different important CSFs for ERP implementation, it is significant to sort the identified CSFs into stages of ERP implementation life cycle (Nah., 2001)

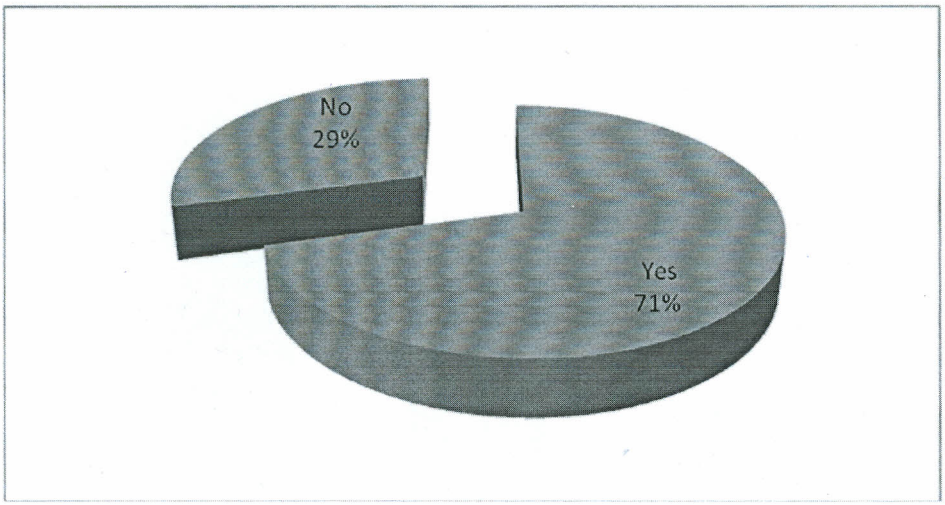
Figure 4.10: Whether the ERP system picked for the organisation was appropriate



4.5.7 Assessment on the ERP implementation

The study sought to find out if assessment was done before ERP implementation. From the findings, 71% of the staffs indicated that assessment was done before ERP implementation while 29% of the staffs indicated that assessment was not done before ERP implementation.

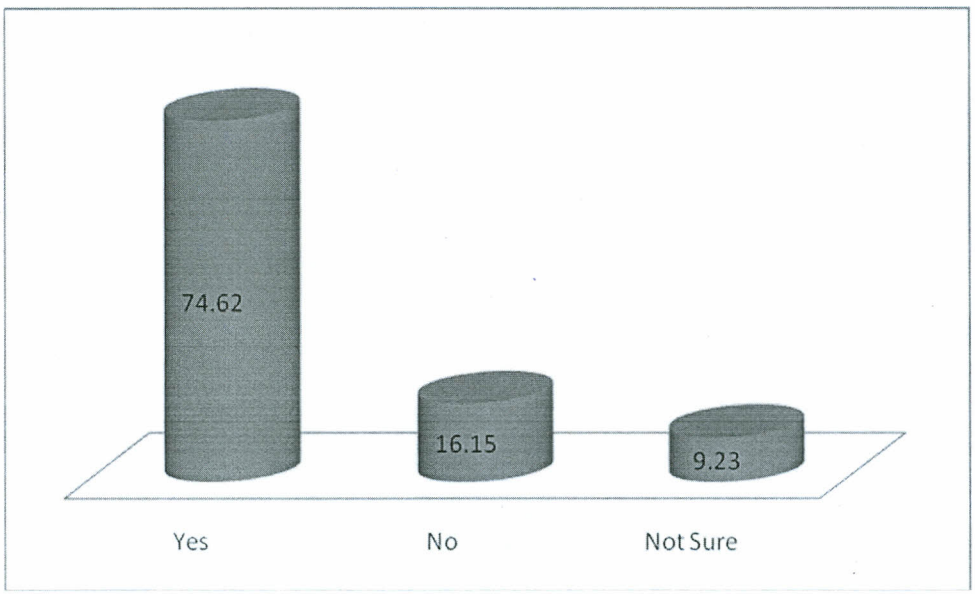
Figure 4. 11: If assessment was done before ERP implementation



4.5.8 Effect of IT skills and Knowledge on ERP implementation

The study sought to find out whether IT skills and knowledge affected ERP implementation in the organisation. From the findings, 74.62% of the staffs indicated that IT skills and knowledge affected ERP implementation in the organisation, 16.15% of the staffs indicated that IT skills and knowledge did not affect ERP implementation in the organisation and 9.23% of the staffs were not sure if IT skills and knowledge affected ERP implementation in the organisation.

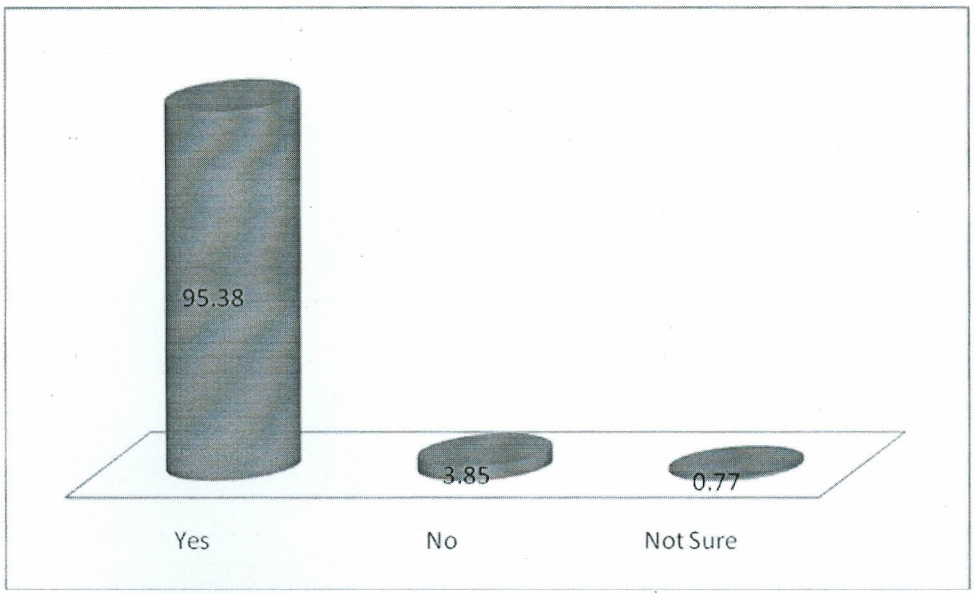
Figure 4. 12: Whether IT skills and knowledge affected ERP implementation in the organisation



4.5.9 Effect of top Management involvement in ERP implementation

The study sought to find out whether top management involvement affected ERP implementation. According to the findings, 95.38% of the staffs indicated that top management involvement affected ERP implementation, 3.85% of the staffs indicated that top management involvement did not affect ERP implementation and 0.77% of the staffs were not sure if top management involvement affected ERP implementation. Yu (2005) has criticized CSFs by arguing that CSFs are factor-based ERP research, which fails to match with implementation process, as CSFs are static view while implementation process is dynamic.

Figure 4. 13: Whether top management involvement affected ERP implementation



4.5.10 Organizations' success on ERP implementation

The study sought to find out the success of the organization's ERP implementation. According to the findings, 60.00% of the managers rated success of the organization's ERP implementation as 26%-50% success rate, 17.50% of the managers rated success of the organization's ERP implementation as 51%-75% success rate, 15.00% of the managers rated success of the organization's ERP implementation as 0%-25% success rate and 7.50% of the managers rated success of the organization's ERP implementation as 76%-100% success rate.

Figure 4. 14: Success of the organization's ERP implementation

	Frequency	Percentage
0%-25% success rate	6	15.00
26%-50% success rate	24	60.00
51%-75% success rate	7	17.50
76%-100% success rate	3	7.50
Total	**40**	**100.00**

From the findings it's depicted that most the managers rated success of the organization's ERP implementation as appropriate, equally implementation of ERP has been considered to be successful.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter provides the summary of the findings from chapter four, and it also gives the conclusions and recommendations of the study based on the objectives of the study. The objectives of this study were to investigate the factors influencing successful implementation of ERP in corporations in Kenya.

5.2 Summary

The study aimed at determining the effectiveness of full involvement and support of top management in the implementation of the ERP system. It also aimed at determining the effects of proper planning and management, level of staff knowledge and expertise and proper training of staff (key-users and end-users) on the effective implementation of ERP.

On the effectiveness of full involvement and support of top management in the implementation of the ERP system, the study found that all the managers were computer literate. In addition, most of the respondents had attained computer packages plus professional packages. All the managers were aware of the existence of the Enterprise Resource Planning (ERP) Software in the organization. Moreover, a number of the managers were aware of ERP implementation in the organisation. To add to that, some of the staffs indicated that their role in the ERP implementation was monitoring process. All the staffs indicated that non-managerial staff needed training in ERP for its successful implementation.

Similarly the study established that many of the managers were directly involved in using ERP system. In addition, some of the staffs indicated that all departments were involved in the

implementation process. Moreover, a good number of the staffs indicated that IT department had the leading role in the implementation process.

On determining the effects of proper planning and management in the successful implementation of ERP, The study revealed that all the managers received training on the use of ERP before it was implemented in the organization. The managers agreed that all staff should be trained and training of trainers is the best approach. In addition, managers were neutral that training should not focus on how to use the system also on new business processes. Moreover, most of the managers were trained in all aspects of ERP. The managers agreed that the training given was appropriate.

On the level of staff knowledge and expertise on the effective implementation of ERP, The study established that most of the managers indicated that technology is needed for the implementation of ERP in the organization. In addition, some of the staffs indicated that the major changes the company faced during ERP implementation was updating/ increasing IT and other equipment. Moreover, many of the staffs indicated that ERP system picked for the organisation was appropriate. To add to that, some of the staffs indicated that assessment was done before ERP implementation.

5.3 Conclusions

From the research findings the following conclusions can be drawn based on the study objectives;

On effectiveness of full involvement and support of top management in the implementation of the ERP system, the study concludes that most of the managers were computer literate. IT professionals' technical backgrounds were very important both during the selection and acquisition of complex IT system like ERP and for the implementation of ERP system into adopting organizations. All the managers were aware of the existence of the Enterprise Resource Planning (ERP) Software in the organization. IT professional's quality such as knowledge of the technological change and updated skills are important factors that are needed for an ERP implementation success (Lee and Lee, 2004). Woo (2007) Argues that IT professionals are mainly skilled in computer languages and technological aspect of ERP system rather than various aspects of the company's business operation.

On the effects of proper planning and management in the successful implementation of ERP, the study concludes that top managements role in the implementation of ERP is highly important for the project as they ensure an even change management and system rollout. They are also responsible for setting the vision and business plan and to make sure to harness employees' creativity and energy. For ERP implementation to be successful, strong commitment from upper management is essential since the introduction involves changing business practices and may require huge capital investments. Communicating the business vision and the role of ERP system is also seen by Al-Mashari et al. (2003) to be a core responsibility of the top management in ERP implementation process.

On the the effect of the level of staff knowledge and expertise on the effective implementation of ERP, the study concludes that managers should received training on the use of ERP before it was

implemented in the organization. End-users are involved in ERP implementation through their training and education sessions (Al-Mashari, et al., 2003). Inappropriate or lack of training of end-users has been one of the main reasons behind many ERP systems failure (Gupta, 2000). Moreover, managers were trained in all aspects of ERP. The managers agreed that the training given was appropriate. A case study that was conducted by Woo (2007) in order to find out the flaws of ERP implementation projects that didn't succeed at the first attempt, highlighted end-user training that was not given importance by purchasing firm as a major flaw.

On the implementation of ERP in the organization the study concluded that technology is needed. Managers were generally computer literate and had attained computer packages plus professional packages. The managers were aware of the existence of the Enterprise Resource Planning (ERP) Software in the organization. The role of staffs in the ERP implementation was monitoring process. Staff needed training in ERP for its successful implementation.

Furthermore the study concludes that managers were directly involved in using ERP system. All departments were involved in the implementation process. IT department had the leading role in the implementation process. Managers received training on the use of ERP before it was implemented in the organization. Further the study concludes that staff should be trained and training of trainers is the best approach. Managers were trained in all aspects of ERP. The study equally concludes that technology is needed for the implementation of ERP in the organization. Major changes the company faced during ERP implementation was updating/ increasing IT and other equipment. Assessment was done before ERP implementation.

5.5 Policy Recommendations

Based on the summary of the findings and the research objectives the study makes the following recommendations;

On the effectiveness of full involvement and support of top management in the implementation of the ERP system, the study recommends that the organization should ensure that all the managers are computer literate and have attained computer packages plus professional packages. Managers also need to be made aware of the existence of the Enterprise Resource Planning (ERP) Software in the organization.

Further the study recommends that managers need to know how to implement ERP in the organization for the purpose of successful operation of the parastals in addition all managers and departments need to be directly involved in the use of ERP systems in an organization.

On proper planning and management in the successful implementation of ERP, All managers and staffs should be trained on the use of ERP before it is implemented in the organization in conjunction to this all managers of these parastatals need to trained in aspects of the enterprise resource planning, the training should be appropriate, the organization should invest in technology for the successful implementation of the ERP.

On the effects of proper training of staff (key-users and end-users) on the effective implementation of ERP, the study recommends that, further the study recommends that staff should be trained and training of trainers is the best approach. Managers were trained in all aspects of ERP. The study equally concludes that technology is needed for the implementation of

ERP in the organization. Major changes the company faced during ERP implementation was updating/ increasing IT and other equipment. Assessment was done before ERP implementation.

5.6 Recommendations for further research

From the findings the study recommends the following further researcher;

The study recommends that a similar study be carried out in other organizations to find out whether the same results will be obtained. Further research should be carried on the effect of technology on ERP implementation in banking industry and challenges facing ERP implementation in Kenya

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APPENDICES

APPENDIX 1: QUESTIONNAIRE FOR END USERS

Introduction

Dear Respondent,

I am **Anita Ogada**, an MBA student at Kenyatta University. As part of the requirement for the degree, I am undertaking a study on "***Factors influencing successful implementation of ERP in parastatals in Kenya***"

Organisations all over the world have resorted to procuring different commercial software packages, such as the ERP systems to automate their business processes in order to decrease costs, enhance efficiency and gain competitive position over their competitors (Nour and Mouakket, 2011; Gupta and Kohli, 2006).

Therefore based on the premise of (Shehab et al., 2004) that ERP systems facilitate in creating, managing and maintaining the information backbone for top management decision making, our study seeks to establish the grounds under which challenges are posed by the ERP system towards full acceptance, use and ownership of the process by your employees regardless of whether their station is at top or mid level management.

I wish to request you to be one of my respondents in the study. Kindly answer all the questions as accurately as possible. The results of this study will be used for academic purposes only. The information given will be treated with utmost confidentiality.

Please: Do not write your name anywhere on this questionnaire
Please: tick appropriately where required.

1. BACKGROUND INFORMATION

1. Gender: Male [ ] Female [ ]

2. Age: 18-25yrs [ ] 26-34yrs [ ] 35-45yrs [ ] 45 and above[ ]

3. Marital Status: Single [ ] Married [ ] Divorced [ ] Separated [ ]

4. Level of Education: Secondary [ ] Diploma [ ] Higher Education [ ] Other [ ]

5. Employment level: Managerial level [ ] Non-Managerial level [ ]

If Managerial level, fill Part 1; if Non-Managerial level, fill Part 2.

6. Number of Years at the position: 0-5[ ] 5-10[ ] 10 and above [ ]

PART 1: SECTION FOR MANAGERIAL LEVEL STAFF

7. Which Department do you work in? HR [ ] Finance [ ] Procurement[ ] Technical[ ] IS[ ] Corporate quality, safety and environment[ ]

8. Are you computer literate?

Yes [ ]

No [ ]

If yes, up to what level? Only computer packages [ ]

Computer packages plus professional packages [ ]

9. Are you aware of the existence of the Enterprise Resource Planning (ERP) Software in your organization?

Yes [ ]

No [ ]

If yes, continue to question 4 below; if no, stop here.

10. Are you aware if it is implemented in your organisation?

Yes [ ]

No [ ]

11. Are you directly involved in using ERP system? Yes [ ] No [ ]

Explain how,_____

12. Did you receive any training on the use of ERP before it was implemented in your organization? Yes [ ] No [ ]

If yes, Specify_____

13. If training was conducted, what is your assessment of its impact on the managers and end users?

1-strongly disagree

5-strongly agree

Training factors	**1**	**2**	**3**	**4**	**5**	
Training of trainers is the best approach						
All staff should be trained						
Training should not focus on how to use the system also on new business processes						

14. Which area were you trained in? All aspects of ERP [ ]

Only my area [ ]

Don't Know [ ]

15. The training given was appropriate

1-strongly disagree [ ]

2-Disagree [ ]

3-fairly agree [ ]

4-Agree [ ]

5-strongly Agree [ ]

16. Do you think more technology is needed for the implementation of ERP in your organization?

Please tick appropriately

Strongly disagree	
Disagree	
Fairly agree	
Agree	
Strongly agree	

If yes, Specify;

_____

_____

_____

17. In your view, would you say that ERP was successfully implemented in your organisation?

_____

18. Kindly rate the success of your organization's ERP implementation.

0%-25% success rate [ ]

26%-50% success rate [ ]

51%-75% success rate [ ]

76%-100% success rate [ ]

PART 2: SECTION FOR MIDDLE LEVEL AND NON-MANAGERIAL STAFF

18. Which Department do you work in? HR [ ] Finance [ ] Procurement [ ]
Technical [ ] IS [ ] Corporate quality, safety and environment [ ]

19. What major changes did your company face during ERP implementation?

a. Realigning of strategic goals [ ]
b. Resolving conflict in ERP implementation [ ]
c. Updating/ increasing IT and other equipment [ ]
d. Other, Specify_____

20. Is the ERP system picked for your organisation appropriate? Yes [ ] No [ ]
If yes, explain_____

21. Was any assessment done before ERP implementation?

Yes [ ]

No [ ]

22. Who was involved in the implementation process?

IT department [ ]

HR department [ ]

Operations department [ ]

All departments [ ]

Other, specify_____

23. Who took the leading role in the implementation process?

IT department [ ]

HR department [ ]

Operations department [ ]

Customer Service [ ]

All departments [ ]

Other, specify_____

24. In your opinion, who should take the lead role in the implementation process?

IT department [ ]

HR department [ ]

Operations department [ ]

Customer Service [ ]

All departments [ ]

Other, specify_____

25. What is your role in the ERP implementation?

Providing direction [ ]

Monitoring process [ ]

Other, Specify_____

26. Does IT skills and knowledge affect ERP implementation in your organisation?

Yes [ ]

No [ ]

Not Sure [ ]

27. In your opinion does top management involvement affect ERP implementation?

Yes [ ]

No [ ]

Not Sure [ ]

28(a).Briefly describe the overall management and planning situation here at your organization since the implementation of ERP?

(b)In your view, how has the planning and management situation described in (a) above affected the implementation of ERP here at your organization?

29(a).Briefly describe your overall assessment of the level of commitment of management to ICT application in operations here at your organization

(b)In your view, has the commitment level of managers described in (a) above affected the implementation of ERP here at your organization?

30. How would you describe the ERP knowledge and Expertise at your company at the moment?

31.Do non-managerial staff need training in ERP for its successful implementation?

Yes [ ]

No [ ]

32. In your view, would you say that ERP was successfully implemented in your organisation?

THANKYOU VERY MUCH FOR YOUR COOPERATION

APPENDIX 2: RESEARCH TIME SCHEDULE

ACTIVITY	TIME FRAME													
	MAY		JUNE				JULY					AUGUST		
	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	W5	W1	W2	W3
Construction of questionnaire														
Pilot Study														
Review of pilot study findings														
Field Data Collection														
Data Analysis														
Report Writing and Dissemination														

APPENDIX 3: BUDGET

ITEM		No. Of Units	Cost per Unit	Total Cost
Pilot study	Photocopy services-Questionnaires	10	15	150
	Field visits (transport)		500	500
	Telephone costs	Assistant 1	2,500	2,500
	Research assistants fees	Assistant 2	2,500	2,500
Data Collection	Photocopy services-questionnaires	245	15	3,675
	Field Visits (transport & allowances)		500 2,500	1,500
	Telephone costs	Assistant 1	2,500	2,500
	Research assistants Fees	Assistant 2	2,500	5,000
Data Analysis			10,000	10,000

Report Writing		2	2,500	5,000
TOTAL				**33,325**

APPENDIX 4: LIST OF PARASTATALS

Source: Parastatal News Kenya

Office of the Vice President

National Museums of Kenya

Betting Control and Licensing Board

N.G.O. Co-ordination Bureau

Ministry of Finance

Kenya Revenue authority

Retirement Benefits Authority

Kenya Re-Insurance Corp.

Capital Markets Authority

Consolidated bank of Kenya

Deposit Protection Fund Board

Kenya Post Office savings Bank

Kenya Accountants & Secretaries Examination Board (KASNEB)

Kenya National Assurance (2001) Limited

Central Bank of Kenya

Capital Markets Tribunal

State Corporations Appeals tribunal

Kenya Institute for Public Policy Research and Analysis

Ministry of Education & Ministry of Higher Education, Science & Technology

National council for Science & Technology (NCST)

Public Universities Inspection Board

University of Nairobi

Moi University

Egerton University

Jomo Kenyatta University of Agriculture & Technology

Kenyatta University

Maseno University

Kenya National examination Council

Kenya Literature Bureau

Jomo Kenyatta Foundation

Kenya Institute of Education

Kenya Education staff Institute

Commission for Higher Education

Higher Education Loans Board

Teacher's Service Commission

Ministry of Livestock & Fisheries Development

Kenya Marine & Fisheries Research Institute

Kenya dairy Board

Kenya Meat commission

Kenya Vetinary Board

Co-operative College of Kenya

New Kenya Co-operative Creameries Ltd

Ministry of Regional Development Authorities

Ewaso Ngiro North Development Authority

Ewaso Ngiro South Development Authority

Lake Basin Development Authority

Coastal Development Authority

Kerio Valley Development Authority

Tana & Athi River Development Authority

Ministry of Housing

National Housing Corporation

Ministry of Roads & Public

Ministry of water and Irrigation

National Water Conservation & Pipeline Corporation

National Irrigation Board

Kenya Water Institute

Water Services Regulator Board

Lake Victoria South Water Services Board

Coast Water Services Board

Northern Water Services Board

Water Services Trust Fund

Rift Valley Water Services Board

Lake Victoria North Water Services Board

Athi Water Services Board

The Tana Water Services Board

Water Resources Management Authority

Ministry of Agriculture

Tea Board of Kenya

Pyrethrum Board of Kenya

Horticultural Crops development authority

Coffee Board of Kenya

Agricultural Finance Corporation.

National Cereals & Produce Board

Kenya Plant Health

Western University College of science and Technology

Ministry of Energy

Kenya Power and Lighting Company

Kenya electricity Generating Company (KenGen)

Kenya Pipeline Company

National Oil Corporation of Kenya

Kenya Petroleum Refinery

Electricity Regulatory Board

The Energy Tribunal

Rural Electrification Authority

Energy Regulatory Commission

Ministry of Transport

Kenya Airports Authority

Kenya Railways Corporation

Kenya Ports Authority

Kenya Ferry Services Limited

Transport Licensing Board

Kenya civil Aviation Authority

Transport licensing Appeal Tribunal

Kenya National Shipping Line

Ministry of Information & Communications

Communication Commission of Kenya

Postal Corporation of Kenya

Works

Kenya Roads Board

Ministry of Gender, sports, Culture & Social Services

National Sports Stadia Management Authority

Kenya Cultural Centre

Kenya National Library services

National Disability Council

Gender commission

Ministry of Health

Kenyatta National Hospital

Kenya Medical Training College

National Hospital Insurance fund

Moi Teaching & Referral Hospital, Eldoret

Kenya Medical Research institute

Kenya Medical Supplies Agency

Radiation protection board

Ministry of Tourism & Wildlife

Kenya Tourist Development Corp.

Kenya Tourist Board

Catering Training & Tourism Development levy Trustees

Kenya Utalii College

Kenya Wildlife Services

Kenyatta International

Inspectorate Board

Kenya Sugar board

Nzoia Sugar Company

Chemilil Sugar Company

Kenya Sugar research foundation

Pests control Products Board

Central Agricultural Board

Nyayo Tea Zones Development Corporation

Agricultural development Corporation

Kenya Seed Company

Kenya Agricultural research Institute

Coffee Research Foundation

Tea research foundation

Sugar Arbitration board

Agricultural Information resource Centre

Kenya Sisal Board

Bukura Agricultural College

Telkom Kenya Ltd.

Kenya Broadcasting Corporation

Kenya Film Commission

The Kenya Information & Communication Technology

Ministry of Industrialization

Numerical Machining Complex

Kenya National accreditation service

Anti-Counterfeiting Agency

Kenya Industrial Property Institute

Kenya Agricultural & Development Institute

East Africa Portland cement

Kenya Industrial estates

Kenya Bureau of Standards

Industrial development bank Capital Limited

Ministry of Trade

Kenya Investment Authority

Export Processing Zones Authority

Kenya National Trading Corporation

Kenya Wine Agencies Limited

Industrial & Commercial Dev. Corporation (ICDC)

Industry Property Tribunal

Conference Centre Corporation

Hotels& Restaurants Authority

Ministry of Environment & Natural resources

Kenya Forest Service

Kenya Forestry Research Institute

National environmental Management authority

Ministry of Justice & Constitutional Affairs

Public Complaints Standing committee

Ministry of Planning and National Development

Poverty Eradication Commission

Kenya National Bureau of Statistics

Ministry of National Heritage

Public Archives Advisory Council