

**THE EFFECT OF BUSINESS PROCESS REENGINEERING ON
BUSINESS PROCESS CYCLES
THE CASE OF KENYA POWER AND LIGHTING COMPANY LTD.**

UNIVERSITY OF NAIROBI
JOHN KABETE LIBRARY

BY

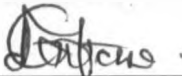
ATEBE . M. G

**A MANAGEMENT PROJECT SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENT FOR THE MASTER
OF BUSINESS AND ADMINISTRATION (MBA) DEGREE,
FACULTY OF COMMERCE, UNIVERSITY OF NAIROBI.**

AUGUST 2001

DECLARATION

This Management project is my original work and has not been presented for a degree in any other university.

Signed: 

GRACE . M. ATEBE

Date: 7th November 2001

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

Signed : 

DR.RAYMOND. M. MUSYOKA

Date: 9/11/2001

DEDICATION

To my mother **JERUSA NYAKERARIO ATEBE**

Who

Has always been there for me.

To my father **LIVINGSTONE ATEBE MARITA**

Who

Taught me the value of education

"You started it all several years ago.

Thank you"

ACKNOWLEDGEMENTS

A number of people have contributed directly or indirectly towards the completion of this research. I wish to sincerely thank all of them.

Special gratitude goes to **Dr. R.N Musyoka** of University of Nairobi, who was my supervisor. He gave me valuable guidance and direction. He was always available for consultation and gave me inspiration that was unsurpassed. I truly feel indebted to him.

Special thanks also goes to all MBA students, with whom we painstakingly toiled. Their encouragement and support was much needed and appreciated. I purposely single out **Thomas Onduso** and **Rosemary Chebet Koros**.

I am most grateful to members of my family who encouraged and gave me advice when necessary.

A special thank you also goes to **Mutahi Wambugu** and **Toni Sittoni** whose advice, encouragement and support is cherished forever.

To all my respondents, *“I couldn’t have done it without you.”*

Lastly, *“Thank you God for making it all happen”*.

TABLE OF CONTENTS

	PAGE
DECLARATION	I
DEDICATION	II
ACKNOWLEDGEMENT	III
ACRONYMS	V
CHAPTER ONE	
1.0 INTRODUCTION	1
1.1 STATEMENT OF THE PROBLEM	4
1.2 OBJECTIVES OF THE STUDY	5
1.3 IMPORTANCE OF THE STUDY	5
CHAPTER TWO	
2.0 LITERATURE REVIEW	6
CHAPTER THREE	
3.0 RESEARCH MEHODOLOGY	15
3.1 THE POPULATION	15
3.2 THE SAMPLE DESIGN	15
3.3 DATA COLLECTION	15
CHAPTER FOUR	
4.0 DATA ANALYSIS AND FINDINGS	18
4.1 GENERAL INFORMATION	18
4.2 DISCUSSIONS	31
5.0 SUMMARY AND DISCUSSIONS	37
5.1 CONCLUSIONS	37
5.2 LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH	38
5.2.1 LIMITATIONS OF THE STUDY	38
5.2.2 SUGGESIONS FOR FURTHER RESEARCH	38
APPENDIX	39
REFERENCES	48

LIST OF TABLES

	PAGE
RESPONDENTS GENDER	18
RESPONDENTS AGES	19
RESPONDENTS MARITAL STATUS	19
RESPONDENTS PROFESSIONS	20
RESPONDENTS RESIDENTIAL AREAS	21
RESPONDENTS EDUCATION LEVELS	22
RESPONDENTS ACCOUNT HOLDERS	22
METER APPLICAION PROCESS	23
EFFICIENCY OF DISCONNECTION	24
RECONNECTION PROCESS	24
EMERGENCY RELATED CASES	25
TIME FRAME OF EMERGENCY RELATED CASES	25
EFFICIENCY OF EMERGENCY CASES RESOLUTION	25
ACCURACY OF BILLS (1980 –1985)	26
ACCURACY OF BILLS (1986 –1990)	26
ACCURACY OF BILLS (1991 –1995)	26
ACCURACY OF BILLS (1996 TO DATE)	27
PROMPTNESS OF BILL (1980 –1985)	28
PROMPTNESS OF BILL (1986 –1990)	28
PROMPTNESS OF BILL (1991 –1996)	28
PROMPTNESS OF BILL (1996 –TO DATE)	28
RECENT VISITS TO KPLC	29
REFFERALS O OTHER OFFICES	29
PROBLEM RESOLUIION TIME	29
EFFICIENCY OF SERVICE RATINGS	30
CROSS TABULATION OF MOST RECENT DISCONNECTION WIH PROMPTNESSOF DISCONNECTION	31
CROSS TABULATION OF EMERGENCY REPORTS WITH EFFICIENCY OF PROBLEM RESOLUTION	32
CROSS TABULATION OF VISIT TO KPLC AND EFFICIENCY OF PROBLEM RESOLUTION	33
CROSS TABULATION OF VISIT O KPLC AND REFFERALS TO ANOTHER KPLC OFFICE	34
CROSS TABULATION OF VISIT TO KPLC AND TIME SPENT TO RESOLVE THE PROBLEM	35
CROSS TABULATION OF VISIT TO KPLC AND EFFICIENCY OF SERVICE OFFERED	36

ACRONYMS.

SAP	Structural Adjustment Program
BPR	Business Process Reengineering
US	United States
IS	Information Systems
KPLC	Kenya Power and Lighting Company
TQM	Total Quality Management
IT	Information Technology
TV	Television
KLM	Royal Dutch Airlines

CHAPTER ONE

1.0 INTRODUCTION

Until the 1980's Kenya was famed for its political stability. However through the 1980's the countries economic difficulties increased and the first Structural adjustment Programs (SAP's) were put in place. By 1993 the economy had been bled white due to misappropriation or embezzlement cutting 2% of the growth rate and causing a rise of 40% in the money supply. (Barkan J.D. 1993)

For almost ten years the Government of Kenya had resisted economic reforms (Maxon R.M, Ndege P. 1995).

Since November 1991 when the World Bank and the International Monetary Bank withheld hundreds of millions of dollars of financial assistance as a protest against mounting corruption and Kenya's political and economic failings, several changes occurred. There was a collapse of social services such as roads, railways, power and water systems. Although Structural Adjustment Programs (SAP's) were implemented to revive the collapsing economy it was clear that this would not succeed without radical public sector reform especially the parastatals. (Financial Times, May 10th 1994). In the course of 1990 the State Cooperation Act was amended so as to enhance the accountability economic and financial developments of the Parastatal sector. In 1991 the Parastatal Reform Program Committee was formed. (Kenya's Parastatal Reform Action Plan 1991).

On the political scene, the introduction of the State Cooperation Act has since been the means by which Harambee house has had immense powers to interfere with the management of parastatals including the appointment and firing of Boards of Directors of Parastatals. This interference was hoped to be curbed by Parastatal restructuring. (Daily Nation, 21st May 2001).

There was a slow growth in economy during 1980 accompanied by a substantial decline in capital formation. The slow growth was attributed to widespread drought conditions that had adverse effects on agriculture and reduced the volume of hydroelectricity for use by the industries (Economic Survey 1981). Against the backdrop of such structural, political and economic factors it was inevitable that restructuring of major institutions on the Kenyan arena be carried out.

A process now in vogue to describe the efforts in process improvements is Business Process Reengineering (BPR). BPR first came to prominence in 1990. Since its appearance in 1990 BPR has in subsequent years attracted very considerable attention in both management practice and literature. Hammer and Champy (1993) noted that organizations conducted business in a certain way for many years. When rapid and strong changes occurred, they found themselves unable to cope with the new conditions. They summarize the major pressures as;

Customers: Customers today know what they want, what they are willing to pay and how to get products and services on their own terms.

Competition: Competition is continuous with respect to price, quality, selection, service and promptness of delivery. Removal of trade barriers, international cooperation and technological innovations cause competition to intensify.

Change: Change will continue to occur. Markets, products, services, technology, the business environment and people keep changing frequently in an unpredictable manner.

Berger, B., et.al. (1989), detailed the weaknesses prevalent in United States (US) industries, not just in macroeconomics terms, but in terms of the customer satisfaction, quality of products, efficiency of production, speed of manufacture and introduction of new products and costs. The study was the first to identify these gaps in the US system and traced their origin to the age of mass production, antitrust laws, use of workers as mere skilled operators, overemphasis on products rather than on processes and to an

environment that has long ceased to exist. They found these strategies to be outdated in the face of increased global trading, emergence of new technologies and their speedy assimilation by many countries and the growth of sophistication among consumers.

Peter Drucker (1969), lamented the lack of any change in the structure of industrial organizations in step with the impressive growth of economy and technologies. Piore and Sabel, (1984) meanwhile noted that a major trigger for BPR is increased affluence and more discriminating consumer tastes.

Over the last ten years, dramatic economic, political and structural factors have altered the nature of organizations. To address these dynamic changes many co-operations have embarked on campaigns fundamentally to redesign their business processes to enhance their productivity and competitiveness (Alter, 1990; McCormick, 1991). One plausible explanation of BPR's growing popularity is that it's viewed by established enterprises as offering a mechanism to make the changes necessary better to fit the new competitive environment in which they find themselves (Technology Foresight, 1995).

According to Hall, Rosenthal and Wade (1993) typically BPR has been driven by such causes as; Downsizing, mergers, leveraged buyouts, productivity or quality improvements initiatives, customer demands for productive flexibility and innovation.

Moving in tandem with these recent popular attention to BPR has been a more subdued but equally significant management initiative within the information system community to focus on information as a strategic resource of the firm. These two critical corporate agenda items BPR and IS share a communality in that their success hinges on the identification and design of efficient and effective business processes.

Organizational theorists propose that the organization of the future will be networked across functions and designed around business processes rather than functional hierarchies (Drucker, 1988; Norton et al 1989; Rockart and Short. 1989). Reengineering business processes is now being offered as a paradigm of organizational change necessary in order to achieve the requisite flexibility and competitiveness of the networked organization (Hammer 1990; Venkatraman, 1991). In this way, BPR can be

conceived as an organizational initiative to regain control of seemingly intractable business processes by streamlining and refocusing how a company operates.

Keen, (1991) asserts that BPR tends to be radical in nature and strives for fundamental structural change. The Breadth and depth of these changes make it imperative that BPR be planned and initiated at the strategic level by top management in order to enhance the likelihood of success.

1.1 STATEMENT OF THE PROBLEM.

In the past six or seven years the demand for electricity has been growing at about 6% every year. Kenya Power and Lighting (KPLC) is therefore in a tight spot both in terms of meeting peak demand as well as on-going energy requirements. (A Blueprint for a new Kenya, A publication of the Institute of Economic affairs.)

Financial records for the KPLC for the past ten years as extracted from KPLC's Annual Report of 1990/91 indicate that up until 1986 KPLC made good after tax profits close to 12.5% of average capital employed. This is considered normal for a capital investive power industry and is consistent with the Electric Power Act. From 1987 onwards, the after tax profits, as a percentage of average capital employed has been less then 6%, which is grossly inadequate.

Internally the KPLC Board approved for the Institutional Strengthening Project that was to spearhead the BPR to start in July 1995 in order to improve the existing business processes of the company. The situation of those business processes was characterized by; paper based manual procedures, over centralization of the information management, off-line information, outdated information technology and a commercial cycle too long. (Management Committee meeting, November 1998).

Coupled with the company vision “*To achieve world class status as a quality service business enterprise so as to be the first choice supplier of electrical energy in a competitive environment,*” it was inevitable for KPLC to undergo reengineering.

The prime concerns of the researcher are;

Has BPR significantly assisted in reducing business process cycles that directly relate to the customer?

1.2 OBJECTIVES OF THE STUDY

- i. To determine the effect of business process reengineering on business process cycles that directly relate to the customer.

1.3 IMPORTANCE OF THE STUDY

The study will be beneficial to many groups:

Industry –

This study helps to shed light to firms in the service industry on the effects of BPR on business process cycles.

Academicians-

The study hopes to stimulate interest in the relatively new field of BPR while shedding light on the effect of BPR on business process cycles.

Consumers

The study will aid in enlightening consumers on the intended purpose of BPR so as to better appreciate and connect with the idea.

CHAPTER TWO

2.0 LITERATURE REVIEW.

Business Process Reengineering is “ the analysis and design of work-flows and processes within and between organizations” (Davenport and Short 1990). They however observed that quality specialists tend to focus on incremental change and gradual improvement of processes, while proponents of reengineering often seek radical redesign and drastic improvement of processes.

Hammer and Stanton (1995) define “dramatic” as making quantum leaps in performance and achieving breakthroughs. “Radical” they define as beginning with the proverbial clean slate and reinventing how you do your work. A “process” is further defined as a group of related tasks that together create value for a customer. Meanwhile they define “redesign” as the design of how work is done.

Teng et al (1994) defines BPR as “ the critical analysis and radical design of existing business processes to achieve breakthrough improvements in performance measures. They also note that in recent years, increased attention to business processes is largely due to Total Quality Management (TQM). They conclude that TQM and BPR share a cross- functional orientation.

Hammer and Champy (1993) define BPR as “the radical rethinking of business processes to achieve dramatic improvement in critical contemporary measures of performance such as cost, quality and speed. This definition will be used for the purpose of the study.

There are widespread misconceptions of reengineering. Reengineering is not “downsizing” according to Hammer and Stanton (1995). They define reengineering as rethinking work from the ground up in order to eliminate work that that is not necessary and to find better ways of doing that which is. It is however true that in the process you may need fewer people. Reengineering is also not “restructuring”, since reengineering is

about how work is done and not how an organization is structured. James Piper adds that reengineering is not “automation” since the focus of reengineering is the customer. Automation is a reengineering tool to help provide value to the customer.

An organization has four interrelated aspects. These are:

“Processes” which are the mechanisms by which work is performed and value created.
“Design of business processes” which shapes the design of jobs and the kinds of people needed to perform them. These give rise to an appropriate set of organizational structures and Management systems for measuring, hiring, training, and developing these people. These systems in turn induce a set of attitudes, beliefs, and cultural norms and these support the performance of the process. Reengineering begins with process design but inevitably moves through all facets. (Hammer and Stanton 1995).

They further identified a variety of figures that play an important role in reengineering. These include:

The leader: This is a senior individual who has both the authority and the commitment to launch an undertaking of this magnitude. This should be someone in a position to compel the compliance of all parties involved in reengineering while creating an environment in which reengineering can be done.

The process owner: This is a senior individual designated by the leader to have an end to end responsibility for the process and it’s performance. He also assembles a team comprising outsiders and insiders.

Insiders: These are people who work in the current process and bring knowledge, experience and credibility to the team.

Outsiders: These are people who know nothing about the existing process but can offer the creativity that flows from a fresh, objective perspective.

Davenport (1993) notes that TQM or continuous improvement, refers to programs and initiatives that emphasize incremental improvement in work processes and outputs over

an open-ended period of time. In contrast BPR or process innovation, refers to discrete initiatives that are intended to achieve radically redesigned and improved work processes in a bounded time frame.

Process improvement (TQM) versus Process Innovation (BPR)

	<u>TQM</u>	<u>BPR</u>
• Level of change	Incremental	Radical
• Starting point	Existing process	Clean slate
• Frequency of change	One-time/Continuous	One-time/Long
• Time required	Short	Long
• Participation	Bottom- up	Top-down
• Typical scope	Narrow	Broad
• Risk	Moderate	High
• Primary enabler	Statistical control	Information Technology
• Type of change	Cultural	Cultural or Structural

Source: Davenport (1993).

Davenport and Short (1990) define Business Process as “ a set of logically related tasks performed to achieve a defined business outcome.” They further define a process as “a structured, measured set of activities designed to produce a specified output for a particular customer or market. It implies a strong emphasis on how work is done within an organization” In their view processes have two important characteristics; They have customers (internal or external) and they have cross-organizational boundaries (that is they occur across or between organizational subunits). Processes they further claim are generally identified in terms of beginning and end points, interfaces, and organization units involved, particularly the customer unit. They give examples of processes as

Developing a new product, ordering goods from a supplier, or creating a marketing plan. Processes they report may be defined based on three dimensions;

i. Entities:

Processes take place between organizational entities. They could be inter-organizational, inter-functional or inter-personal.

ii. Objects:

Processes result in manipulation of objects. These objects could be physical or informational.

iii. Activities:

Processes could involve two types of activities: Managerial (example Develop a budget) and Operational (example fill a customer order).

Hammer (1990) considers Information Technology (IT) as the key enabler of BPR which he considers as radical change. He prescribes the use of IT to challenge the assumptions inherent in the work processes that have prevailed since long before the advent of the modern computer and communication technology. There is considerable anecdotal evidence that even small changes in the use of IT in an organization may require major restructuring of the organization to take full advantage of the efficiencies created by the technology reports Barley.S. (1986). Conversely, Roach S.S (1991) notes that there is also considerable evidence that without major restructuring, the introduction of IT may not produce savings needed even to justify the investment.

Davenport & Short (1990) argue that BPR requires taking a broader view of both IT and Business activity, and of the relationship between them. IT should be viewed as more than an automating or mechanizing force to fundamentally reshape the way business is done. Business activities should be viewed as more than a collection of individual or even functional tasks in a process view for maximizing effectiveness. IT and BPR have recursive relationship. IT capabilities should support business processes, and business

processes should be in terms of the capabilities IT can provide. They refer to this broadened recursive view of IT and BPR as the new industrial reengineering for which they prescribe a five-step approach;

- Develop the business vision and process objectives:
BPR is driven by a business vision which implies specific business objectives such as cost reduction, time reduction, output quality improvement etceteras.
- Identify the processes to be redesigned :
Most firms use the high impact approach which focuses on the most important processes or those that conflict most with the business vision. Lesser number of firms use the exhaustive approach that attempts to identify all the processes within an organization and then prioritize them in order of redesign urgency
- Understand and measure the Existing process:
This helps to avoid repeating of old mistakes and for providing a baseline for future improvements.
- Identify IT levers:
Awareness of IT capabilities can and should influence process reengineering.
- Develop and Build a prototype of the new process:
The actual design should not be viewed as the end of the reengineering process. Rather it should be seen as the prototype, with successive iterations. The metaphor of prototype aligns the BPR approach with quick delivery of results and the involvement and satisfaction of customers.

Teng et al. (1994) argue that the way related functions participate in a process, that is, the functional coupling of a process can be differentiated along two dimensions; Degree of mediation and degree of collaboration.

They define the Degree of Mediation as the extent of sequential flow of input and output among participating functions. They define the Degree of Collaboration of the process as the extent of information exchange and mutual adjustment among functions when participating in the same process. In their framework, information technology is instrumental in reducing the Degree of Mediation and enhancing the Degree of Collaboration. Also, innovative uses of IT would inevitably lead many firms to develop new, coordination intensive structures, enabling them to coordinate their activities in ways that were not possible before. Such coordination-intensive structures may raise the organization capabilities and responsiveness, leading to potential strategic advantage.

Success of the reengineering process is dependent on its breadth and depth. The breadth involves identifying the activities to include in the process being redesigned that are critical for value creation in the entire business unit. Depth means how much of roles and responsibilities, measurements and incentives, organizational structure, information technology, shared values and skills change as a result of reengineering. Even with sufficient breadth and depth, a reengineering project will fail without full commitment of senior executives. (Hall, Rosenthal and Wade 1993).

Bashein et al (1994) outline the positive preconditions for BPR success as :

Senior Management commitment and sponsorship, Realistic expectations, Empowered and collaborative workers, Strategic context of growth and expansion, Shared vision, Sound Management practice, Appropriate people participating full time and a Sufficient budget. They identify negative preconditions related to BPR as: The wrong sponsor, Cost cutting focus, a Narrow technical focus, Unsound financial position, Too many projects underway and Fear and lack of optimism.

Considerable uncertainty and confusion exists about what business process reengineering is and when it succeeds. Case studies of some re-known organizations should be able to shed light on the success of their business process reengineering efforts.

CIGNA a leading provider of insurance and related financial services throughout the United States and the world completed over twenty reengineering initiatives saving over \$100 million.

The projects with major payoffs include;

Operating expenses reduced by 42%, cycle times improved by 100%, customer satisfaction improved by 50% and quality improvement of 75% (Caron, Jarvenpaa and Stoddard 1994). By February 1991 the division had down-sized by 40%, operating costs were down by 40% and a two week underwriting procedure was compressed into 15 minutes. The number of application systems in use was reduced from 17 to 5. The administrative and systems staff were reduced by 40% and 30% respectively. A major change was a new culture that emphasized accountability and customer orientation.

The history of the Chrysler Corporation, one of collapse and revival through reengineering has provided impetus for this business innovation. In 37 months from design Chrysler had in production the LH series of cars using the platform team organization. Gardner, G., (1994), notes that this was done with 740 people as opposed to 1400 previously for similar size cars. The engine development time for a 3.5-liter option was reduced from 240 weeks to 187 weeks

The reengineering of Caterpillar, a giant in the earth moving machinery was triggered by a billion-dollar loss in 1984, after a three-year run of record profits from 1981. Hooker, (1994) reports that Caterpillar met this challenge by a radical restructuring of the entire company that included all its business process. This was successfully achieved in 1994 when the cycle time was reduced to about thirty-nine months.

Hughes Aircraft Co. owned by General Motors, is a major defense contractor working on projects related to aerospace and electronics. Due to a downward trend in defense contracts, Hughes restructured its core competencies to identify a niche in the civilian market and chose satellite digital TV. With a subscription of \$30 per month, Hughes has already enlisted 500000 subscribers. If Hughes had not taken this initiative and

restructured its business process for the civilian market, it would have joined the ranks of other defense manufacturers, waiting to bid for infrequent contracts from the Pentagon.

King(1994) sees the primary reason of BPR failure as overemphasis on the tactical aspects and the strategic dimensions being compromised. He notes that most failures are attributable to the process being viewed as and applied at a tactical rather than strategic level. He notes that there are important strategic dimensions to BPR notably; Developing and prioritizing objectives, identifying trade off between processes, identifying new products and market opportunities, coordinating the reengineering effort, and developing a human resource strategy. He concludes that that the ultimate success of BPR depends on the people who do it and how well motivated they are to be creative and to apply their detailed knowledge to the reengineering of business processes.

The remarkable turnaround at Kenya Airways is reassuring evidence that Parastatal reform is not as elusive as most African experiences may suggest. By 1991 a new management team was appointed that restructured top management replacing top political appointees with professionals, 9% of the workforce went on early retirement, while the remaining 2700 were put on customer service training, *"Putting people first."* (Financial Times May 10th 1994). Kenya Airways further got into a partnership with Royal Dutch Airlines in which KLM holds 26% equity stake in a code sharing agreement that has led to an increase in flight destinations so as to better serve their customers hence their famous slogan, *"Further, faster friendlier."* (Daily Nation, July 19th 1999).

KLM further entered into a pioneering cooperation with its Italian counterpart Alitalia to improve their competitive edge while offering customers a wide range of connections and joint standards of service. (Daily Nation, August 19th 1999).

In a bid to make McCann make its operations more customer focused McCann Erickson World Group merged two of its units, MRM Worldwide and Zentropy Partners into a single entity MRM Partners Worldwide. (The East African, June 4th – 10th 2001).

The British drug giants GlaxoWellcome and SmithKline Beecham sealed their merger in December 2000 creating the worlds leading pharmaceutical group by market share and Britain's third largest company. It makes the new company Glaxo SmithKline the market leader in four of five major therapeutic categories. (Daily Nation 29th December 2000). Meanwhile the merger of Pfizer and Warner Lambert Worldwide into one company namely Pfizer was intended to further the business of both companies and add value to their clients. (Daily Nation, 26th November 2000).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

This research was investigative as it tried to investigate the significance of BPR in reducing business process cycles at KP&LC.

3.1 THE POPULATION.

The target population consisted of;

Male or female adults responsible for the payment of electricity bills in households within Nairobi during the survey period.

3.2 THE SAMPLE DESIGN

The researcher will used the sampling method as a census would be unrealistic given the large population size.

Electricity consumers vary from manufacturers, commercial consumers and residential consumers. For purposes of this study residential consumers were used so as to capture the perception of the effect of BPR on reducing business process cycles at the individual level as opposed to the cooperate level.

THE KENYA POWER AND LIGHTING COMPANY NATIONAL CUSTOMER SUMMARY.

DOMESTIC RUNNING ACCOUNTS	538,096	
INDUSTRIAL RUNNING ACCOUNTS	<u>3,096</u>	
TOTAL RUNNING ACCOUNTS	541,192	as at July 2001

The sampling frame was the computer database at KPLC with all consumers within the Nairobi area. Geographically stratified sampling was applied where Nairobi was divided into North, South and West as per the KPLC's geographical boundaries.

SUMMARY OF KPLC CUSTOMER DISTRIBUTION IN NAIROBI AREA

<u>AREA</u>	<u>NO. OF SUPPLIES</u>
NAIROBI SOUTH	113,045
NAIROBI WEST	94,147
NAIROBI NORTH	<u>86,930</u>
TOTAL	294,122 as at July 2001

A random sample procedure was used to pick 150 respondents. This number was considered large enough to provide a general view of the entire population and hence provide a basis for valid and reliable conclusions. Given that the populations in the three areas was unproportional, they were made proportional by use of percentages as follows:

<u>AREA</u>	<u>PERCENTAGE (%)</u>	<u>NO.OF SUPPLIES</u>
NAIROBI SOUTH	38.4	58
NAIROBI WEST	32.0	48
NAIROBI NORTH	<u>29.6</u>	<u>44</u>
	100	150

3.3 DATA COLLECTION

The study used primary data. Data collection was by use of a questionnaire to ensure comparability of the data, increase speed and accuracy of recording and facilitate data processing.

The questionnaire was structured and multiple choice in nature and it applied the five point Likert type scale, that Malhotra (1996) describes as ideal for measurement of attitudes, is easy to construct and administer and respondents readily understand how to use the scale.

There were two parts of the questionnaire:

Part A was on general information about the respondent.

Part B contained opinion statements intended to find out the extent to which the respondent agrees or disagrees with each of the statements based on the likert scale rating.

The questionnaire was pre-tested on six (6) candidates before the final version of the questionnaire was developed.

The administration of the questionnaires was by the “drop and pick up later method.”

4.0 DATA ANALYSIS AND FINDINGS

INTRODUCTION

The data analysis sought to determine the significance of BPR on reducing business cycles that directly relate to the customer at KPLC. The research will also determine whether the observed pattern corresponds to the expected pattern.

Before processing, the responses of the questionnaire were edited for completeness and consistency. The data was then coded to enable the responses to be grouped into categories. Descriptive statistics were used to summarize the data. These included percentages frequencies and proportions which were used to establish the number and proportion of respondents responding positively or negatively so as to make logical conclusion on the population the sample represents.

Part 1 analyses the data collected through the use of frequency tables and percentages. Part 2 uses cross tabulations to analyze the data by comparing key variables identified in the study to determine the relationship between them.

PART 1

4.1 GENERAL INFORMATION

TABLE 1
RESPONDENTS GENDER

GENDER	FREQUENCY	PERCENTAGE (%)
MALE	42	63.60
FEMALE	24	36.40
TOTAL	66	100.00

The total number of respondents were 66. Of these 42 (63.6%) were male while 24 (36.4%) were female.

TABLE 2
RESPONDENTS AGES

AGE	FREQUENCY	PERCENTAGE (%)
UNDER 25 YEARS	3	4.60
26 -35 YEARS	42	64.60
36 -45 YEARS	18	27.70
46 -55 YEARS	2	3.10
TOTAL	65	100.00

Majority of the respondents' (42) were aged between 26 –35 years making a percentage of 64.6% . Minority (2) fell in the age bracket of 46 – 55 years making a percentage of 3.1%

TABLE 3
RESPONDENTS MARITAL STATUS

MARITAL STATUS	FREQUENCY	PERCENTAGE(%)
SINGLE	23	34.80
MARRIE	43	65.20
TOTAL	66	100.00

The percentage of the respondents who were single were 23 (34.8%) and 43 (65.2%) were married.

TABLE 4

RESPONDENTS PROFFESIONS

PROFESSION	FREQUENCY	PERCENTAGE(%)
ENGINEER	9	13.40
IT	7	10.90
SALE & MARKETING	16	25.00
COPY TAKER	2	3.10
SECRETARY	2	3.10
MEDICAL REP	1	1.60
CLERK	1	1.60
JOURNALIST	3	4.70
BUSINESS	4	6.30
INSURANCE	1	1.60
TOUR GUIDE	1	1.60
BEAUTICIAN	1	1.60
DOCTOR	2	3.10
BANKER	1	1.60
CHEMIST	11	17.20
LAB TECNICIAN	2	3.10
TOTAL	64	100.00

Majority of the respondents were Sales and Marketing personnel with a fair distribution being from most of the other professional categories.

TABLE 5
RESPONDENTS RESIDENTIAL AREAS

RESIDENCE	FREQUENCY	PERCENTAGE (%)
KINOO	8	13.30
KOMAROCK	5	8.30
EMBAKASI	4	6.70
ZIMMERMAN	5	8.30
HARAMBEE	2	3.30
BURUBURU	5	8.30
NAIROBI WEST	3	5.00
PARKLANDS	3	5.00
SUNRISE	11	18.30
SOUTH C	1	1.70
SANANNAH	1	1.70
KIKUYU	1	1.70
UMOJA	3	5.00
KAYOLE	1	1.70
KILIMANI	1	1.70
UPPER HILL	1	1.70
NGONG	4	6.70
EASTLEIGH	1	1.70
TOTAL	60	100.00

Of the 60 respondents majority (11) making 18.3% happened to be from Sunrise Estate in Eastlands. However it's notable that overall majority of the respondents were generally from the Eastlands areas.

TABLE 6
RESPONDENTS INCOME LEVELS

INCOME	FREQUENCY	PERCENTAGE(%)
UNDER 20000	22	33.80
21000 - 50000	29	44.60
51000 - 100000	2	18.50
OVER 100000	2	3.10
TOTAL	65	100.00

Of the total (65) respondents to this question majority (29) making 44.6% were in the middle income-earning group. The lower income earning group comprised 33.8% respondents while the higher income-earning group comprised 21.6%.

TABLE 7
RESPONDENTS EDUCATION LEVELS

EDUCATION LEVEL	FREQUENCY	PERCENTAGE(%)
SECONDARY LEVEL	17	27.00
GRADUATE LEVEL	42	66.70
POST GRADUATE	4	6.30
TOTAL	63	100.00

Majority of the respondents (42) making 66.7% were of graduate level while minority (4) making 6.3% were of post graduate level.

TABLE 8
RESPONDENTS ACCOUNT HOLDERS

	FREQUENCY	PERCENTAGE (%)
ACCOUNT HOLDERS	37	57.80
NON ACCOUNT HOLDERS	27	42.20
TOTAL	64	100.00

Of the total 64 respondents to this question 37 making 57.8% had accounts running in their names while 27 (42.2%) were customers running accounts in other names other than their own.

TABLE 9
METER APPLICATION PROCESS

METER APPLICATION	FREQUENCY	PERCENTAGE(%)
APPLIED FOR METER	17	27.90
CONTRACTED EXISTING METER	44	72.10
TOTAL	61	100.00

Of the total customers that applied for their meters 17.9% confirmed that the meter application process was very good while 42.9% confirmed that the meter application process was good. The remaining percentage comprised those that felt the process was either fairly good or poor.

TABLE 10
DISCONNECTION PROCESS

MOST RECENT DISCONNECTION	FREQUENCY	PERCENTAGE (%)
1986 -1990	1	1.50
1991 - 1995	3	9.70
1996 AND LATER	27	87.10
TOTAL	31	100.00

TABLE 11
EFFICIENCY OF DISCONNECTION

PROMPTNESS OF DISCONNECTION	FREQUENCY	PERCENTAGE (%)
EXTREMELY PROMPT	13	35.10
VERY PROMPT	6	16.20
PROMPT	6	16.20
FAIRLY PROMPT	5	13.50
POOR	7	18.90
TOTAL	37	100.00

Most cases of disconnection due to non-payment were reported in the period 1996 and later. Of these 13 (35.1%) reported the disconnection process as extremely prompt after the due date while 18.9% felt the disconnection process was poor.

TABLE 12
RECONNECTION PROCESS

RECONNECTION RATINGS	FREQUENCY	PERCENTAGE(%)
VERY GOOD	1	2.90
GOOD	7	20.60
FAIRLY GOOD	9	26.50
POOR	17	50.00
TOTAL	34	100.00

On the contrary the reconnection process was poorly rated with majority (17) making 50% of those who had been disconnected reporting the process as poor. The remaining 50% either rated the process as very good, good or fairly good.

TABLE 13
EMERGENCY REPORTED CASES

EMERGENCY OFFICE REPORTS	FREQUENCY	PERCENTAGE (%)
REPORTED CASES	39	63.90
NOT REPORTED	22	36.10
TOTAL	61	100.00

TABLE 14
TIME FRAME OF EMERGENCY REPORTED CASES

MOST RECENT REPORT	FREQUENCY	PERCENTAGE (%)
1991 -1995	2	5.10
1996 AND LATER	37	55.20
TOTAL	39	100.00

Of the total respondents to this question (39) making 63.9% had reported emergency related problems to the emergency office. Most of this cases were reported in the period between 1996 and later.

TABLE 15
EFFICIENCY OF EMERGENCY CASES RESOLUTION

PROBLEM RESOLUTION RATINGS	FREQUENCY	PERCENTAGE (%)
EXCELLENT	3	7.00
VERY GOOD	2	4.70
GOOD	8	18.60
FAIRLY GOOD	13	30.20
POOR	17	39.50
TOTAL	43	100.00

Of the total respondents (17) making 39.5% reported their emergency problem resolution as poor, while the remaining percentage was unevenly distributed between excellent, very good, good and fairly good.

TABLE 16
ACCURACY OF BILLS (1980 – 1985)

ACCURACY OF BILLS (1980 -1985)	FREQUENCY	PERCENTAGE (%)
EXTERMELY ACCURATE	4	16.70
VERY ACCURATE	5	20.80
ACCURATE	7	10.40
FAIRLY ACCURATE	5	20.80
POOR	3	12.50
TOTAL	24	100.00

TABLE 17
ACCURACY OF BILLS (1986 –1990)

ACCURACY OF BILLS (1986 -1990)	FREQUENCY	PERCENTAGE (%)
EXTERMELY ACCURATE	3	11.10
VERY ACCURATE	7	10.40
ACCURATE	10	37.10
FAIRLY ACCURATE	6	9.00
POOR	1	1.50
TOTAL	27	100.00

TABLE 18
ACCURACY OF BILLS (1991 –1995)

ACCURACY OF BILLS (1991 -1995)	FREQUENCY	PERCENTAGE (%)
EXTERMELY ACCURATE	5	14.30
VERY ACCURATE	5	14.30
ACCURATE	13	37.10
FAIRLY ACCURATE	9	25.70
POOR	3	8.60
TOTAL	35	100.00

TABLE 19

ACCURACY OF BILLS (1996 TO DATE)

ACCURACY OF BILLS (1996 TO DATE)		FREQUENCY		PERCENTAGE (%)	
EXTERMELY ACCURATE		5		8.80	
VERY ACCURATE		10		17.50	
ACCURATE		19		33.30	
FAIRLY ACCURATE		14		24.60	
POOR		9		15.80	
TOTAL		57		100.00	

Overall the percentage of customers reporting the billing process as poor has significantly reduced over the years. Those reporting the billing process as poor in the period 1980 – 1985 were 12.5%. The remaining percentage was distributed between extremely accurate and fairly accurate. In the period between 1986 –1990 those reporting the billing as poor reduced to 3.7% . This percentage increased slightly over the periods 1991 –1995 (8.6%) and 15.8% in the period 1996 to date. This accuracy in billing can be attributed directly to the accuracy in readings due to use of handsets and computerization.

TABLE 20

PROMPTNESS OF BILLS (1980 –1985)

PROMPTNESS OF BILLS (1980 -1985)		FREQUENCY		PERCENTAGE (%)	
EXTREMELY PROMPT		4		14.80	
VERY PROMPT		8		29.60	
PROMPT		8		29.60	
FAIRLY PROMPT		7		25.90	
TOTAL		27		100.00	

TABLE 21

PROMPTNESS OF BILLS (1986 –1990)

PROMPTNESS OF BILLS (1986 -1990)	FREQUENCY		PERCENTAGE (%)	
EXTREMELY PROMPT	2		7.40	
VERY PROMPT	8		29.60	
PROMPT	10		37.00	
FAIRLY PROMPT	6		22.20	
POOR	1		3.00	
TOTAL	27		100.00	

TABLE 22

PROMPTNESS OF BILLS (1991 –1995)

PROMPTNESS OF BILLS (1991 – 1995)	FREQUENCY		PERCENTAGE (%)	
EXTREMELY PROMPT	7		20.60	
VERY PROMPT	11		32.40	
PROMPT	13		38.20	
FAIRLY PROMPT	2		5.90	
POOR	1		1.50	
TOTAL	34		100.00	

TABLE 23

PROMPTNESS OF BILLS 1996 TO DATE

PROMPTNESS OF BILLS (1996 TO DATE)	FREQUENCY		PERCENTAGE (%)	
EXTREMELY PROMPT	12		21.40	
VERY PROMPT	16		28.60	
PROMPT	22		39.30	
FAIRLY PROMPT	5		8.90	
POOR	1		1.80	
TOTAL	56		100.00	

Overall it can be concluded that the percentage of respondents reporting the promptness of bills as poor has significantly reduced over the years to an almost negligible percentage. Majority of the respondents rated the promptness of their billing as extremely

prompt, very prompt, prompt or fairly prompt. This is still further attributed to computerization.

TABLE 24
RECENT VISITS TO KPLC

RECENT VISIT TO KPLC	FREQUENCY	PERCENTAGE (%)
1980 - 1985	1	1.70
1991 -1995	3	5.10
1996 AND LATER	55	93.20
TOTAL	59	100.00

TABLE 25
REFFERALS TO OTHER OFFICES

	FREQUENCY	PERCENTAGE (%)
REFFERED TO ANOTHER OFFICE	25	39.7
ONE STOP SERVICE	38	60.3
TOTAL	63	100

TABLE 26
PROBLEM RESOLUTION TIME

TIME TO RESOLVE PROBLEM	FREQUENCY	PERCENTAGE (%)
SOME MINUTES	22	50
SOME HOURS	7	10.4
SOME WEEKS	9	20.5
SOME MONTHS	6	13.6
TOTAL	44	100

Majority of those that had personally visited KPLC offices did so in the period 1991 –1995. Of these 60.3% received one stop service while 39.7% had to be refereed to another office to have their problem resolved. Majority (50%) felt that their problems had been resolved in some minutes with the remaining percentage being distributed between having their problems solved in some hours, some weeks or some months.

TABLE 27

EFFICIENCY OF SERVICE RATINGS

EFFICIENCY OF SERVICE RATINGS	FREQUENCY		PERCENTAGE(%)	
EXCELLENT	2		3.90	
VERY GOOD	6		11.80	
GOOD	17		33.30	
FAIRLY GOOD	17		33.30	
POOR	9		17.60	
TOTAL	51		100.00	

Generally (9) making 17.6% of those that had visited the KPLC offices felt that the service they received was poor while the remaining percentage comprised those that felt the service was either excellent, very good, good or fairly good.

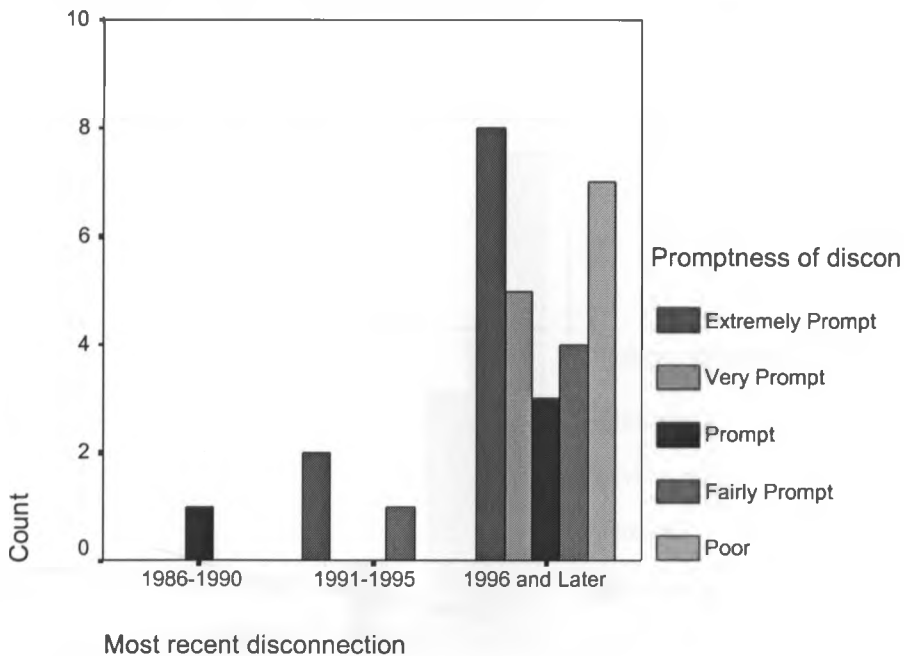
4.2 DISCUSSIONS

PART 2

Cross tabs 1

Most recent disconnection * Promptness of disconnection after due date Crosstabulation

Count		Promptness of disconnection after due date					Total
		Extremely Prompt	Very Prompt	Prompt	Fairly Prompt	Poor	
Most recent disconnection	1986-1990			1			1
	1991-1995	2			1		3
	1996 and Later	8	5	3	4	7	27
Total		10	5	4	5	7	31



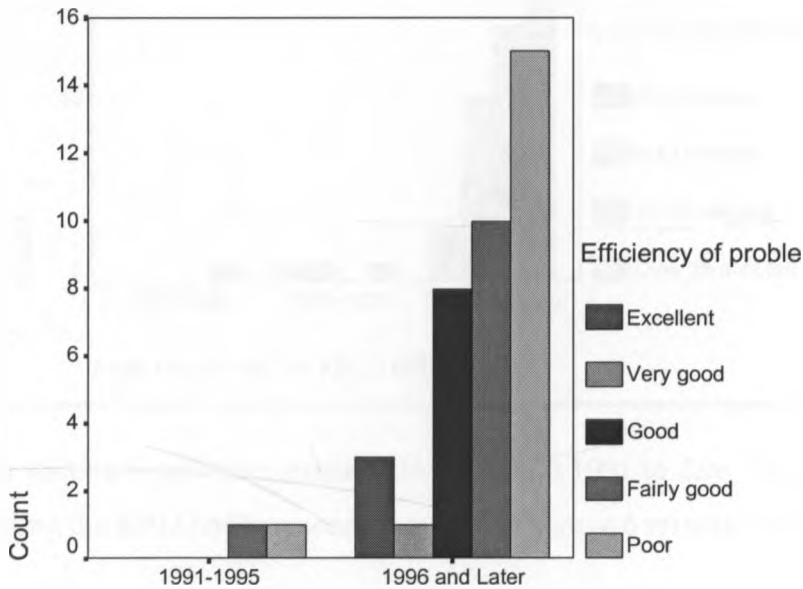
From the data above it can be deduced that the efficiency of the disconnection process in the period 1991 to date has been on the increase as more respondents reported the process to be either extremely prompt, very prompt, or fairly prompt. In the period 1996 and later those reporting the efficiency of disconnection were quite high. This can be

attributed to the fact that disconnection may be done long after the due date due to existing disconnection orders in a late paid account.

Crosstabs 2

Most recent report to KPLC emergency office * Efficiency of problem resolution - Ratings Crosstabulation

Count		Efficiency of problem resolution - Ratings					Total
		Excellent	Very good	Good	Fairly good	Poor	
Most recent report to KPLC emergency office	1991-1995				1	1	2
	1996 and Later	3	1	8	10	15	37
Total		3	1	8	11	16	39



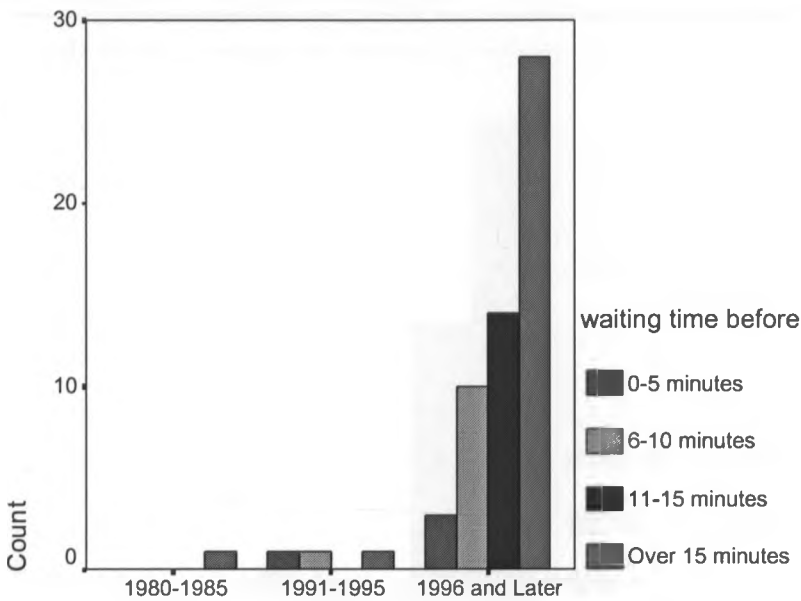
Most recent report to KPLC emergency office

From the data above it can be deduced that the resolution of emergency related cases has been significantly unsatisfactory between the period 1991 to date.

Crosstabs 3

most recent visit to KPLC offices * waiting time before attention Crosstabulation

Count		waiting time before attention				Total
		0-5 minutes	6-10 minutes	11-15 minutes	Over 15 minutes	
most recent visit to KPLC offices	1980-1985				1	1
	1991-1995	1	1		1	3
	1996 and Later	3	10	14	28	55
Total		4	11	14	30	59



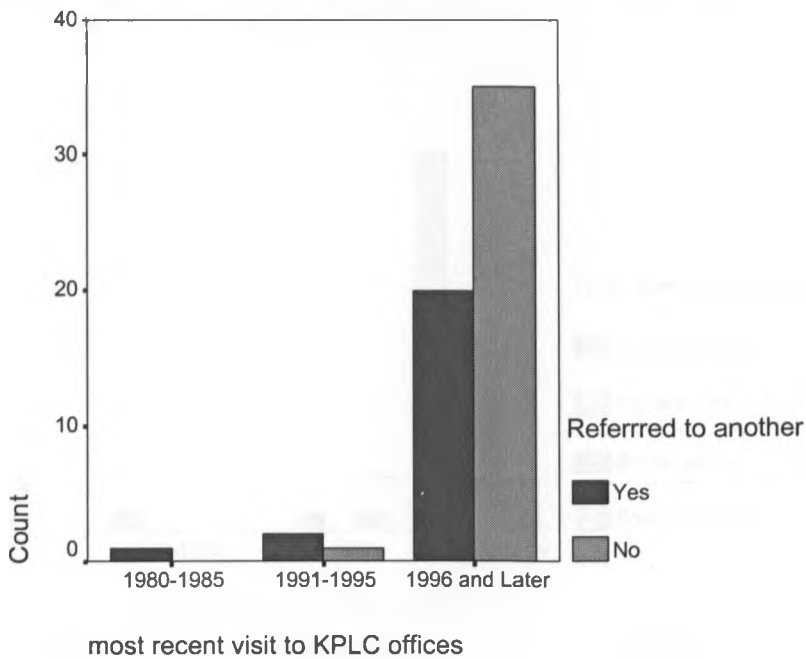
most recent visit to KPLC offices

The waiting time before attention in the period 1991 to date for most respondents visiting the KPLC offices seemed to be on average 6 minutes and above.

Crosstabs 4

most recent visit to KPLC offices * Referred to another office
Crosstabulation

Count		Referred to another office		Total
		Yes	No	
most recent visit to KPLC offices	1980-1985	1		1
	1991-1995	2	1	3
	1996 and Later	20	35	55
Total		23	36	59

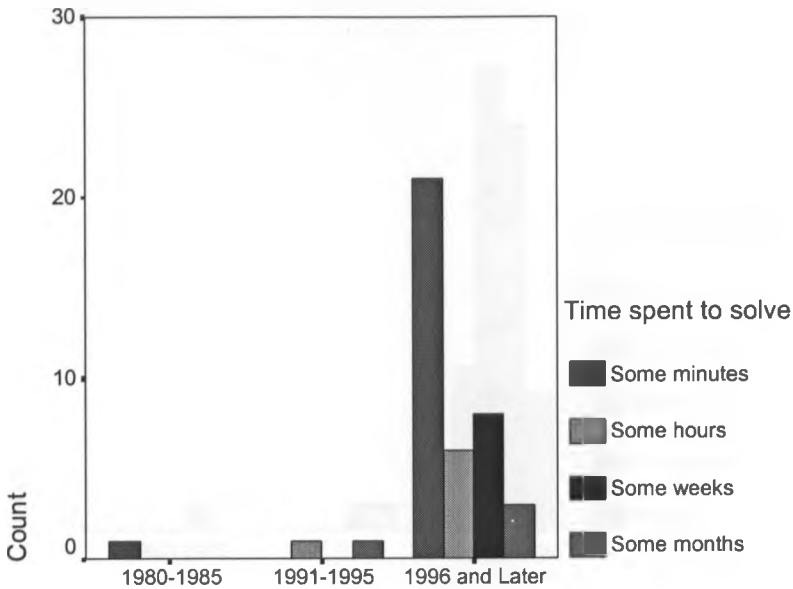


It can be deduced from the graph above that majority of the respondents had their problems solved as a one stop service in the period 1996 and later. This can be attributed to computerization making information readily available due to a Wide Area Network System.

Crosstabs 5

most recent visit to KPLC offices * Time spent to solve problem Crosstabulation

Count		Time spent to solve problem				Total
		Some minutes	Some hours	Some weeks	Some months	
most recent visit to KPLC offices	1980-1985	1				1
	1991-1995		1		1	2
	1996 and Later	21	6	8	3	38
Total		22	7	8	4	41



most recent visit to KPLC offices

Although it can be noted that some of the respondents problems were solved after some months especially in the period 1991 to date, it's notable that majority had their problems solved reasonable fast the duration being between some minutes and some weeks.

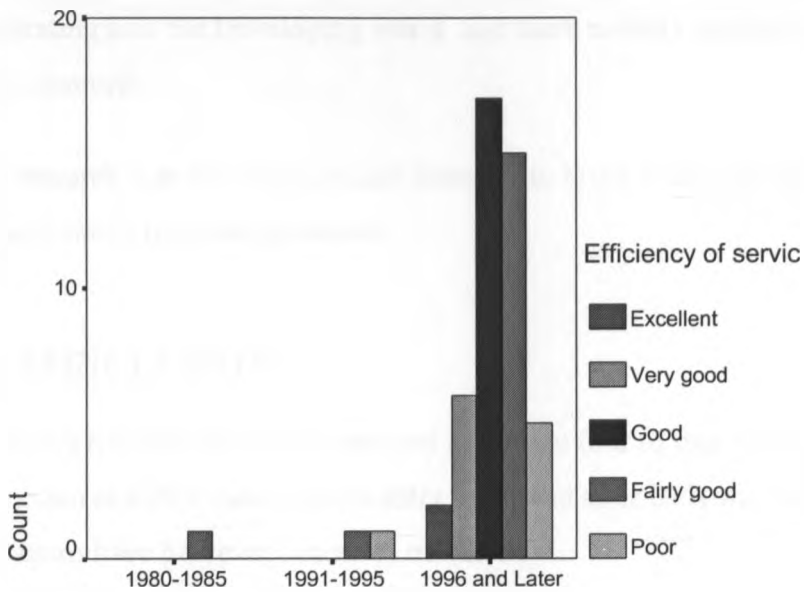


Crosstabs 6

most recent visit to KPLC offices * Efficiency of service - Ratings Crosstabulation

Count

		Efficiency of service - Ratings					Total
		Excellent	Very good	Good	Fairly good	Poor	
most recent visit to KPLC offices	1980-1985				1		1
	1991-1995				1	1	2
	1996 and Later	2	6	17	15	5	45
Total		2	6	17	17	6	48



most recent visit to KPLC offices

Overall from the graph above it can be deduced that majority of customers visited KPLC offices after the period 1996 and later. Their overall average rating of KPLC service is good.

5.0 SUMMARY AND CONCLUSIONS

The objective of this study was to determine if BPR has significantly reduced business process cycles that directly relate to the customer at KPLC. This processes include disconnection, reconnection, meter readings, billing accuracy and promptness.

In my search for literature it was evident that BPR had been well embraced and implemented in the Western world with many organizations reporting success. In particular organizations in America, United Kingdom and Japan. Slowly the idea is infiltrating into the Developing world and more notably among the Multi national organizations.

My research was investigative and attempts to bring to fore the effect of BPR on a local organizations business processes.

5.1 CONCLUSIONS

From the research findings presented in section four of this study it is clear that some processes at KPLC have significantly improved after BPR was implemented. Not all processes have however benefited in this way.

It will be remembered that before BPR implementation, The situation of these business processes was characterized by; paper based manual procedures, over centralization of the information management, off-line information, outdated information technology and a commercial cycle too long.

Given that the BPR process was implemented in June 1995, the achievements this far may be termed significant. This is taking into consideration that BPR is a radical process where radical means beginning with the proverbial clean slate and re-inventing how you do you're work. Given the time elapsed between implementation (June 1995) to date the progress is commendable.

5.2 LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH

This section discusses the limitations of the study and offers suggestions for further research.

5.2.1 LIMITATIONS TO THE STUDY.

The study was carried out after a spell of power rationing necessitated by a spell of drought. Most respondents seemed to have that at top of mind and were still bitter about it. This could have adversely necessitated a negative attitude towards the organization.

Resources were also another major constraint. The research focused mainly on Nairobi area. It would have been interesting to have a wider research area with a larger sample so as to have a more representative conclusion.

5.2.2 SUGGESTIONS FOR FURTHER RESEARCH.

BPR is a relatively new phenomenon especially in the developing world. As such not many organizations have embraced the idea either due to the looming expenses that have to be incurred and success is never certain.

Further research is therefore of necessity to determine what impact the process has had on organizations that have gone through the process so as to dispel fears of others trying it out.

It would also be interesting to research further on the impact of BPR on the quality of customer service for those organizations that have gone through the process so as to further appreciate the importance of BPR and it's wider value not only to the organization but the organizations customers as well.

APPENDIX

Miss Grace .M. Atebe,
C/O MBA office,
University of Nairobi,
P.O. Box 30197,
Nairobi.

July 2001

Dear Respondent,

I am a postgraduate student studying for a Master of Business Administration Degree at the Faculty of Commerce, University of Nairobi. I am currently conducting research in the area of Business Process Reengineering. The topic is: The effect of Business Process Reengineering on Business Cycles (The case of Kenya |Power and Lighting Company).

The purpose of this letter therefore, is to request you to respond to the attached questionnaire. The information you give will be treated in strict confidence and at no time will your name or that of your organization be referred to directly. The information will be used for academic purposes only.

Thank you very much in anticipation.

Yours sincerely,

GRACE .M. ATEBE

Questionnaire

Kindly follow the instructions to answer the following questions as accurately as possible

PART A

- 1) What is your name (optional) _____

- 2) What is your gender?
Male () Female ()

- 3) What is your age bracket?
() Under 25
() 26 – 35
() 36 – 45
() 46 – 45
() 56 – 65
() Over 65

- 4) What is your marital status?
Single () Married ()

- 5) What is your nationality? _____

- 6) What is your profession? _____

- 7) Where do you reside? _____

8) What is your approximate level of income in Kenya shillings per month?

- Under 20000
- 21000 – 50000
- 51000 – 100000
- Over 100000

9) What is your highest level of educational qualification?

- Primary education
- Secondary education
- Bachelors Degree
- Masters degree and above

10) Do you have an account in your name with KPLC?

- Yes
- No

11) If the answer to Q.10 is yes for how many years have you had the electricity account?

- 0 – 5 years
- 6 – 10 years
- 11 – 15 years
- Over 15 years

PART B

12) Which of the following correctly applies to your electricity meter?

(a) I applied for the meter installation. ()

(b) I was contracted to an already installed meter. ()

13) If (a) above holds true how would you rate the meter application

Process?

() Excellent

() Very good

() Good

() Fairly good

() Poor

14) Has your meter ever been disconnected due to late payment?

() Yes () No

15) If the answer to Q.14 is yes, when was your most recent disconnection?

() 1980 –1985

() 1986 –1990

() 1991 – 1995

() 1996 and later

16) How would you rate the promptness of your disconnection after the due date?

- Extremely prompt
- Very prompt
- Prompt
- Fairly prompt
- Poor

17) On payment of your bill how efficient was the reconnection process?

- Excellent
- Very good
- Good
- Fairly good
- Poor

18) Have you ever had to report an emergency related problem to the KPLC emergency office?

- Yes
- No

19) If answer to Q.18 is yes, when was the most recent report?

- 1980 –1985
- 1986 –1990
- 1991 –1995
- 1996 and later

20) How would you rate the efficiency with which your problem was solved?

- Excellent
- Very good
- Good
- Fairly good
- Poor

21) Has your electricity meter ever been misread or estimated?

Yes No

22) If answer to Q.21 is yes, when was the most recent misreading/estimate?

1980 –1985
 1986 –1990
 1991 –1995
 1996 and later

23) On notifying the KPLC staff of the anomaly, how would you describe the efficiency with which your account was adjusted/normalized?

Excellent
 Very good
 Good
 Fairly good
 Poor

24) How would you rate the accuracy with which your electricity bills were computed over the given periods?

	Extremely accurate	Very Accurate	Accurate	Fairly Accurate	Poor
1980 –1985	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1986 –1990	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1991 – 1995	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1996 and later	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25) How would you rate the accuracy with which your meter was read over the given periods?

	Extremely accurate	Very Accurate	Accurate	Fairly Accurate	Poor
1980 –1985	()	()	()	()	()
1986 –1900	()	()	()	()	()
1991 – 1995	()	()	()	()	()
1996 and later	()	()	()	()	()

26) How would you describe the promptness with which you received your electricity bills over the given periods?

	Extremely Prompt	Very Prompt	Prompt	Fairly Prompt	Poor
1980 –1985	()	()	()	()	()
1986 –1900	()	()	()	()	()
1991 – 1995	()	()	()	()	()
1996 and later	()	()	()	()	()

27) Have you ever had to terminate an electricity account with KPLC (e.g. when moving house)?

() Yes () No

28) If answer to Q.27 is yes, when?

- 1980 –1985
- 1986 –1990
- 1991 –1995
- 1996 and later

29) How would you describe the efficiency with which the termination process was completed and account deposit refunded?

- Excellent
- Very good
- Good
- Fairly good
- Poor

30) Have you personally visited any of the KPLC commercial offices/ banking halls?

- Yes No

31) If answer to Q. 30 is yes when was your most recent visit?

- 1980 –1985
- 1986 –1990
- 1991 –1995
- 1995 and later

32) How long did you have to wait in the KPLC office before you were attended to by the KPLC customer attendants?

- 0 – 5 minutes
- 6 – 10 minutes
- 11 – 15 minutes
- Over 15 minutes

33) Did you have to be referred to any other KPLC office for your problem/query to be solved

Yes No

34) How long did you have to spend in the KPLC office for your problem/query to be solved

- Some minutes
- Some hours
- Some weeks
- Some months

35) How would you rate the efficiency with which you were served?

- Excellent
- Very good
- Good
- Fairly good
- Poor

Thank you for your cooperation.

REFERENCES

A Blueprint for a new Kenya. A publication of the Institute of Economic Affairs. A post Election Action Program (1992).

Barkan J.D. Kenya, "Lessons from a flawed election," Journal of Democracy, Vol. 4, No.3, July 1993.

Barley S. "Technology as an Occasion for Structuring". Administrative Science Quarterly 31, 1986.

Bashein B.J., Markus,M.L., and Riley .P. (1994 Spring) "Preconditions for BPR Success: And How to Prevent Failure," Information Systems Management, 11 (2).

Berger, B., et. al, "Toward a new industrial America ," Scientific American, Vol. 260, No. 6. 1989.

Business Process Analysis - A Letter from America. Professor V.S. Arunachalam and Dr. Easwaran Subramanian. The Robotics Institute Carnegie Mellon University Pittsburgh PA 15213 USA.

Caron M., Jarvenpaa S.L., and Stoddard D.B. (1994, September). "Business Reengineering at CIGNA Cooperation: Experiences and Lessons Learned From the First Five Years. MIS Quarterly.

Daily Nation 21st May 2001.

Daily Nation 26th November 2000.

Daily Nation 29th December 2000.

Daily Nation August 19th 1999.

Daily Nation July 19th 1999

Davenport T.H and Short J.E. (1990), "The New Industrial Engineering: Information technology and Business Process Redesign," Sloan Management Review.

Davenport, T. H, Process Innovation. "Re-engineering work through information technology", Harvard Business School Press, 1993.

Drucker, P. "The Age of Discontinuity, guidelines to our changing society," Heinemann, London, 1969.

Economic Survey 1981.

Gardner, G., "Product development at Chrysler," Lecture notes from Stanford Design Experience, March 1994.

Hall, Rosenthal and Wade, "How to make Reengineering really work," Harvard Business Review, Vol. 71 No. 6, Pergamon Press Ltd, UK, 1993.

Hammer Micheal and Champy James , "Reengineering the Cooperation –"A Manifesto for Business Revolution," Nicholas Brearley Publishing, 1993.

Hammer, M. "Reengineering Work: Don't Automate, Obliterate," Harvard Business Review July- August 1990.

Hooker, J., (1994), "Concurrent Engineering at Caterpillar," Lecture notes from Stanford Design Experience, March 1994. Also from the proceedings of the workshop on "Next generation product development," Daimler Benz Research Center, Ulm, Germany, Dec. 1994.

IEEE Engineering Management Review, Vol. 26, No.3, fall 1998

J.M Piore and C.Sabel (1984), "The Second Industrial Divide: Possibilities for Prosperity." New York Free press.

James Piper, P.E., Ph.D. Business Process Reengineering: "To rethink, redesign processes, you'll need to know what BPR is -- and isn't." Trade Press Publishing Corporation, 1995.

Kenya's Parastatal Reform Action Plan 1991.

King W.R. (1994). "Process Reengineering: The Strategic Dimensions," Information Systems Management, Vol. 11 No.2.

Malhotra N.K. (1996). Marketing Research an Applied Orientation 2nd Ed.

Malhotra Yogesh, Ph.D., "Business Process Redesign.An Overview." IEEE Engineering Management Review, Vol. 26 no. 3 Fall 1998.

Management Committee Meeting Minutes , November 1998.

Maxon R.M, Ndege .P. "The Economics of Structural Adjustments," 1995.

Micheal Hammer and Steven .A. Stanton "The Reengineering Revolution handbook, 1995.

Parasuraman, A. et. Al, " A Multiple Item Scale for Measuring Consumer Preference of Service Quality." Journal of Retailing. Vol. 64 No. 1, 1988.

Roach S.S. "Services Under Seize: The Restructuring Imperative." Harvard Business Review September 1991.

Stoddard, D.B & Jarvenpaa, S.L. "Business Process Redesign: "Tactics for Managing Radical Change." Journal of Management Information Systems. 1995

Technology Foresight (1995), "Progress Through Partnership – Manufacturing, Production, and Business Processes." Office of Science and Technology.

The East African weekly, June 4th – 10th 2001.

Tony Hawkins "An African Test Case for good governance," The Financial Times May 10th 1994.

V.Grover, K.Fiedler, J.Teng, (1994), "Exploring the Success of Information Technology Enabled Business Process Reengineering," IEEE Transaction on Engineering Management Vol. 41 No.3.