

USING PROJECT MANAGEMENT AS A  
STRATEGY FOR IMPROVING PERFORMANCE  
INDICATORS IN A CHANGING EXTERNAL  
ENVIRONMENT: THE CASE OF KENYA POWER  
AND LIGHTING COMPANY LTD DISTRIBUTION  
PROJECTS

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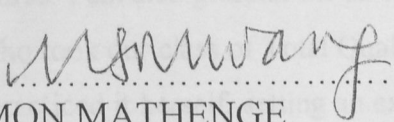
A Management Research Project Submitted in Partial  
Fulfillment of the Requirements for the Award of  
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School of Business, University Of Nairobi

October 2006

**DECLARATION:**

BY THE STUDENT

This research proposal is my original work and has not been presented for a degree in any other university

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This management proposal has been submitted for presentation with my approval as University Supervisor

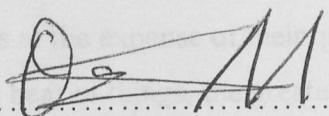
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## ABSTRACT

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This study examines the external environment of KPLC and the major challenges it presents, and then the key features and techniques of KPLC's Project Management work to determine whether KPLC's the strategy is helping the Company to cope with changes in the external environment. Secondary data was obtained from the Company's records on project tendering and management for all 204 projects scheduled between July 2004 and December, 2005, while primary data was obtained by a questionnaire filled in by project management personnel in the Company. The data was analyzed qualitatively and quantitatively. Tables and Charts were used to present and understand the results which were measured against a list of Performance Indicators against which the Company measures its work output (Njoroge, 2003).

The results identify several external environmental factors for KPLC, grouped under the industry environment and other general environmental factors. The study identified two distinct phases of the KPLC's Project Management Cycle: A preparatory Tendering Phase being sometimes longer than the actual Construction Phase. Of the Projects studied, 5% were completed early, 10% completed late and 84% was found to be late and incomplete. On the quality of work, an average of 23% of projects was calculated to

## ABSTRACT

There is a lot of concern in Africa in general, and Kenya in particular, about poverty eradication, employment creation and economic growth (Soderbom, 2005). Since national prosperity is created, not inherited (Porter, 1998), it is important to study how national institutions are creating enabling environment for growth of the economy, especially in a changing external environment (Barney and Hesterly, 2005) so as to help formulate appropriate adaptation to changes for survival, growth and development. Such adaptations can be taken as strategies (Omondi, 2004). The provision of Infrastructure and Utilities in the country is a priority area, and a crucial aspect of it is electricity, which in Kenya is distributed by the Kenya Power and Lighting Company (KPLC), and hence the choice of the Company for case study. KPLC uses Project Management for its Distribution Line works. Due to its implied cost, time, quality and stakeholder satisfaction criteria, this method is now examined here for efficacy.

This study examines the external environment of KPLC and the major challenges it presents, and then the key features and techniques of KPLC's Project Management work to determine whether KPLC's the strategy is helping the Company to cope with changes in the external environment. Secondary data was obtained from the Company's records on project tendering and management for all 204 projects scheduled between July 2004 and December 2005, while primary data was obtained by a questionnaire filled in by project management personnel in the Company. The data was analyzed qualitatively and quantitatively. Tables and Charts were used to present and understand the results which were measured against a list of Performance Indicators against which the Company measures its work output (Njoroge, 2003).

The results identify several external environmental factors for KPLC, grouped under the industry environment, and other general environmental factors. The study identified two distinct phases of the KPLC's Project Management Cycle: A preparatory Tendering Phase being sometimes longer than the actual Construction Phase. Of the Projects studied, 5% were completed early, 10% completed late and 85% was found to be late and incomplete. On the quality of works, an average of 23% of projects was completed to

designed standards, 67% completed with modifications, but 10% with some missing items. On stakeholder groups' satisfaction, none were delighted, and customers tended to be dissatisfied. Thus the projects do not satisfy the quality, time, and stakeholder satisfaction criteria, but on examining the performance indicators, some real benefits have been realized from the strategy. The study suggests several implementation issues that should be streamlined to improve project management at KPLC.

The study identified some areas for further study including the differences in stakeholder satisfaction, the Government Procurement policy, the effect of the Government Procurement Policy on Small and Medium enterprise contractors in Kenya, Project Supervisor Performance as a factor of education, training, personality and motivation, as well as the efficacy of other management sciences such as Total Quality Management in rectifying the deficiencies of the KPLC project management. The study was limited in time and resources, so some stakeholders were not covered in the study, but the study still does illustrate the use of project management as a strategy to improve performance indicators in a changing external environment.

### 1.3.1 The Project Concept

A project is a complex set of activities where resources are used in expectation of results and which leads itself to planning, financing and implementing as a single unit. A project usually has a specific starting point and a specific ending point, according to a specific objective. It usually has a well-defined sequence of investment and production activities and a specific group of benefits that can be identified, quantified and valued, either totally or monetarily (Gutierrez, 1992). Project Management is a management approach concerned with getting the job done- on time, within budget, and according to specifications. The primary focus is on results. When professionals carry out projects, they direct their efforts to achieve clearly defined results, say building a bridge, or a building (Haker & Davidson, 2004). Although project management is thought to have emerged as a discipline in the 1950s, it has modern applications and is a solution to modern business challenges of today. A project management approach is well suited to today's chaotic business environment in which nothing seems to be clear. The environment is characterized by such phenomena as downsizing,



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

#### 1.1.1 External Business Environment

The external business environment generally refers to conditions largely outside of the business firm- to factors that are generally outside its control or that it can only influence. These conditions either directly or indirectly affect the ability of the firm to conduct business profitably. The international business environment, also called the global business environment, is the business environment resulting from conditions across national boundaries (Yasin, 2003). Some of the forces that shaped the external business environment in the last decade include rapid technological change, globalization and liberalization, the "end " of cold war ideology, "Border-less" economies, and International institutions such as the World Bank Group. Business firms must try and adapt to the prevailing business environment at each point in time either for survival or to remain competitive. Some of the adaptation strategies can be proactive or reactive. This study is focused on one such strategy, project management.

#### 1.1.2 The Project Concept

A project is a complex set of activities where resources are used in expectation of return and which lends itself to planning, financing and implementing as a single unit. A project usually has a specific starting point and a specific ending point, intending to accomplish specific objectives. It usually has a well-defined sequence of investment and production activities and a specific group of benefits that can be identified, quantified and valued, either socially or monetarily (Gittinger, 1982). Project Management is a management approach concerned with getting the job done- on time, within budget, and according to specifications. The primary focus is on results. When professionals carry out projects, they direct their efforts to achieve clearly defined results, say building a bridge, or a structure. (Block & Davidson, 2001). Although project management is thought to have evolved as a discipline in the 1950s, it has modern applications and is a solution to modern business challenges of today: "A project management approach is well suited to today's chaotic business environment in which nothing seems to be clear. The environment is characterized by such phenomena as downsizing,



outsourcing...reengineering...customer focus...using borrowed resources to enable organizations to use resources cost effectively, and to send them back to their functional home when the work is done (Block & Davidson, pg 5) "

### **1.1.3 The case of Kenya Power & Lighting Co. Ltd. (KPLC)**

#### ***KPLC and the national economy:***

“National prosperity is created, not inherited. It does not grow out of a country’s natural endowments, its labor pool...It depends on the capacity of its industry to innovate and upgrade. Companies gain advantage against the world’s best competitors because of pressure and challenge. They benefit from having strong domestic rivals, aggressive home based suppliers and demanding local customers.” (Porter, 1998). Few sectors are as important to a nation’s competitiveness as energy sector, particularly electricity. In Kenya, the issues in the electricity industry hinge on access by populations and cost per unit. Yet global environmental forces threaten these two factors. As a nation, Kenyans must study what these global challenges are, know how their industry can cope with those forces, and plan how to cope with the effect of the changes to industry. The electricity industry in Kenya is made up of the following players (KPLC website, 2005):

- KPLC, which owns all transmission and distribution assets, buys electricity in bulk from generating companies for transmission, distribution and retail to customers.
- The Kenya Electricity Generating Company (KenGen), which manages and develops all public electric power generating facilities. It sells electricity in bulk to KPLC.
- Independent Power Producers (IPPs), which build, own and operate power stations and sell power in bulk to KPLC.
- Electricity Regulatory Board (ERB) which reviews electricity tariffs and enforces safety and environmental regulations in the power sector as well as safeguarding the interests of the electricity consumers
- The Ministry of Energy, which formulates policy on the energy sector, in addition to administering the Rural Electrification Scheme.

### *KPLC's recent history and relationship with the external environment.*

KPLC is a public utility company, whose majority shareholding is with the Government of Kenya. It is a blue-chip company whose shares are traded on the Nairobi Stock Exchange, and is the oldest of the electric power sector players, and the only major one exposed directly to market forces as all the others are fully government controlled. It is the only service provider of electric power in Kenya, whose cost is an important element of global competitiveness. Thus, the fortunes of KPLC in the global marketplace will determine the fortunes of the Kenyan economy.

The world is changing, and the favored model of the electric power industry is rapidly moving from the government controlled, fully integrated monopoly as was KPLC, to “unbundled” and privately owned commercial units. KPLC has already been forced to undertake this path with the separation of the generation business under the Kenya Electricity Generating Company, KenGen. KPLC sunk from being one of the most profitable companies in Kenya (1998-99), to being a leading loss maker (2001-3) and back to profitability again in 2004 and 2005. The problems that led to the loss were twofold: The effects of a major drought around 2000-2002 and both the separation of the generation functions to KenGen and the lopsided Power Purchase Agreements and tariffs between the two companies. The separation of the functions was modeled along recommendations from the World Bank. In order to turn round to profitability, the company had to get a loan from World Bank under the Energy Sector Recovery Project (ESRP) in 2000. This came with an attached condition that the company had to be prepared for privatization, and that an essential part of this preparation was the hiring of a Management Contractor of international repute to run KPLC for two years to turn it around from its loss making conditions. However, owing to a change of the company management occasioned by change of government in 2002 and a renegotiation of tariffs with its suppliers, KPLC swung back to profitability, even before the Management Contractor of international repute was appointed. During the same period, under development partner pressure, the Government introduced the Procurement Regulation (2002), a new purchasing procedure for all public procurement. This lengthy and bureaucratic procurement system seriously hampers the ability of KPLC to do business or make further improvement (Kisero, 2005). Commentators argue that whoever runs the company will not do well if the company is subject to the Purchasing procedures. It has been argued that, since the last two years have been profitable, what the company needs

is not a turn-around, but exemption from those rules. There is ranging debate in the media as to whether it is prudent to go along with the original agreement to appoint the Management Contractor, who will be in all likelihood exempted from the procurement regulations, and whether it is fair to judge the performance of local management running under the rules by results of expatriates with vastly superior terms of service and exempted from the procurement rules. In the public domain and in the press, this is seen as a classic example of how unfair the international environment is to African countries and to Kenya. Ironically, Kenya can hardly afford to turn back on the original agreement because of a negative country rating and reports on country corruption (US Department of State, 2003). Therefore KPLC provides a very interesting case of how the external environment affects a firm. In order to achieve performance indicators recommended as part of restructuring (Njoroge, 2003), KPLC had to have several strategies; chief among those is running its power distribution works as Projects.

## 1.2 The Research Problem

Several studies have been carried out to examine the relationship between firms and their external environments in Kenya, and these tend to focus on the strategic reactions of firms to changing circumstances. Examples of such studies involved Life Insurance companies (Wairegi, 2004), State Owned Enterprises (Wachira 2004), Kenya Microfinance institutions (Maru, 2004), The Healthcare Industry (Lengopito, 2004), The Cooperative Bank of Kenya (Kathuku, 2004) and Motor Vehicle Franchise Holders (Kombo, 1997). Some related studies have focused on the dynamics of managing change, e.g. A survey of change Management Practices within NGOs in Kenya (Adieri, 2000). All these studies have not tried to separate the external environment into its local and global components. They also have tended to be organization specific as opposed to identifying specific methods on how a firm under pressure from the global environment can turn to. A few studies offer information on specific business strategies, such as “The effect of Business Process Re-Engineering on Business Process Cycles (Atebe, 2001) or “Advantage through Outsourcing of Non Core Activities” (Kirui, 2001). Some studies have been done about the problems affecting Project Management within an organization. Examples of these are Mwadali (1996) - Analysis of major factors that afflict project



management, and Kibiku (1997) - The relationship between project appraisal results and project implementation results. The author of this study did not come across any studies on the use of project Management as a strategy to cope with environmental changes in general, and global environmental changes in particular. It is important for a firm to understand its environment and its demands, and take well-studied actions, because it is possible to misunderstand the environmental signals and take actions that are not customer focused, or actions that are detrimental to the well being of the organization (Njoroge, 2003). We therefore should be able to answer the following question: "What factors make up the external business environment for Kenya Power and Lighting Company?"

Project management is a goal oriented management system that seeks to spend resources on the achievement of objectives within specifications of quality, cost, and timeliness. Surviving the international environmental change today demands expertise and dexterity in achieving quality, cost and timeliness targets on a continuous basis with ever tightening conditions. For a company that intended to survive global environmental change by using project management as a strategy of choice, it is important to answer the following question: "What are the features and techniques of the project management system of the Kenya Power and Lighting Company?"

It is also necessary to evaluate the present circumstances of the company to determine if it is coping well with changes in the external environment, and whether project management has helped the company cope with the changes. In this, it is also important to analyze whether any shortfall in expected results are the shortcomings of project management as a discipline or from failure to properly implement project management tenets. This would serve as a useful lesson for firms that seek to use project management as a competitive tool or for survival in a changing environment. That can be summarized in the following question: "Is project management is helping the Kenya Power and Lighting Company to positively cope with the changes in the international business environment?"



## CHAPTER TWO LITERATURE REVIEW

### 1.3 The Research Objectives

The objectives of this study are:

1. To establish what KPLC considers to be the major challenges of changes in the external business environment
2. To establish the key features and techniques of KPLC's project management
3. To determine whether KPLC's project management is helping the company to cope with the changes in the external business environment.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 The External Environment

The external business environment for a firm consists of the immediate factors outside the business (such as customers, competitors, suppliers, creditors, labor unions, governments local communities and other stakeholders) as well as general factors outside the business (sociocultural, economic, political, legal and technological) that exert influence on a firm while conducting business (Ortiz, 2004). The components of the general external environment factors have been subdivided into the industry factors and the more general factors, to suggest that the industry factors have a more immediate impact and are therefore a closer concern to the firm (Barney and Hesterly, 2005). Some of the factors, e.g. Industry factors, cultural factors, and political factors in most cases reflect the country factors. Other more general factors like specific international events (e.g. terrorism), technological change, world political trends, and world economic trends tend to be related the state of world affairs.

The particular subset of external environmental factors that result from the state of world affairs and international markets are called the Global environmental factors (Ortiz, 2005). External environmental factors are usually the most difficult for a firm to influence or change (Barney and Hesterly, 2005 & Ortiz, 2005). Firms usually take measures to ensure that their businesses are protected from the adverse effects of these external factors, and that they take advantage of opportunities presented by the same factors. Such measures and actions can be construed as strategy (Omondi, 2004).

A chart illustrating the general environmental factors is as below (Barney and Hesterly, 2005). Global strategic planning is more complex than purely domestic planning. Some of the factors that contribute to this increase in complexity include the following: Multiple political, economic, social and cultural environments as well as various rates of change within each of them. There are complex interactions of national and foreign environments due to national sovereignty issues and widely differing economic and social conditions. Due to geographic separation, cultural and national differences, and variations

in business practices across nations, communications and control efforts are difficult between interacting business partners. An illustration of the general external environment is as shown in the chart below (Barney & Hosterly, 2005)

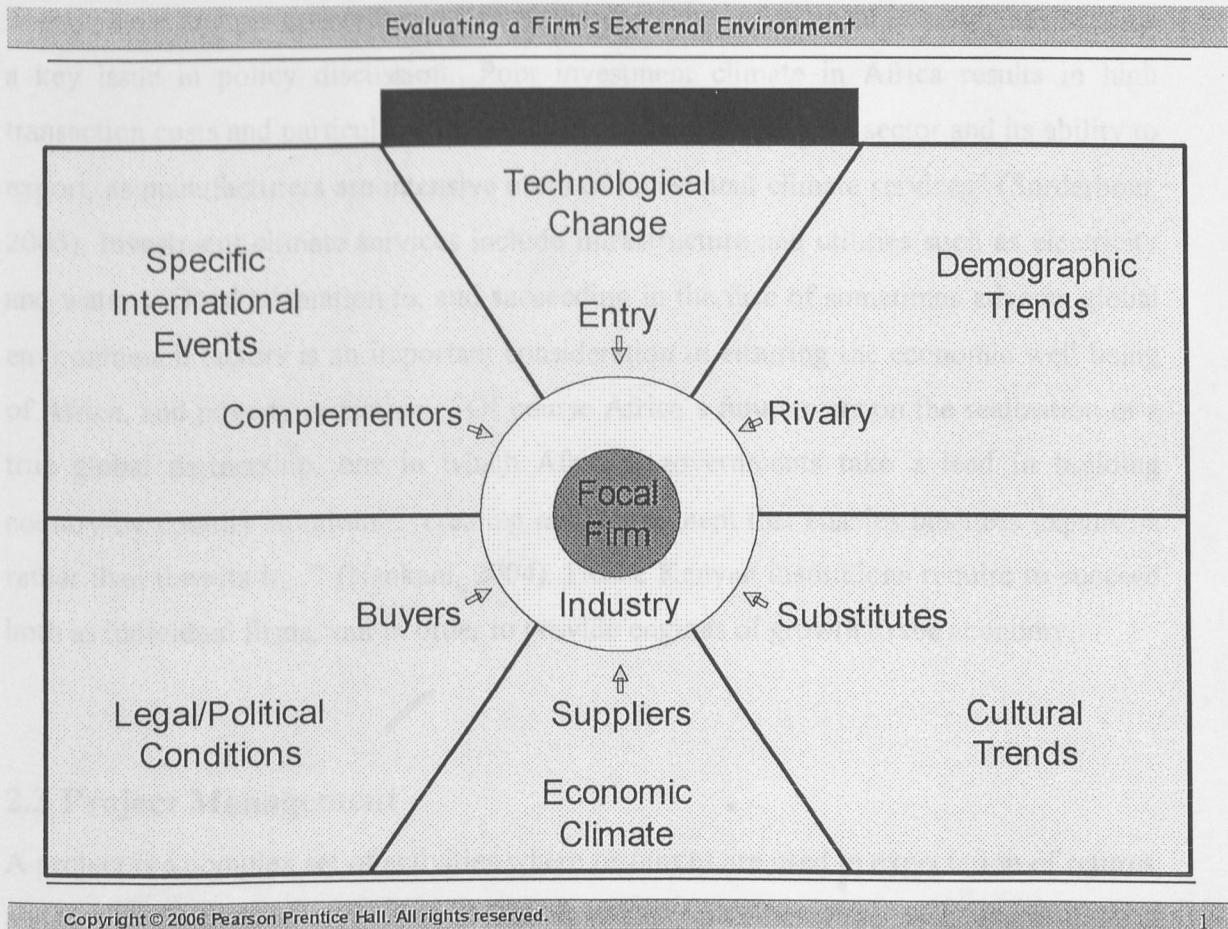


Figure 1: Evaluating a firm's external environment. Adopted from Barney, J. B. and Hesterly, W. S. (2005). Strategic Management and Competitive Advantage Concepts, at [www.Amazon.com](http://www.Amazon.com)

## 2.2 Need For Adaptation

The importance of adaptation strategies is in matching a firm to its environment, in order to maximize the effectiveness of its strengths and reduce the vulnerability resulting from its weaknesses, thus ensuring a firm's continued survival (Potter, 1998). Therefore, all firms need good strategies and adaptation. African in general and Kenya in particular is concerned with economic growth and poverty reduction, and this economic growth is



seen to be driven by some key institutions, both in the private sector and in infrastructure provision sub sector. “Reversing the poor economic performance of Africa’s private sector has become a central concern to policy makers. The basic reason is that improved performance enables firms to increase wages and generate jobs, and thereby contribute to development and poverty reduction. In recent years the “investment climate” has become a key issue in policy discussion...Poor investment climate in Africa results in high transaction costs and particularly disadvantages the manufacturing sector and its ability to export, as manufacturers are intensive users of investment climate services” (Sorderbom, 2005). Investment climate services include infrastructure and utilities such as electricity and water. Good adaptation to, and succeeding in the face of sometimes adverse global environmental factors is an important consideration in ensuring the economic well being of Africa, and poverty reduction. “Of course Africa’s future rests on the realization of a true global partnership, one in which Africa’s governments take a lead in building country-by-country solutions ...creating an environment that enables business expansion rather than thwarts it...” (Nankani, 2004). Hence Kenyan institutions require to succeed both as individual firms, and in order to provide engines of growth to the economy.

### **2.3 Project Management**

A project is a complex set of activities where resources are used in expectation of returns, and which lend itself to planning, financing and implementation as a single unit. A project usually has a specific starting point and a specific ending point, intending to accomplish specific objectives. It usually has a well-defined sequence of investment and production activities and a specific group of benefits that can be identified, quantified and valued, either socially or monetarily ( Gittinger, 1982). “Project Management is a management approach concerned with getting the job done – on time, within budget, and according to specifications. The primary focus is on results. When professionals carry out projects, they direct their efforts to achieve a clearly defined result...” (Block & Davidson, 2001). Choudhury (1998) identifies the same performance indicators for project management as time overrun, cost overrun and project sickness, which refers to the ability or inability of the project to deliver the desired outputs.



### 2.3.1 The Project Life Cycle

The life of a project can be divided into several parts, called the Project Life Cycle stages. Project management revolves around managing the different stages of the life cycle, and in particular the engagement and retirement of resources as they are needed, used, and are no longer necessary to the project (Block & Davidson, 2001). A chart showing the project life cycle is as follows (Mbeche, 2000).

W. Kosura

Chart 2-2: Project Cycle Stages

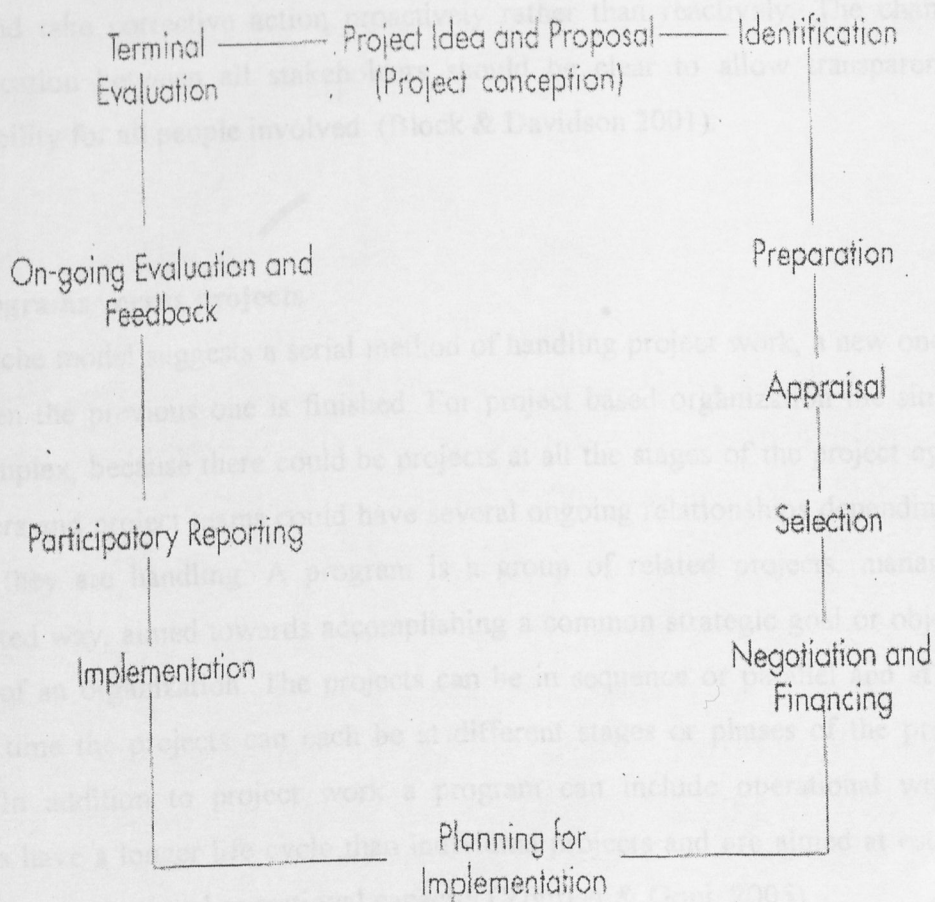


Figure 2: The Project Cycle Stages. From Project Planning, Implementation and Evaluation: A Training Manual. Mbeche, Prof (Ed), pg.35

### 2.3.2 Project Cycle Management

Whittaker (1995) defines two phases of project management that are interdependent and necessary for good project management. These are Project Definition- determining the Mbeche (2000) suggests that a project goes through the following phases: Conception, Identification, Preparation, Appraisal, Selection, Negotiation and Financing, Planning for Implementation, Implementation, Monitoring and Participatory Reporting. Chandra (2002) has a model which has the project stages as Planning, Analysis, Financing, Implementation and Review. However, many authors agree that these activities go hand in hand and are not easy to isolate, but must all be carried out together to make the project work. (Barney & Hesterly, 2005), and that all these activities may involve beneficiaries, implementing staff, supervisory staff, and project management staff. The aim is to ensure that the activities are carried out on schedule to facilitate implementation as specified in the project design. It is desirable to detect any constraints to realizing the design and take corrective action proactively rather than reactively. The channels of communication between all stakeholders should be clear to allow transparency and accountability for all people involved. (Block & Davidson 2001).

### 2.4 Methods Of Project Planning

#### 2.3.2 Programs versus projects

The Mbeche model suggests a serial method of handling project work, a new one started only when the previous one is finished. For project based organization the situation is more complex, because there could be projects at all the stages of the project cycle, and the players and project teams could have several ongoing relationships depending on the projects they are handling. A program is a group of related projects, managed in a coordinated way, aimed towards accomplishing a common strategic goal or objective or mission of an organization. The projects can be in sequence or parallel and at any one point in time the projects can each be at different stages or phases of the project life cycle. In addition to project work a program can include operational work since programs have a longer life cycle than individual projects and are aimed at establishing some new organizational operational capacity (Yourker & Gopi, 2005)

### **2.3.3 Project Cycle Management**

Whittaker (1995) defines two phases of project management that are interdependent and necessary for good project management. These are Project Definition- determining the scope and nature of project to be designed, and Project Strategy- establishing how the design and construction are to be achieved. The strategy is dependent on the objectives, business requirements, technology, external influences, available resources, managerial experience, risks and uncertainties of the project execution. Project Cycle management can be defined as the realization of the project concepts and goals through effective, effective, transparent, accountable and responsible administration of a given set of activities to the satisfaction of stakeholders. All stakeholders should be regularly consulted during the life of a project. Project cycle management therefore implies a process oriented project management system covering the whole project cycle from conception to project completion. It is an effective decision-making process to ensure certain actions occur at the right time within the life of a project so as to attain the desired and specified quality output within the budgeted costs (Mbeche, 2000)

### **2.4 Methods Of Project Planning**

There are two several methods of Project Planning in common use, and some of these include Bar Charts, Gantt Charts, Network Techniques and Network Diagrams (Chandra, 2002). These have been refined in time into the two most popular methods of project planning which are the Critical path Method (CPM) and the Project Planning matrix (PPM) (Yourker and Gopi, 2005 & Mbeche, 2000).

#### **2.4.1 The Critical Path Method:**

Stires D. and Murphy M. (1962) have written a book about the Program Evaluation and Review Technique (PERT) and the Critical Path Method (CPM) of Project Management. This breaks the project into activities and works out the logical sequence in which they are carried out. It determines which activities must be done to precede others. It uses planning aids like the Gantt chart. Some activities, if delayed, can delay the whole project, and these are called the critical activities. Some others activities can be done within more flexible times and these are called non-critical activities. The aim of the



Critical path Method is to identify the Critical Path which represents the minimal time possible to carry out a project and schedule all other activities to fall within this duration.

#### **2.4.2 The Project Planning Matrix**

Mbeche (2000) gives examples on how to use the Project Planning Matrix. This is a four by four matrix, which enables the maker to identify project purposes, and goals and plan for project outputs and inputs. The resulting table is called a log frame. The log frame is useful in planning a project and provides measures of evaluating the project.

### **2.5 Project Management Teams**

When implementing project works, the kind of organization set up to carry out the work depends on the resources, expertise, and complexity of project. Chandra (2002) suggests that the traditional management organization is not suitable for project work since it has no means of integrating different departments at levels below the top management, does not facilitate effective communication, coordination and control across departmental boundaries and different professional backgrounds that are often needed in a project. He suggests that the project organization may be one of three forms- Line and Staff, which uses a coordinator to be a focal point for receiving project related information from several departments; the Divisional structure where a separate division is established to run the project; or a Matrix structure which is a cross between the two. Yourker and Gopi (2005) have used the following classifications to describe those three project organizations:

#### **2.5.1 The Functional Project Structure**

Here, the project work is carried out within a functional department. It uses the resources and technical abilities available in the department, and must compete for attention with other departmental programs. Team members are secure and comfortable in their departmental assignments and there will be limited start-up problems. However, there may be inertia or no motivation to prioritize the project work.

#### **2.5.2 The Dedicated Project Structure**

This is a dedicated organization set up especially for the project. It is a temporary structure that will last only for the life of the project, and therefore members will have job security anxieties and the management will finally have to deal with issues of

termination. However, it is efficient because of having focus, control and communication advantages. The team is likely to be focused on the same goals and have the project focus.

### **2.5.3 The Matrix Structure**

This has elements of the first two, a where a project team is formed within an organization, across several departments. Minimal new resources are needed, and therefore organization resources are used more efficiently. The team is more flexible. It suffers from organizational complexity and sometimes the command structure is ambiguous. This may lead to organizational conflict. This structure needs efficient communication and coordination if it is to work well.

## **2.6 The Project Management Strategy**

“The Project Management approach is well suited for today’s global environment in which nothing seems clear. The environment is characterized by such phenomena as downsizing, outsourcing...re-engineering ... and customer focus... using borrowed resources to enable organizations to use resources cost effectively, and to send them back to their functional home when the work is done” (Block & Davidson). Project Management is more goal oriented and superior to the traditional Management approach with the four functions of Planning, Organizing, Directing and Controlling and is more involving and precise (Kezbom & Edwards, 2001).

Project management can therefore be seen as the realization of concepts and goals through the efficient, effective transparent, accountable and responsible administration of a given set of activities to the satisfaction of stakeholders (Mbeche, 1999). Many scholars are agreed that, by considering project quality, completion time, project cost and the stakeholders’ satisfaction as a key objectives, Project management is a more strategic and all embracing approach to handling organizational works than the traditional management approach, and is therefore suited to the challenges of a rapidly changing global environment - Gittinger (1982); Mbeche (2000); Kezbom & Edwards (2001); and Yourker & Gopi (2005)

## 2.6.1 A comparison between Traditional and Project Management functions

### 2.7 Contractual Relationships

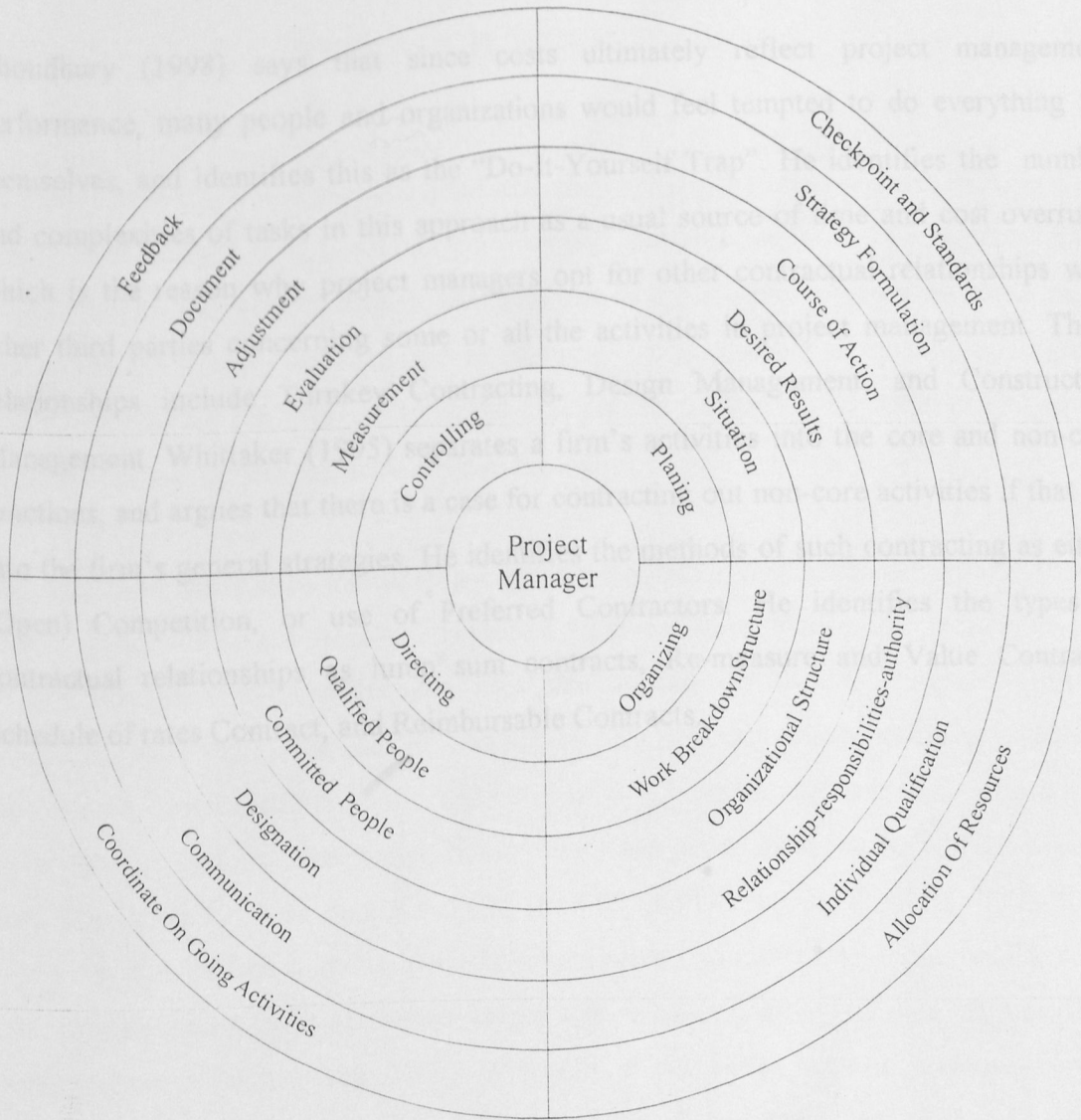


Figure 3: Project Management Functions. Adopted from Kezdom, Deborah S. and Edward, K. A. (2001). *The New Dynamic Project Management: Winning Through Competitive Advantage*, pg. 6



## 2.7 Contractual Relationships

Choudhury (1998) says that since costs ultimately reflect project management performance, many people and organizations would feel tempted to do everything for themselves, and identifies this as the “Do-It-Yourself Trap”. He identifies the number and complexities of tasks in this approach as a usual source of time and cost overruns, which is the reason why project managers opt for other contractual relationships with other third parties concerning some or all the activities in project management. These relationships include Turnkey Contracting, Design Management, and Construction Management. Whittaker (1995) separates a firm’s activities into the core and non-core functions, and argues that there is a case for contracting out non-core activities if that fits into the firm’s general strategies. He identifies the methods of such contracting as either (Open) Competition, or use of Preferred Contractors. He identifies the types of contractual relationships as lump sum contracts, Re-measure and Value Contracts, Schedule of rates Contract, and Reimbursable Contracts.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### **3.1 Choice Of Case For Study**

The aim of the study was to understand both the challenges to corporations in Kenya that result from changes in the external environment, which have mostly been perceived as hostile, and to examine if Project Management is a plausible response to some of the challenges. This study was intended to examine if it is possible to develop homegrown solutions to lessen the pressure from the external environment, and whether this can be done by improving firm and industry conditions.

The choice of the Kenya Power and Lighting Company was based on several factors. First, it is an important service provider of electric power, whose cost is an important element of global competitiveness, thus determining the overall competitiveness of Kenyan firms in the global market. It is a blue-chip company whose shares are traded on the Nairobi Stock exchange, and the only major player in the electrical industry sub sector that is not fully government owned. Its share prices have varied widely, between Kshs 9 in 2002 to more than Kshs 130 in 2005 (KPLC Annual Reports, 2002-2005), which is a trend worth studying since this share price rise represents public confidence in spite of unresolved procurement problems and a huge backlog of paid up customers pending connection (Munaita, 2005). Secondly, it was under external pressure to move from being government controlled fully integrated monopoly, to “unbundled” and privately owned commercial unit, which may work against the public goals of universal access, and low electricity costs. In the past, some of the prescriptions of “best practices” from the external environment had worked to the detriment of KPLC, for example the separation of the electricity generation business under KenGen, and the introduction of cumbersome procurement procedures, and lastly, that the international pressure seems overwhelming, and sometimes against commercial logic for the Company. Based on an agreement made in 2002 when the company was making losses, it was supposed to engage a management contractor to turn it around, and the pressure was still on in 2005, even though in the meantime the company had already turned around and was making

profits (Munaita, 2005). Ironically, KPLC and Kenya could hardly afford to turn back on the original agreement because of a negative country ratings and report from World Bank on corruption (U S State Department, 2003). In order for the company to meet some performance indicators recommended by World Bank, KPLC had adopted some strategies, chief among them the running of its Distribution power line extensions and maintenance works as Projects. Therefore KPLC provided a very interesting case of how the external environment affects a company and what can be done to survive the pressure.

## **3.2 Data Collection Method**

### **3.2.1 Secondary Data:**

Secondary data was collected (using tabulated format in Appendix 1) from 204 projects around the country that the KPLC Distribution Projects Development Section was currently handling at the time of this study. This was a census study of jobs received in the section after 27<sup>th</sup> July, 2004 and whose completion period fell before 10<sup>th</sup> December, 2005. Jobs whose start and end dates fell outside this range, although in progress, were not included in the study, because conclusions about their timely completion in many cases could not objectively be made. The data had been routinely collected for the purposes of job records and tracking, supervision of contractors, payments, and performance contract enforcement. Therefore this data was true and reliable since it was collected without bias. This information provided a good basis to qualitatively and quantitatively determine whether KPLC Distribution Projects in the study generally met the Project Management goals of being within time, quality, and budget, and whether they provided stakeholder satisfaction as desired.

### **3.2.2 Primary Data:**

A questionnaire was designed (See Appendix 2) for the Project Management personnel to examine their awareness of the external environmental factors and the effect of those factors on their project work. They were also questioned about their qualitative feeling on KPLC's Project Management performance, in order to countercheck the validity of the results from secondary data gathered and used as mentioned earlier. The first part of the questionnaire examined the respondent's work history and roles in Project Management and was generally intended to establish rapport with the person. The second part



examined the respondent's awareness or lack of it to the external influence issues and concerns, as an indicator of what KPLC considered important in the global environment. It also examined their experiences on the timeliness and quality issues of KPLC projects. The third part KPLC's Suppliers and Customers, and recent trends in these two groups of stakeholders. The fourth part examined the key features and techniques of KPLC's Project Management, and lastly, the fifth part explored the supervisor's general appraisal of KPLC's performance in Project Management goals of Quality, Time and Stakeholder satisfaction, and whether they felt that Project Management was helping the Company to cope with changes in the external business environment. In order to take care of the large difference in education standard between individual supervisors, simple and straightforward language was used in the questions asked. Some of the questions asked were exploratory and open, in order to capture as much information as possible from the diversity of the respondents' experience. Other questions were closed, each with the number of suggested responses which was deemed to provide sufficient information for the study. The questionnaire was pre-tested and edited to ensure that the language used conformed to the experience of the respondents, and the answers solicited would provide information suitable for the study objectives. It was forwarded with an introductory letter (see Appendix 3), and was administered using the drop-and-pick- later method, in order to eliminate researcher bias, and was issued to all 6 Project Supervisors.

### **3. 3 Data Analysis Method**

Once the responses were received, the questionnaires were edited for completeness and consistency before processing. Thereafter, the data was coded to enable categorization. The Secondary data was similarly edited for consistency and completeness. A Microsoft Excel spreadsheet was used in order to simplify calculations based on the data and therefore enable conclusions and generalizations to be made. The qualitative effects of project management was analyzed in relation to the checklist of performance indicators that KPLC was expected to meet as provided by Njoroge (2003) (See appendix 4). This type of analysis was used in similar studies in the past including Njoroge (2004), Omondi (2004), and Kombo (1997).

## CHAPTER FOUR

### DATA ANALYSIS AND FINDINGS

#### 4.1 Questionnaire Responses

All the six respondents to whom the questionnaire was issued responded to the survey, which represented 100% response. This can be attributed to the suitable introductory letter, and that the respondents chosen had an interest in the subject of the study. They were also interested in the growth of the Projects Section of KPLC in particular, and the Kenyan economy in general and hence they were enthusiastic to contribute ideas. The data obtained was used to answer the research questions and satisfy the research objectives as follows:

#### 4.2 The External Environment For KPLC

The external environment for KPLC and its impact on the operations of KPLC can be obtained by considering the answers given particularly in Part 2, 3, and 5 of the primary data questionnaire which deal with KPLC's operations, its suppliers and customers, and coping with customers and external demands, and the whole questionnaire in general. Using the Barney and Hesterly model (pg. 9) we can infer the industry and general external environment components as follows:

##### 4.2.1 Industry Environment

(a) Threat of new entrants: At the moment, KPLC is protected as a monopoly by the current laws and there is no threat of new entrants into the Power Distribution Industry. However, the World Bank Group and foreign Donors are seen as quite capable of demanding, and influencing changes in the way KPLC operates. Two instances cited in this study include the separation of the Power Generation function under KenGen, and the new Public Procurement Regulations (2002). In Question 8, 66% (4 out of 6) of the supervisors thought that the Donor community pushed for these changes, while 16% (1 out of 6) said the government acted independently. Another 16% were unable to decide on what the origins of the changes were. Therefore, if these external bodies were to push for liberalization and entry of competitors to KPLC, this poses a potential threat of new industry players for KPLC.

(b) Rivalry of players in the Electric Power Distribution Industry: KPLC is the one and only distributor of electrical energy in Kenya, with a legal monopoly of the market

(Question 13). However, that is not to say that KPLC enjoys unchecked powers in the market. In answering Question 4, the respondents identified the Ministry of Energy, the Electricity Regulatory Board, and Kenya Bureau of Standards as some of the statutory bodies that made rules that affect the operations of KPLC, and therefore may present indirect rivalry to KPLC.

(c) Substitutes: In answering Q12, the following products were identified as substitutes to electrical power as a source of energy: Charcoal, Firewood, Solar power, Paraffin, Liquefied Petroleum Gas, and Electric Power Generators. Only 13% of the Kenyan population has access to electricity. This presents both a challenge and an opportunity to KPLC since it presents a large untapped market, but also one that finds other energy sources cheaper or adequate for their needs.

(d) Power of Suppliers: Answers provided about Suppliers to KPLC (Questions 17, 18, and 19) show that the suppliers have low bargaining power. 100% of the respondents agree suppliers are increasing in number (Question 17), 83% of respondents said the increased competition among them is resulting in decreased bid prices for the same piece of work (Question 18). The increasing number of suppliers has resulted in supplier very low market prices for services for KPLC. In Question 19, 100% of the respondents reported that a bid winner would make a profit in just a few instances. However, it is clear that KPLC is not simply a beneficiary to this trend. In Question 20, the respondents described the behavior of contractors as gambling, sometimes resulting in losses in their work and forfeiture of their bid guarantees. The suppliers face blacklisting due to non performance, delayed jobs and poor work done. In question 21, the respondents agreed 100% that this trend could be summarized as falling work quality. Falling work quality for KPLC could mean that the customer will end up with substandard facilities and services. This increases operational problems for KPLC, and also exposes the public to electrical hazards. In turn, this will impact on electrical accidents, compensation claims, and a negative corporate image for KPLC.

(e) Power of Buyers: In Question 15, the respondents identified the buyers for KPLC as individual customers, Customer groups, the Ministry of Energy, Foreign Governments, Donors and NGO's. For the local customers, 67% of respondents in Question 7 reported



### 4.2.3: Other External Factors

that many of the potential customers were not eager to pay for KPLC services due to lack of finances, perceived high costs of services, and lack of information on accessing or availability of services, contempt and skepticism to the company due to inefficiency and high costs. Due to KPLC's monopoly, these buyers have low bargaining power. 83% of the respondents reported that the potential customers simply stayed away if they found quotations for power quotations too high, while 17% reported that customers would request for an official review. Since KPLC wants to increase its customer base, it needs to work towards giving accurate quotations first time round, and creating confidence and dialogue with potential customers, who with a little marketing effort, can be converted to actual customers.

On the other hand, foreign based buyers and Donors may not have the financial constraints that face the local customers, but as explained in 4.1.1 , they are influential in determining how the KPLC operates. Therefore, if they were to share the same views as the local customers on KPLC's efficiency and effectiveness, they could force far reaching changes in KPLC. Additionally, these foreign bodies also supply loans and other funds to KPLC, and will therefore have an interest in gaining returns from KPLC's efficient operations. This poses the challenge for KPLC to measure up to global standards of service provision.

(f). Complementors: In Question 16, the respondents identified the Electrical and Electronic equipment industry as a major complementor to the electricity supply industry, as many of the gadgets mentioned were becoming part of modern day conveniences- the electric light, radio, television set, iron box, water heater, cooker and fridge. The list of projects undertaken by KPLC also reveals a wide range of socio-economic activities such as light commercial shops, agricultural farms, agro-based industries, tourism units, light commercial and heavy commercial installations that are impossible to run effectively without power. All these factors complement the growth of the electric power market for KPLC.

#### 4.2.2: Other External Factors

##### (a) Technological Change

From the responses and the secondary data, we can deduce that KPLC is affected by technological change in many ways. First, new technology and machinery often changes the quality definition of electricity in terms of what parameters, parameter variation, and service standards will enable customers to use the electricity service. The diverse nature of the users as represented in the projects handled means that KPLC has to keep abreast with most modern technology demands like Mobile Phone Transmitter stations, while also serving traditional customers like domestic houses. KPLC must also adopt new technology in its production methods. An example is the use of computer technology in the Material Management System the company uses. In Question 7, respondents gave the advantages of the computerized system as online project management, simplified operations, data capturing, budgeting, online controls, and better material accountability.

(b) Demographic Trends. Respondents to Question 12 give an idea of demographic shifts among KPLC customers. These refer to changes in the population and how these changes impact on the Company's market. Such changes include more women in the work force, urbanization, a better educated population, and widely traveled customers. This has an impact on the modes of use of electricity, and the demands of service quality that the company offers. Evidence of this demographic shift is in the kind of appliances that are in common use- Radios, television sets, electric cookers, and fridges that were not used by Kenya's population a few decades ago.

(c) Cultural Trends: Culture is the unique lifestyle a people and includes such elements as language, food, leisure and entertainment. It is also manifested in the artifacts and technology of people. The respondents illustrated changing lifestyles by indicating the electric artifacts that have become part of modern living. The cultural environment will also be influenced by foreigners and their culture. 83% of respondents believed that donors have an influence on the business culture of KPLC, by pressing for a procurement law to fight the old culture of graft.

(e) Economic Climate: The economic environment in Kenya has been of deprived customers. 67% of the respondents indicated that customers are not rushing to connect power to their premises even when lines are constructed in their locality due to lack of finances, and the perceived high costs. The respondents also listed several foreign financial companies such as IMF, World Bank, and Donors who mostly are characteristic participants in the economies of poor third world countries. Therefore, sales for the company are likely to be low and deteriorating, there is likely to be a problem of electrical theft as those who desire power but cannot afford exploit loopholes. Theft of equipment for cannibalization and sale is also likely to be a problem in such an environment.

(f) Legal/ Political Conditions: 83% of respondents were unable to name the law that governs the Company's business- the Electric Power act. The respondents work for a Section that runs contractual works and would be expected to know the law better than other sections. KPLC enjoys a monopoly in power distribution, and this would seem to have lulled it into complacency. Customers who have paid for projects essentially enter into legal contracts with KPLC. From the data, the respondents believe that on average, in 65% of the cases KPLC does not deliver in time and therefore breaches the law. Apparently the law does not punish or goad KPLC to make improvements. The government, through the Ministry of Energy, is involved in the provision of KPLC services to new customers, and therefore politics and politicians of the day are likely to have an influence in the activities of KPLC.

(g) Specific International Events: Any international event that affects the economy of the country will affect KPLCs customer base and the electricity market. Respondents indicated such events to include terrorism, increase in fuel prices, and wars.

### **4.3 Features And Techniques Of KPLCs Project Management**

Respondents gave their length of service at between 10 and 4 years, and since the long serving respondents were the founder of the section, we can work backwards that the Project Development Section was founded around 1995. From the list of projects handled, we find that the lines constructed are at power voltages of 33000, 11000, 433



100% of Respondents were able to identify at least three people in sections outside their own, who they have to work with in order for their work to succeed. This suggests a matrix organization for mining projects (Yarker & Gop, 2007), which involves:

and 240. 100% of Respondents identified a major benefit of the Projects Section as saving the company money, in Question 35. The Section currently undertakes a wide range of construction works, including aspects existing power line maintenance like old pole replacement that were until recently considered specialized work for KPLC personnel only. Respondents identified, in Question 14, the source of these projects as Individual Customers, Customer Groups, Rural Electrification Projects funded by the Ministry of Energy, KPLC funded System Reinforcement Schemes, and Maintenance Works. Out of the 204 jobs in the study, 9 were returned to be done by internal staff due to the following sample reasons: Urgency, Inadequate Budgets, Poor Designs necessitating Revision, and Internal Budget Preparation Rule problems. By examining those jobs, we can conclude that the following types of jobs in KPLC are not suited for project management: Small jobs without an appreciable budget, or without a specific budget set aside, Urgent jobs which cannot wait for Contractor Mobilization time, and Special and Sensitive Customers who need personalized attention, Specialized and Safety tasks such as work near Live Power Lines and Cable Jointing. Respondents identified that KPLC uses Labor and Transport Contracts as opposed to Turnkey contracting. This results in Lump sum Contracts under the classification of Whittaker (2005). 100% of respondents identified the mode of entry for contractors as a prequalification process, and since no other method is suggested, this seems to be a strict process. They also identified that all Contractors are called by letter and phone to bid for new jobs. In Question 25, all respondents identified Public Opening of Tenders as the method used to ensure fairness in the tendering process. In Question 26, respondents identified the role of KPLC Tender Committees as approving tenders, analyzing returns, ensure compliance to statutory regulations, and ratify tender awards.

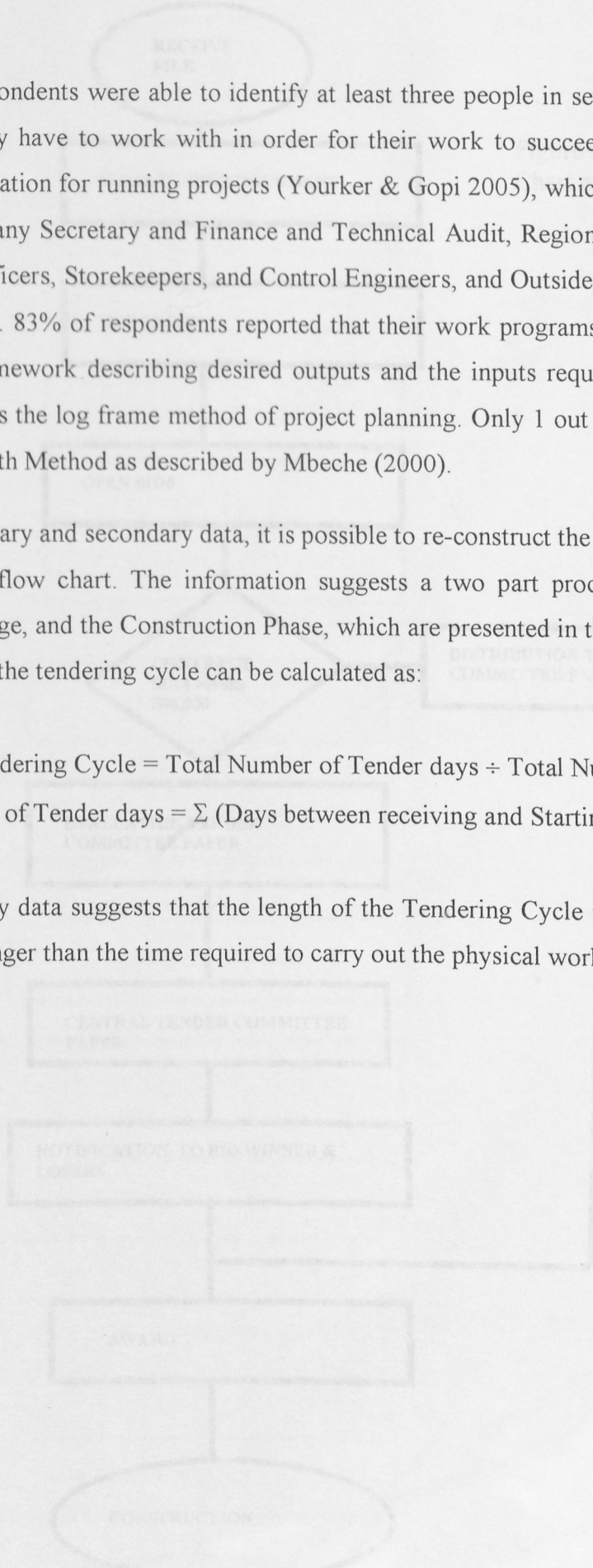
100% of Respondents were able to identify at least three people in sections outside their own, who they have to work with in order for their work to succeed. This suggests a matrix organization for running projects (Yourker & Gopi 2005), which involves: Central Office- Company Secretary and Finance and Technical Audit, Regional Staff-Surveyors, Way leave Officers, Storekeepers, and Control Engineers, and Outsiders- Contractors, and the public. 83% of respondents reported that their work programs were presented as “a logical framework describing desired outputs and the inputs required to achieve it”, which suggests the log frame method of project planning. Only 1 out of 6 reported using the Critical Path Method as described by Mbeche (2000).

From the primary and secondary data, it is possible to re-construct the Company’s Project Management flow chart. The information suggests a two part process with a distinct Tendering Stage, and the Construction Phase, which are presented in the following pages. The length of the tendering cycle can be calculated as:

$$\text{Length of Tendering Cycle} = \frac{\text{Total Number of Tender days}}{\text{Total Number of jobs}}$$

$$\text{Total Number of Tender days} = \sum (\text{Days between receiving and Starting works})$$

The Secondary data suggests that the length of the Tendering Cycle is 69 days, which is sometimes longer than the time required to carry out the physical works.



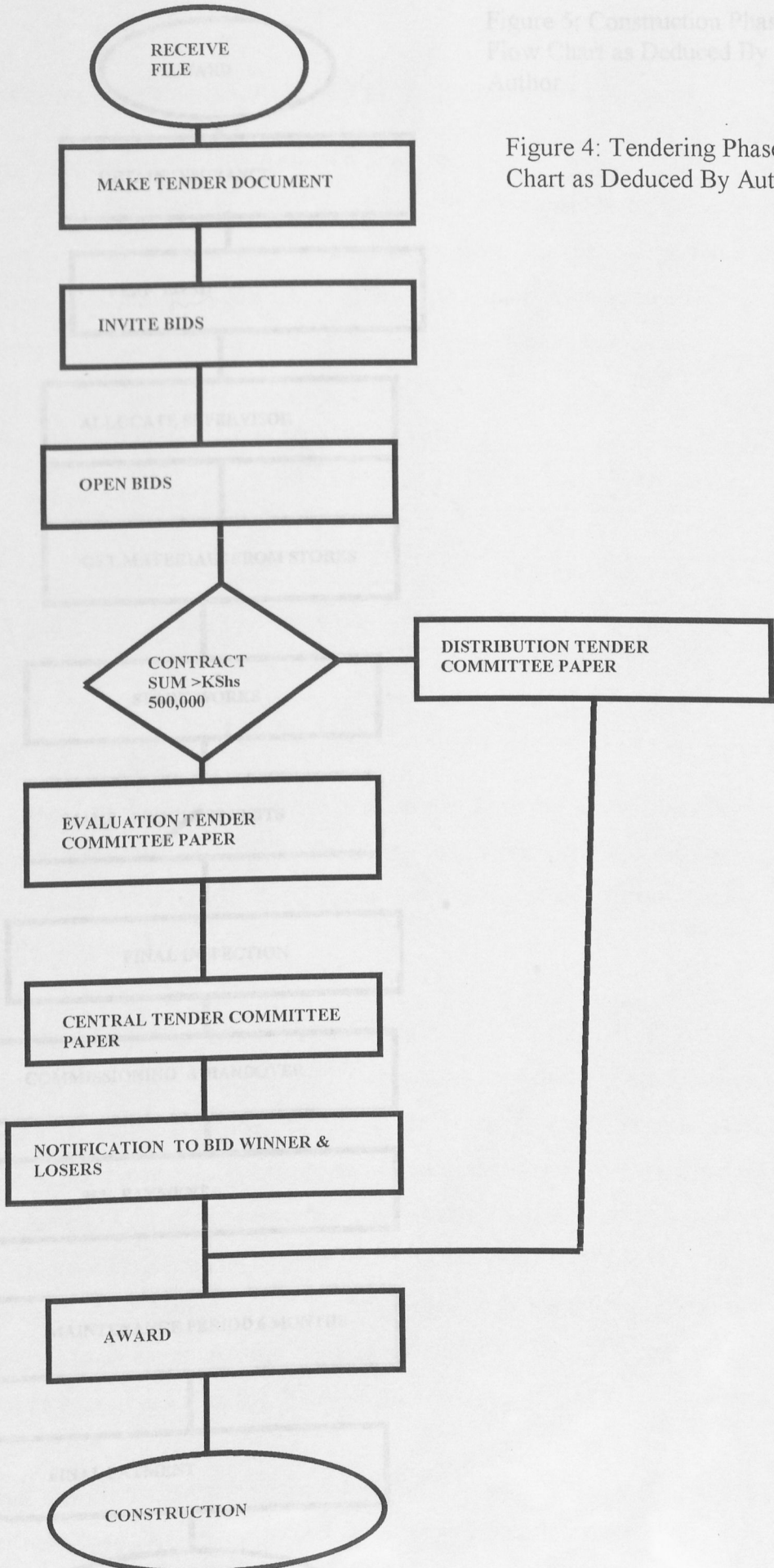
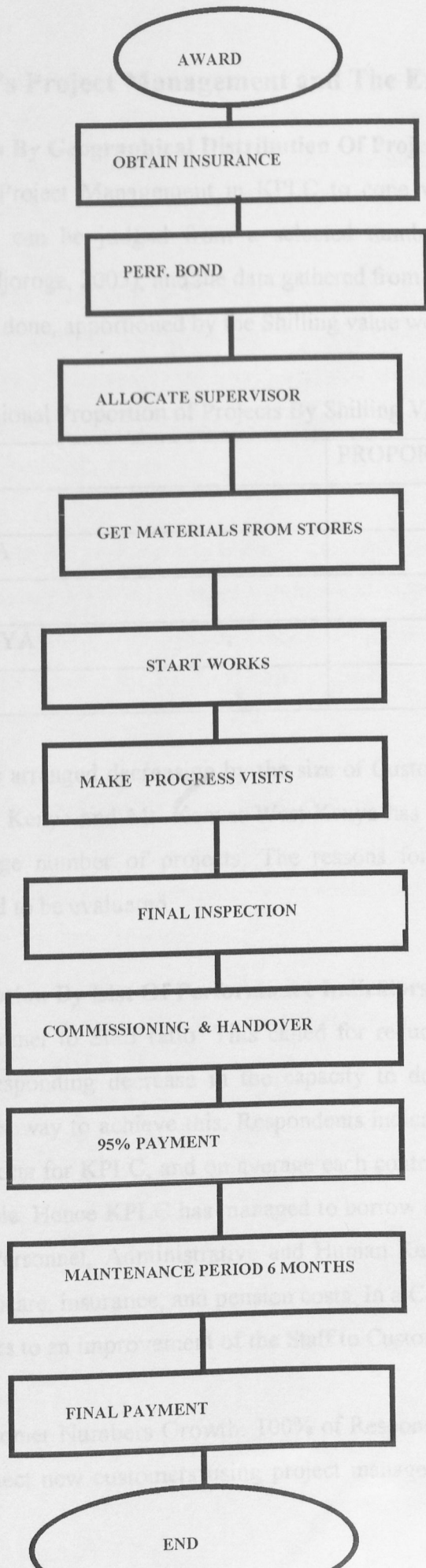


Figure 3: Construction Phase Flow Chart as Deduced By Author

Figure 4: Tendering Phase Flow Chart as Deduced By Author



Figure 5: Construction Phase Flow Chart as Deduced By Author



1.4 KPLC's Project Management and The External Environment

4.4.1 Results By Customer Satisfaction Of Projects

The use of Project Management at KPLC to cope with the demands of the external environment can be measured using the data gathered from the list of performance indicators (Njoroge, 2010).

The projects done, as measured by the Shilling value were distributed as follows.

Table 3: Regional Distribution of Projects by Shilling Value

REGION	PROPORTION OF VALUE IN KSHS
COAST	3%
MT. KENYA	22%
NAIROBI	35%
WEST KENYA	42%
TOTAL	100%

The Regions with the largest size of customer base are in the order Nairobi, Coast, West Kenya and Mt. Kenya. Nairobi has the largest geographical coverage, thus the large number of projects. The reason for Coast's insignificant number of projects could be the value of projects.

4.4.2 External Environment

(a) Customer Satisfaction

Customer satisfaction is a measure of the extent to which a customer's expectations are met or exceeded. It is a key factor in determining customer loyalty and repeat business. Customer satisfaction is measured using a variety of methods, including surveys, focus groups, and direct observation. Respondents indicated that there were 44 Contractors working for KPLC and the average each contractor has a staff complement of 15 people. Hence KPLC has managed to borrow at least 660 staff (44x15), and save on Project Management costs such as Manpower, training and equipment costs. In a Company with 5,000 employees, this works to an improvement of the Staff to Customer ratio of 13.2% (i.e. 660/5000).

(b) Customer Satisfaction

100% of Respondents indicated that it was faster to connect now compared to the project management and contractor. The reasons

## 4.4 KPLC's Project Management and The External Environment

### 4.4.1 Results By Geographical Distribution Of Projects

The use of Project Management in KPLC to cope with the demands of the external environment can be judged from a selected number from the list of performance indicators (Njoroge, 2003), and the data gathered from the primary data questionnaire.

The projects done, apportioned by the Shilling value were distributed as follows:

Table 1: Regional Proportion of Projects By Shilling Value

REGION	PROPORTION OF VALUE IN KSHS
COAST	3%
MT. KENYA	22%
NAIROBI	33%
WEST KENYA	42%
TOTAL	100%

The Regions arranged decreasing by the size of Customer base are in the order Nairobi, Coast, West Kenya and Mt. Kenya. West Kenya has the largest geographical coverage, thus the large number of projects. The reasons for Coast's insignificant number of projects need to be evaluated.

### 4.4.2 Evaluation By List Of Performance Indicators

(a) Customer to Staff ratio: This called for reduction on Company staff, without a corresponding decrease in the capacity to do work. Project Management is a clever way to achieve this. Respondents indicated that there were 44 Contractors working for KPLC, and on average each contractor has a staff complement of 15 people. Hence KPLC has managed to borrow at least 660 staff ( $44 \times 15$ ), and save on Personnel, Administrative and Human Resource Management costs such as Medicare, insurance, and pension costs. In a Company with 5,000 employees, this works to an improvement of the Staff to Customer ratio of 13.2% (i.e.  $660/5000$ )

(b) Customer Numbers Growth: 100% of Respondents indicated that it was faster to connect new customers using project management and contractors. The reasons

given included the following: Projects were goal oriented, the contractor was profit oriented and tried to finish work in time and to correct standards the first time round in order to minimize costs, thus making their speed better than internal processes that were more bureaucratic.

(c) Average Waiting Time for new customers: 100% of the respondents reported that all things being equal, waiting time for customers is less for customers when Project Management was used compared to internal processes. However, in the period of the study, both the Internal and Project processes were severely affected by material shortages.

(d) Average Repair Response times to Service Calls: From the list of Projects in the Secondary Data list, a large number was from KPLC Repair and Maintenance (R&M), and Power System Reinforcement works. This reduced the number of system failures, and freed the Repair crews to attend to service Calls faster.

#### 4.4.3 Projects Evaluated By Completion Period

The projects which were actually undertaken (213, less 9 returned) were grouped by status, and the following three groups were identified: Finished Early, Finished Late, and Pending. The results were as follows:

Table 2: Proportion of Projects by Completion Period - Secondary Data

ACTION TAKEN	NO. OF JOBS	% OF TOTAL
FINISH EARLY	10	5%
FINISH LATE	21	10%
PENDING	173	85%
	204	100%

In comparison, the respondents to the primary data questionnaire had evaluated jobs completion as follows:



Table 3: Proportion of Projects by Completion Period – Respondents Data

RESPONSES	A	B	C	D	E	F	AVERAGE
EARLY	10	20	10	0	10	10	10
EXACT	10	20	20	0	30	70	25
LATE	80	60	70	100	60	20	65

There is a significant difference in the responses. It would be necessary to study whether these differences are related to the respondent's Education, Training, Motivation or Personality. The general response suggests that less than 10% of jobs are completed early, and about 85% of the jobs are finished late. The tables suggest that the respondents count jobs finished with "minor delays" as finished "on time", as opposed to Projects Management's fixed times.

#### 4.4.4 Projects Evaluated For Quality

Respondents, in Question 31, gave an individual assessment on whether projects are completed with all items as designed for, or some suitable modifications to design are made, or some items are left out altogether at the end of the project. The responses were as follows:

Table 4: Quality of Completed Projects- Respondents data

RESPONSE	A	B	C	D	E	F	AVERAGE
ALL ITEMS	0	40	5	50	40	5	23
MODIFIED	90	50	93	45	45	80	67
ITEMS MISSING	10	10	2	5	15	15	10

There is a significant difference in the individual responses. It would be necessary to study whether these differences are related to the respondent's Education, Training, Motivation or Personality. In general, the data suggests that only 23% of the work is completed as designed. In 67% of the cases the line is modified. This has implications on operating the power lines so constructed since the operators may not be able to deal with

this modification expeditiously with their standard tools and training. In the 10% of cases where some items are missing, it is possible that the lines are either difficult to operate or unsafe. An audit of the lines to identify the safety and operational implications of this 10% of lines needs to be carried out, but was outside the scope of this study.

### QUALITY OF COMPLETED PROJECTS

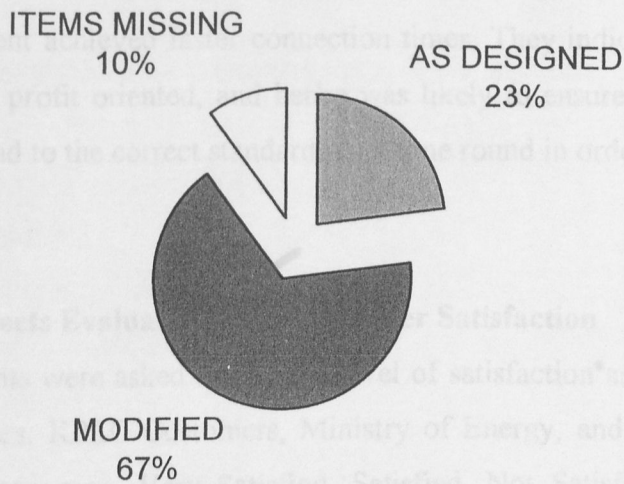


Figure 6: Quality of Completed Projects – Average Responses

#### 4.4.5 Projects Evaluated For Costs

In Question 35, while answering the question: “Does contracting out jobs in the Projects Section save KPLC money?” respondents needed to choose the focus between the short-term project costs, versus the long-term Balance Sheet idea.

50% Of respondents took the short-term view, saying that the contractor costs were cheaper than KPLC design costs. The rest took the long term view, that delays in construction actually cost KPLC in terms of lost business. One respondent (17%) gave the detailed answer required, that while it lowered construction costs, KPLC is not supposed to make profits from saved construction costs. It is supposed to charge customers only at cost. The Ministry of Energy actually was cited as an example of a customer that demands a refund on all unspent monies.

#### 4.4.6 Projects Evaluated For Speed of Work

In response to the question whether Project Management makes new connections to customers faster, 100% of respondents agreed, with riders. They compared the Project Management with internal processes, saying that given a good flow of inputs, project management achieved faster connection times. They indicated that the contractors were result and profit oriented, and hence was likely to ensure that the work was completed earliest, and to the correct standards first time round in order to make profit.

#### 4.4.7 Projects Evaluated For Stakeholder Satisfaction

Respondents were asked to rate the level of satisfaction as expressed by three groups of stakeholders: KPLC Customers, Ministry of Energy, and the general public, with four possible responses- Very Satisfied, Satisfied, Not Satisfied and Very Dissatisfied. In order to get an indication of the general picture, a tally table was developed to tabulate the responses as follows:

Table 5: Tally Table for stakeholder satisfaction

RESPONSES	CUSTOMER	MINISTRY OF ENERGY	GENERAL PUBLIC
Very Satisfied			
Satisfied	//	////	///
Not Satisfied	////	//	//
Very Dissatisfied			/



From the table, we can deduce that no group of stakeholders seems to be delighted with the Project Management services of KPLC. The majority of customers were rated as “not satisfied”. The Ministry of Energy was generally rated as “satisfied”. The reaction of the general public is less clear. While there is a half of the general public is rated as “satisfied”, an equal number is distributed between “not satisfied” and “very unsatisfied”. If the customer is the central purpose of any business, then KPLC should re-examine its project management strategies to bring it in line with customer expectations.

#### 4.4.8 Suggestions For Improving Projects

Respondents were asked to specify three items that should be improved in order to improve the Project Management at KPLC. All the suggested improvements fell into six categories as follows:

Table 6: Suggestions for Improving Projects Management

ITEM	TOTAL
MATERIAL MANAGEMENT	6
CONTRACTOR PREQUALIFICATION	5
PERSONNEL & TRAINING NEEDS	3
IMPROVEMENT OF I T FACILITIES	2
REDUCTION OF TENDER PERIOD	1
DECENTRALIZATION OF SERVICES	1

This can be represented in bar cart form as follows:

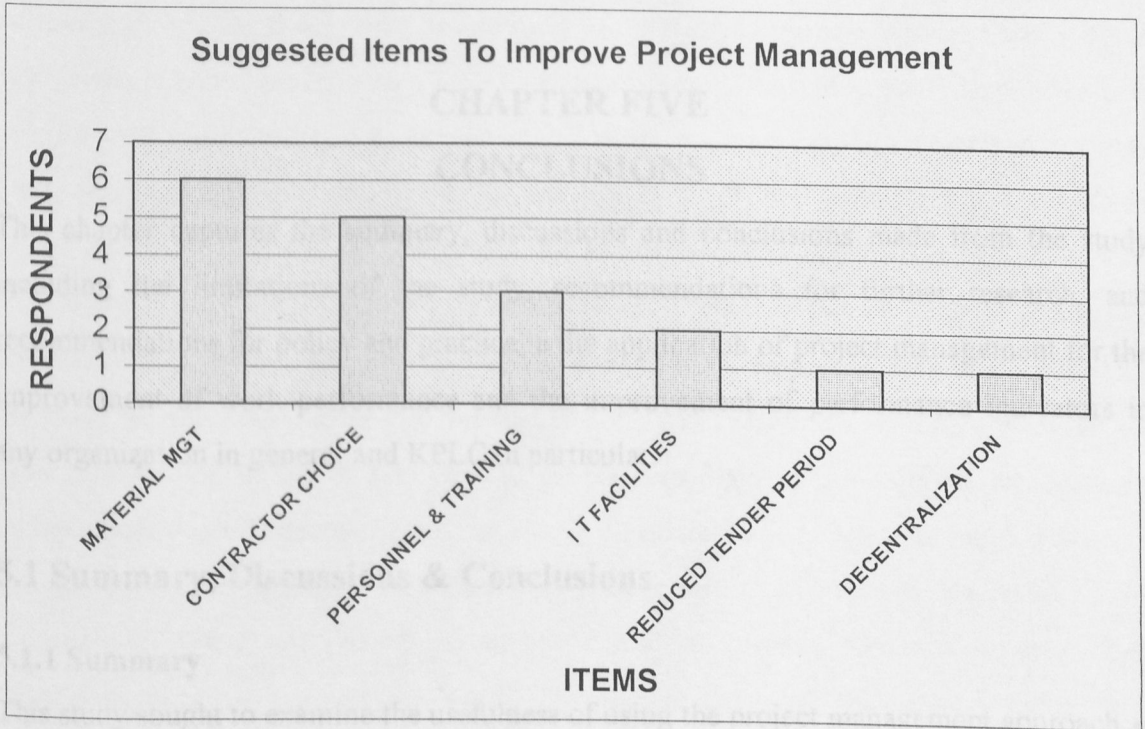


Figure 7: Bar Chart for Suggested Items To Improve Project Management

environment, using the example of KPLC. The data used included secondary business data from 204 KPLC projects, which had been collected in the course of construction of distribution lines for a variety of uses including power supplies to individual customers and customer groups, Rural Electrification, Power System Reinforcement and Repair and Maintenance. Primary Data was also obtained by using a questionnaire that was filled in by projects supervisory staff. Data was analyzed both qualitatively in relation to the list of performance indicators that the Company has sought to improve, and quantitatively in the form of tables, tally tables, averages, pie charts and bar charts, and the results were used to show how project management has been used to meet the demands of the external environment at KPLC.

### 3.1.2 Discussions

It is clear from the study that the external environment for KPLC can be divided into the industry environment and other general factors. The industry environment for KPLC does not have the threat of new entrants, because the company enjoys a legal monopoly in power distribution in Kenya. KPLC does not enjoy unfettered access to the market because the Ministry of Energy, the Electricity Regulatory Board, and Kenya Bureau of Standards are statutory bodies that make rules affecting the KPLC customer, and in a

## **CHAPTER FIVE**

### **CONCLUSIONS**

This chapter captures the summary, discussions and conclusions made from the study including the limitations of the study, recommendations for further research, and recommendations for policy and practice in the application of project management for the improvement of work performance and the improvement of performance indicators in any organization in general and KPLC in particular.

#### **5.1 Summary, Discussions & Conclusions**

##### **5.1.1 Summary**

This study sought to examine the usefulness of using the project management approach as a strategy to improve the performance indicators in a changing external environment, using the example of KPLC. The data used included secondary business data from 204 KPLC projects, which had been collected in the course of construction of distribution lines for a variety of uses including power supplies to individual customers and customer groups, Rural Electrification, Power System Reinforcement and Repair and Maintenance. Primary Data was also obtained by using a questionnaire that was filled in by projects supervisory staff. Data was analyzed both qualitatively in relation to the list of performance indicators that the Company has sought to improve, and quantitatively in the form of tables, tally tables, averages, pie charts and bar charts, and the results were used to show how project management has been used to meet the demands of the external environment at KPLC.

##### **5.1.2 Discussions**

It is clear from the study that the external environment for KPLC can be divided into the industry environment and other general factors. The Industry environment for KPLC does not have the threat of new entrants, because the company enjoys a legal monopoly in power distribution in Kenya. KPLC does not enjoy unfettered access to the market because the Ministry of Energy, the Electricity Regulatory Board, and Kenya Bureau of Standards are statutory bodies that make rules affecting the KPLC customers, and in a



way present indirect rivalry to KPLC. There are several substitutes to electricity in the Kenyan market, but those are often viewed as inferior to electric power. Electricity is indispensable to industries. Only 13% of Kenyan households use electricity and the rest make do with the alternatives. The power of suppliers, particularly service provision in the project management activity in the industry is weak, but sometimes this results in delays and low quality work being done for the Company. Local buyers, too, have low bargaining power, and are unable to effect much change in the company's pricing or contract enforcement and standards. On the other hand, an important proportion of works are done for the government and foreign bodies, and these latter groups are extremely influential in the affairs of KPLC. The general elements of the external environment include rapid technological change, including computerization. There is rapid change in the demographic composition of the country's population as average age is becoming progressively lower, and this affects customer tastes and trends. Kenyans are interacting more and more with the wider world, and this is changing the country's dominant cultures. Donors are believed to be setting the pace for the business culture, especially in the fight against graft and corruption. The legal culture is generally weak and has not forced KPLC to make improvements on service provision. Due to government involvement as in the provision of power services by funding Rural Electrification, it gives politics and politicians of the day a big say in the Company.

KPLC has used project management for distribution line activities since 1995. The lines are constructed for all the voltage levels in the distribution range. Execution of works is done using pre qualified contractors. Allocation of the projects is done through a tendering system, which uses public tender openings to assure fairness in the competition among contractors. The tendering system has to conform to the Public Procurement Rules of 2002, and these results into a tendering period which is sometimes much longer than the actual construction period. Three out of four of the Company Regions make reasonable use of the project approach. The projects have helped the company to improve on several performance indicators, such as the Customer to Staff ratio, the Customer Numbers Growth, the Average Waiting Time for New Customers, and the Average Repair Response Time to Service Calls. The project management approach suffers from delayed completion, material shortages lower the final product quality due to the necessary modifications or in some cases omission of line items. Although use of project

management may appear to save KPLC money for internal jobs, this is not really a core need for the Company, since it is supposed to charge its customers only at cost for the projects. Instead, it makes its profits from sales of power units to connected customers, so projects delays are the main concern. The study found that no group of stakeholders is delighted with the project management services. The customers are dissatisfied, the public is not satisfied, but the Ministry is rated by respondents as satisfied. Thus project management has not been a success. The three main items suggested for improving project performance include provision of adequate materials, improving the prequalification of contractors, and training and equipping of the project supervisors.

### **5.1.2 Conclusions**

This study has shown that using project management has to a certain extent enabled KPLC to improve some of its performance indicators. However, project management has not been very successfully used at KPLC since the quality, time, cost and stakeholder indicators are not good enough. This has been due to implementation problems. One may criticize the project management theoretical approach of classifying projects as either successful or failed, with no shades in between. In this study, project management has been shown to be applicable a strategy for doing well defined and quantified works that have an appreciable budget that is clearly set apart. It is not suitable for jobs that are not well defined, have a tiny budget, and are too urgent to allow project mobilization time. As with any strategy, project management implementation of requires a good structure and resource availability. KPLC needs to address issues of resource availability, contractor prequalification, and staff training for the full benefits of the strategy to be realized.

### **5.2 Limitations Of The Study**

This study was limited in time and resources. For those reasons, some stakeholders, such as materials suppliers and contractors were not covered in the study. They are important in terms of the project concept of stakeholder satisfaction. The KPLC Management response to the identified problems would also have been covered, because as the body running the projects, they are also an important stakeholder. The period chosen for the study corresponded to the worst phase of the material shortages yet experienced at KPLC, so possibly the performance would have looked better if a longer period was used. In

management may appear to save KPLC money for internal jobs, this is not really a core need for the Company, since it is supposed to charge its customers only at cost for the projects. Instead, it makes its profits from sales of power units to connected customers, so projects delays are the main concern. The study found that no group of stakeholders is delighted with the project management services. The customers are dissatisfied, the public is not satisfied, but the Ministry is rated by respondents as satisfied. Thus project management has not been a success. The three main items suggested for improving project performance include provision of adequate materials, improving the prequalification of contractors, and training and equipping of the project supervisors.

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spite of it all, the study does illustrate the challenges of the external environment and how to cope with them.

### **5.3 Recommendations For Further Study**

Arising from the results of this study, it would be very interesting to carry out studies in the following key areas that would help KPLC to tailor their services to internal and external customers and stakeholders:

- (a) Differences in Stakeholder Satisfaction: What causes differences in stakeholder satisfaction, between the Customers, Ministry of Energy, and the public and foreign Donors to the Government? The Ministry of Energy looks like an inappropriate source of market inspiration since the Ministry expectations do not seem to be in harmony with customer expectations, yet the Ministry sets the policy guidelines. This would help KPLC to tailor appropriate responses to customer expectations but still satisfy Ministry requirements.
- (b) The Government Procurement Policy: Exactly what are its provisions, and how can its provisions be used effectively to serve KPLC while it achieves the intended functions of eliminating mis-procurement and corruption?
- (c) The effect of Government Procurement Regulations on the Small and Medium Enterprise Suppliers in Kenya: Although all the listed pending Projects were attributed to “Material Shortages”, it is suspected that some contractors will have gone under due to cash flow problems by the time the material shortages are rectified. This is lent credence by the presence of a large number of uncompleted projects from the year 2003 and before, which fell outside the scope of this study. Another study needs to be done to pinpoint other factors that could play a part in the failure to complete projects on time.
- (d) Project Supervisor Performance as a factor of Education, Training, Motivation and Personality: The inadequate flow of materials has masked some differences in Project Supervisor characteristics and productivity. It is evident that Performance Contracting as introduced by KPLC will be limited in results

because the required inputs are missing. How can the effectiveness of each individual Supervisor be recognized and rewarded in an environment where the general organizational performance is not good enough? How can the individual performance be separated from the shortcomings in the organizational systems?

- (e) Total Quality Management and the KPLC Suppliers: The six areas of improvement expressed in 4.4.7 cut across the entire supply chain of KPLC, and its stakeholders and environment. This suggests that to improve KPLC Project Management performance, it must manage much more than internal factors. What role could Total Quality Management play in rectifying the situation?

### **5.4 Recommendations For Policy and Practice**

From the above summary, discussions and conclusions, the recommendations below are made with a view to further using the project management approach as a strategy for improving the performance indicators in a changing external environment.

Since the issue of material acquisition seems to be the greatest bottleneck in the project management process, the possibility of longer term contracts with suppliers, or ordering in anticipation of longer lead times ought to be considered, using modern approaches like Just in Time (JIT), or Total Quality Management (TQM) or Supplier Support (SS) approaches. In order to successfully do that in the current environment, it will be necessary for KPLC to improve its corporate image and operational performance. Perhaps that is the thinking that informs KPLC's drive to become ISO certified by June 2006. Hopefully, that is going to address most of the items identified in this study as needing improvement, and especially those identified as priority items by the project supervisors in section 4.4.8., i.e. material management, choice of contractors, personnel numbers and training, Information Technology and Communication facilities. The Company management should also invest in revamping its corporate image and culture, to convince stakeholders that it is above inefficiency and corruption. Once this is in place, the organization should then lobby the government or other agencies that would give it concessions on the bureaucratic procurement rules, which would make material procurement easier and reduce the long tendering period. For any other organization seeking to use the project management approach to make performance improvements,

this is a good method of doing so, but careful considerations must be made of the organization set-up factors and how those factors will impact on project delivery times, costs, quality and stakeholder satisfaction.

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## Appendix 2: Primary Data Questionnaire

### NOTES TO RESPONDENTS:

1. Do not write your name anywhere on this questionnaire. All answers will be treated in strict confidence and will be used for this study only

2. Please answer by ticking (  ) the correct answer or by writing in the space provided.

### PART 1: GENERAL

Q1. How long have you worked as a supervisor in the Project Development section?

Ans: -----Years

Q2. How many projects are you currently holding?

Ans (a) 0-15 Projects

(b) Above 15 Projects

Q3. The number of projects you are handling:

(a) Allows you enough time to supervise each one well

(b) Makes it difficult to supervise each one well

### **PART 2: KPLC'S OPERATIONS AND EXTERNAL INFLUENCES**

Q4. Do you know any two Kenya Government bodies that make rules on how KPLC operates?

(a).....

(b).....

(c) Know none.

Q5. Was the current Procurement Procedure in Kenya made by the Kenya Government

(a) On its own, without pressure

(b) Under pressure from Donors

(c) Don't Know

Q6. Which Act of Parliament contains the Electricity Supply Laws and Regulations?

.....

Q7. When new electricity lines are constructed, are new customers rushing to pay for service cables? (a) Yes (b) No

What in your experience is the reason why new customers behave this way?  
.....

Q8. Do Manual and Computer Generated Stores Transaction Forms serve the same purpose in booking out materials from the Stores? (a) Yes (b) No.

Q9. Why does KPLC insist on using Computer Generated Stores Transaction Forms?  
.....

Q10. Do you know any 2 institutions outside Kenya that affect the way KPLC does business

- (a) .....
- (b) .....
- (c) Don't know any

Q11: KPLC wants to become ISO Certified.....

- (a) By June 2006
- (b) By December 2005

### **PART 3: KPLC SUPPLIERS AND CUSTOMERS**

Q12. What sources of Energy do people with no electricity use?  
.....

Q13. Why don't other Companies sell electrical energy to customers in Kenya?  
.....

Q14. What do customers do if they find KPLC's quotation for power connections too high?  
.....

Q15: Who pays for the kind of projects you have ever handled in the Section?

- (a).....
- (b) .....
- (c).....
- (d).....
- (e).....

Q16. In your experience, what are first three power driven gadgets that a home just connected with power buys?  
.....

Q17. How many Prequalified contractors were there in 2002?..... and in 2005?.....

Q18. When were contractors bidding higher for 1KM of line, 2002 or 2005?.....

Q19. In your view, does the lowest bidding contractor make a profit all the time, or just a few times?.....

Q20. What happens if a contractor finds he quoted too low for the job to be done? .....

Q21. In your view, has contractors' quality of work increased or decreased since 2002? .....

#### **PART 4: KEY FEATURES OF KPLC PROJECT MANAGEMENT**

Q22. Do KPLC contractors buy materials for jobs they tender for? .....

Q23. How does a company become a contractor for KPLC Projects? .....

Q24. How do KPLC contractors know there are jobs to be done? .....

Q25. How does the public make sure that nobody is favoured in awarding KPLC Contracts? .....

Q26. What work do Tender Committees do? .....

Q27. Please list any three people outside the Project Development Section you need to work with to make your projects a success.

(a) I work alone

**Or**

(b) I have to work with (i)..... (ii)..... (iii).....

Q28: Which of the following best describes the way your work programs are made:

(a) a list of weekly and monthly activities.

(b) A logical framework describing desired outputs and the inputs required to achieve it.



Q29. Most of the KPLC projects you have seen

- (a) are completed ahead of time
- (b) are completed on time
- (c) are completed late

Q30. In the last two years, estimate the percentage of KPLC projects you have supervised that were completed

(a) Earlier than expected	.....%
(b) Exactly on time	.....%
(c) Late	.....%
<b>TOTAL</b>	<b>100 %</b>

Q31. In the last two years and for the projects you have supervised, estimate in percentage the projects that were completed

(a) with all required materials	.....%
(b) with modified materials, but OK	.....%
(c) Without some materials, to be rectified later	.....%
<b>TOTAL</b>	<b>100 %</b>

**PART 5: KPLC COPING WITH CUSTOMER AND EXTERNAL DEMANDS**

Q32. From your experience, you would say that KPLC customers are .....

- (a) Very satisfied with KPLC projects
- (b) Satisfied with KPLC projects
- (c) Not satisfied with KPLC Projects
- (d) Very unsatisfied about KPLC projects

Q33. From your experience, you would say that the Ministry of Energy is.....

- (a)Very satisfied with KPLC projects
- (b)Satisfied with KPLC projects
- (c)Not satisfied with KPLC Projects
- (d) Very unsatisfied about KPLC projects

Q34. From your experience, you would say that the general public are .....

- (a)Very satisfied with KPLC projects
- (b)Satisfied with KPLC projects
- (c)Not satisfied with KPLC Projects
- (e) Very unsatisfied about KPLC projects

Q35. In your view, does Contracting out jobs in Projects save KPLC money

- (a) Yes
- (b) No

Give reasons for your answer

Q36. In your view, does Contracting out jobs make connections to new customers faster

(a) Yes

(b) No

Give reasons for your answer

.....

Q37. Please list three things that can improve the project work in KPLC

(a).....

(b).....

(c).....

**Thank you very much for your time. Your answers will be treated in strict confidence and will only be used for this academic study.**

Dear Mr.....

**RE: QUESTIONNAIRE IN THE STUDY OF PROJECT MANAGEMENT**

As you may know, I am undertaking a study of Masters of Business Administration in the University of Nairobi. I have already successfully done the coursework. In order to complete the course I need to research and write on a project paper. I have chosen the topic "Using Project Management to cope with the changing global environment", and have chosen the Projects Development Section in KPLC for case study.

Please assist me with your knowledge resulting from your long experience in Project Management. I request your cooperation in filling the attached questionnaire. Your answers will be fully confidential and will not be disclosed to third parties. The answers will be used for academic study only.

Thank you for your cooperation

Yours Sincerely,

SIMON M. MWANGI

### Appendix 3: Introductory Letter To Respondents

SIMON MWANGI  
P.O. BOX 5544-00200  
NAIROBI  
TEL 0722785695  
14<sup>th</sup> November, 2005

MR.....  
PROJECTS DEVELOPMENT OFFICE  
KPLC ELECTRICITY HOUSE  
NAIROBI.

Dear Mr.....

RE: QUESTIONNAIRE IN THE STUDY OF PROJECT MANAGEMENT

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Thank you for your cooperation  
Yours Sincerely,

SIMON M. MWANGI



## Appendix 4 : List of Performance Indicators

THE KENYA POWER AND LIGHTING COMPANY LIMITED DIVISIONAL KEY TARGETS FOR JULY 2003.

	PLAN/ACTIVITY/ PERFORMANCE/ INDICATOR	UNIT	TARGET AS AT 30/06/2004	TARGET FOR MONTH	ACTUAL THIS MONTH	VAR. %	CUMULATI VE TARGET YTD	ACTU AL YTD	VAR%	REASONS FOR VARIANCE
1	Distribution Efficiency	%	83.0%	83.0%	75.05%	9.6%	83.0%	75.05%	-9.58%	Below target
2	Unit Yield	Shs./Unit	6.00	6.00	5.88	-0.02	6.00%	5.88	-2.00%	Within target
3	Revenue collection % of pre. Mth non Gok bills	Per cent	100.0%	100.0%	101.00%	1.0%	100.0%	101.0%	1.00%	Above target
4	Debt Age. Ordinary customers	Month	2.10	2.10	3.00	-42.9%	2.10	3.00	-42.86%	Below target
	Industrial customers	Month	1.10	1.10	1.20	-9.1%	1.10	1.20	-9.09%	Below target
	Government	Month	4.00	4.00	5.17	-42.8%	4.00	5.71	-42.76%	Below target due
	Parastals – Non Essential	Month	1.10	1.10	1.02	6.9%	1.10	1.02	6.88%	Above target
	Local authorities	Month	3.00	3.00	4.26	-41.9%	3.00	4.26	-41.95%	Slightly below target
	Embassies	Month	2.00	2.00	1.20	39.9%	2.00	1.20	39.93%	Above target
	VIPs	Month	2.00	2.00	1.13	43.5%	2.00	1.13	43.52%	Above target
	All	Month	2.00	2.00	2.46	-23.0%	2.00	2.46	-23.00%	Below target
5	Average meter reading time	Day	1.60	1.60	2.11	-31.9%	1.60	2.11	-31.88%	Below target
6	Meter reading coverage	Per cent	99.00%	99.00%	97.39%	-1.6%	99.0%	97.4%	-63%	Below target
7	Meter reading accuracy	Per cent	2.00%	2.00%	4.00%	-100.0%	2.0%	4.0%	-100.00%	Below target
8	Meters with zero consumption	Number			44,314	-	-	-	-	Monitoring purposes only
9	Billing average time	Day	1.50	1.20	1.66	-38.3%	1.20	1.66	-38.33%	Below target
10	Average time to solve billing Anomalies	Day	2.07	1.50	2.24	-49.3%	1.50	2.24	-49.33%	Below target
**11	Average waiting time for new connection upon payment	Day	60.0	60.0	75.63	-26.1%	60.00	75.63	-26.05%	Delays have continued due to shortage of some materials within target
13	Percent orders reconnect services orders actioned	Per cent	100.0%	100.0%	94.00%	-6.00%	100.0%	94.0%	-6.00%	Within target
14	Percentage orders reconnected outside one day	Per cent	10%	10%	5.93%	40.7%	10.0%	5.93%	40.70%	Above target
15	Resolution of zero consumption meters in correct situation (Total No. 42,364)	Per cent	100%	100%	8.40%	-91.6%	100.0%	8.4%	-91.60%	Below target
16	Re- billed amount as per cent of monthly billing maximum	Per cent	1.0%	1.0%	0.01%	99.0%	1.0%	0.0%	99.0%	Above target
17	Routine inspection (supplies visited per month)	Per cent	100.00%	8.33%	3.00%	-64.0%	8.3%	3.0%	-63.99%	Introduction of new strategy
18	Debt collection of finalized accounts	Million Ksh.	693.00	57.75	52.14	-9.71%	57.75	52.14	-9.71%	Below target
**19	Customer growth	No	150.00	12.500	3.853	-69.18%	-	-	-69.18%	Below target
	<b>2. OPERATIONS AN MAINTENANCE</b>									

	Supply quality improvement									
**1	Average Repair response Time to services calls	Hours	4.00	4.00	5.30	-32.5%	4.00	5.30	-32.50%	Performance is reflective of widy seasonal
2	Average restoration time for programmed interruption	No/mnt h	8.00	8.00	7.00	12.5%	8.00	7.00	12.50	Average for all regions (excl. C.R.& N. Rift
3	Maximum Numbers of Transformer failures	No/mnt/h	48.00	48.00	56.00	-16.7%	48.00	56.00	-16.67%	Seasonal variation
	<b>3 TRANSMISSION</b>									
1.	Transmission Efficiency	Per cent	96.5%	96.5%	95.8%	-0.8%	96.5%	95.8%	-0.78%	Close to target
2.	Transmission line faults 220 KV	No/100	2.00	0.20	0.00	100.0 %	0.20	0.00	66.67%	Above target
3.	Transmission line faults 132 KV	No/100	4.00	0.30	0.30	66.7%	0.30	0.10	66.67%	Above target
	<b>4.HUMAN RESOURCES</b>									
**1.	Customer to staff ratio	Ratio	117	101	105	3.5%	101	105	3.53%	Target met

\*\* indicators affected by distribution projects management

Source: KPLC Monthly Report by performance Monitoring, Research and Development Divisions (July, 2003) as quoted by Njoroge (2003)