STRATEGIC AND OPERATIONAL RESPONSES BY KENYA PETROLEUM REFINERIES LTD (KPRL) TO CHALLENGES IN THE COMPETITIVE BUSINESS ENVIRONMENT.

By

Ndoti Joseph Bale

A Management Research Project Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Business Administration, School of Business, University of Nairobi.

June, 2008
DECLARATION

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

Signed: [Signature]
Ndoti Joseph Bale

Date: 24/11/08
D61/7960/04

This project has been submitted for examination with our approval as University Supervisors.

Signed: [Signature]
Jackson Maalu

Date: 24/11/08

Department of Business Administration
University of Nairobi

Signed: [Signature]
Professor Evans Aosa

Date: 24/11/2008

Department of Business Administration
University of Nairobi
DEDICATION

A study of this nature is usually a product of various efforts. My thanks go to my wife Christine and our children Kelvin, Arnold and Hope, without whose support, this would not have been complete.
ACKNOWLEDGEMENT

A study of this nature is usually a product of various efforts. My thanks go to my supervisors, Jackson Maalu and Professor Evans Aosa for their invaluable support, advise, patience and keenness for detail. I would also like to acknowledge the support and encouragement of various lecturers and classmates.
ABSTRACT

Every organization depends on the external environment for its survival and growth. Today’s business environment is dynamic, complex and highly competitive. Every organization encounters circumstances in which it needs to adapt its strategy to shifting industry and competitive conditions, newly emerging customer preferences and requirements, initiatives of rival firms to grab increased market share, the appearance of fresh opportunities and threats, advancing technology, and other significant events that affect its business.

In view of the menace, the study recommended several measures to be considered by the KPRL environment. Every entity faces the need to speed up the process of adapting new strategies to position itself ahead of competition. Since the biggest threat to the future of refinery is competition, KPRL survival depends on its reaction.KPRL is aiming to maintain the use of its old plant at an estimated cost of US$40 million. Other key factors include training, development, and enhancement of global requirements for safety, health and environment.

The case study sought to identify the challenges facing Kenya Petroleum Refineries Limited (KPRL) in the competitive business environment and to establish the strategic and operational responses by KPRL towards the challenges. Data collection was done through an interview guide designed for the top managers of KPRL and few selected oil marketing companies. Data analysis method applied for this case study is content analysis. This method enabled the researcher to focus on issues that bring out the theme of environmental challenges and the firm’s strategic responses, successes and constraints in adapting to its environment. Research findings from the case study indicate that the biggest threat to the future of the refinery is competition from imported refined petroleum products from the gulf region. The increased capacity and complexity of refineries in the gulf region make imported products cheaper compared to petroleum products refined at the Mombasa refinery. KPRL problems are further compounded by the fact that it is operating an old refinery which is not only inefficient but also lacks thermo cracking facilities resulting in capacity underutilization and high levels of fuel and loss. Pressure is mounting on KPRL to produce cleaner fuel that is friendly to the environment. Currently the refinery is not able to meet existing Kenya Bureau of Standards (KBS) specification for diesel which not only undermines its global competitiveness but also damages the environment.
This study has confirmed that KPRL has put in place strategies to position itself ahead of competitors. Since the biggest threat to the future of refinery is competition, KPRL survival depends on the refinery upgrade project. KPRL is planning to upgrade the 45 year old plant at an estimated cost of US$400 million. Other key measures include training, development and retention of qualified manpower needed to manage product development, production and to, safeguard global requirements for safety, health and environment.

In view of the findings, the study recommends several measures to be considered by the KPRL management. Key among these is the need to speed up the process of admitting new shareholders to replace Shell, BP and Chevron. The KPRL board of directors should also approve and start implementing the 5-year strategic plan (2008-2012) which gives the company long term direction and focus. Finally KPRL management should streamline the decision making process to help the company respond more quickly to the rapidly changing business environment.
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CHAPTER ONE: INTRODUCTION

1.1 Background

1.1.1 Organization and the Environment

Firms are environment dependent. Cole (2004) noted that organizations obtain their inputs such as capital, raw materials and human resources from it and discharge their outputs in the form of products and services to it. The competition for scarce resources among the industry players in the business environment is fierce. Porter (1998) observed that competition is indeed a very complex phenomenon that is manifested not only in other industry players, but also in form of customers, suppliers, substitute products and potential entrants. According to (Johnson et al., 2005), a wide range of environmental influences can affect organization strategies and performance. To ensure survival and success, firms need to develop capability to manage threats and exploit emerging opportunities promptly. This requires formulation of strategies that constantly match capabilities to environmental requirements. Due to the dynamic nature of the business environment, budget-oriented planning or forecast based planning methods are insufficient for large corporations to survive. By engaging in strategic planning organizations are able to define their business objectives more clearly and assess both the internal and external situation to formulate strategy, implement the strategy, evaluate the progress, and make adjustments as necessary to stay on track.

Murimi (2005) noted that every company encounters occasions in which it needs to adapt its strategy to shifting industry and competitive conditions, newly emerging buyer preferences and requirements, the initiatives of rival firms to grab increased market share, the appearance of fresh opportunities and threats, advancing technology, and other significant events that affect its business. Firms often respond to such environmental
changes through strategic responses. Pearce and Robinson (2005) define strategic responses as a set of decisions and actions that result in the formulation and implementation of plans designed to achieve a firm's objectives.

Ansoff (1988) noted that the strategic aggressiveness (both technological and marketing) and the components of capability (managers and organizational climate, competence and capacity) must match the level of environmental turbulence in which the organization competes. Real time strategic management is a recent concept in the growing body of knowledge of strategic management. According to Ansoff (1988), it refers to the adaptation of strategic management to the pace of changes or turbulence in the environment so that the firm responds as fast as the environment changes. According to Hamel and Prahalad (1994), real time management creates new channels for interactive communications within the company with customers and with suppliers, business partners, others in the external environment in product development, marketing, delivery services and technical support. Thus the ability of the company to manage its operations in real time increases the competitiveness of the company.

Strategic responses differ from operational responses in many ways. Pearce and Robinson (2005) noted that while operational responses are short-term and more concerned with efficiency of operations, strategic responses are long-term in nature and embrace the entire organization. Strategic responses also involve large amounts of resources and decisions relating to them are usually made at corporate and business levels.
1.1.2 The Kenyan Petroleum Sector

The Kenyan business environment has been undergoing drastic changes and challenges for some time now. In the early 1990s the government of Kenya embraced market-based reforms. Consequently the liberalization Act was passed by Parliament in 1992. The government policy on liberalization and privatization was articulated in the sector policy paper (government of Kenya (GOK), 1996/8). This policy document outlined the reform measures to be undertaken in all sectors of the economy in order to stimulate growth and development specifically through the privatization of state owned enterprises.

According to the Petroleum Institute of East Africa (2006), the liberalization of the Petroleum Sector in Kenya started in October 1994. However while the pricing of petroleum products in the country was deregulated in 1994, the supply of the commodity remained controlled by the government. Legal notice no.31 dated 18th April, 2006 states that “any person engaged in the importation of refined petroleum products for use in Kenya, other than liquefied petroleum gas, bitumen and low sulphur fuel oil shall refine such minimum quantities of petroleum crude oil as the Minister may, from time to time, prescribe, at the Kenya Petroleum Refineries Ltd” (GOK, 2006, p.252). Once that condition is satisfied the balance can be imported as finished products. Through this legislation a minimum of 1.6 million tones of crude are processed at a fee currently set to provide break even financial performance for KPRL and cater for care and maintenance activities of the plant.

According to the PIEA (2007), there more than thirty oil marketing companies that are licensed to operate in Kenya. However the market is dominated by multinational oil marketing companies. Table 1 shows the Kenya oil industry sales market share for the year
The competition for survival among the players in the oil industry is very intensive. The industry has witnessed mergers, acquisitions, entry of new players in the market and others quitting the market altogether.

Table 1: Kenya Oil Industry Sales Market Share in the year 2006

<table>
<thead>
<tr>
<th>Name of the Company</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell/BP</td>
<td>19.61%</td>
</tr>
<tr>
<td>Kobil</td>
<td>17.68%</td>
</tr>
<tr>
<td>Total Kenya</td>
<td>17.12%</td>
</tr>
<tr>
<td>Chevron</td>
<td>14.24%</td>
</tr>
<tr>
<td>Mobil Oil/ Olibya</td>
<td>10.89%</td>
</tr>
<tr>
<td>NOCK</td>
<td>4.31%</td>
</tr>
<tr>
<td>Kenol</td>
<td>2.87%</td>
</tr>
<tr>
<td>GAPCO</td>
<td>2.78%</td>
</tr>
<tr>
<td>Triton</td>
<td>1.95%</td>
</tr>
<tr>
<td>Bakri International</td>
<td>1.49%</td>
</tr>
<tr>
<td>Oilcom</td>
<td>1.33%</td>
</tr>
<tr>
<td>Petro</td>
<td>1.21%</td>
</tr>
<tr>
<td>Metro Petroleum</td>
<td>1.07%</td>
</tr>
<tr>
<td>Galana Oil</td>
<td>0.93%</td>
</tr>
<tr>
<td>Dalibit Petroleum</td>
<td>0.67%</td>
</tr>
<tr>
<td>Engen</td>
<td>0.67%</td>
</tr>
<tr>
<td>Tecaflex</td>
<td>0.48%</td>
</tr>
<tr>
<td>Gobal Petroleum</td>
<td>0.22%</td>
</tr>
<tr>
<td>Others</td>
<td>0.46%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>


On 14th November 2006, the Kenyan parliament passed a motion to amend the Petroleum Act to enable the Minister for Energy introduce price controls (Petroleum Institute of East Africa (PIEA), 2007). According to PIEA (2007), the Energy Act 2006 became operational at the beginning of July 2007 and gives the Minister for Energy powers to intervene when he is convinced that there is unfair rise in petroleum prices.

The pressure from civil societies and governments is mounting all over the world to provide environmentally compliant products. Globally there is a shift away from lead
additives to other solutions in order to obtain the required octane levels for environmental and health reasons. The World Bank has proposed that the maximum lead level for premium gasoline in Sub-Saharan Africa should not exceed 0.15 grams per litre. The maximum sulphur content level for diesel is proposed at 0.05 percent (The East African, February 7-13, 2005, p33).

“As the race for scarce fossil fuel reserves tightens globally, international oil companies are turning to Kenya as an oil exploration frontier” (Daily Nation, November 17, 2006, p.31). In their commodity analysis report for the month of October, Standard Chartered Bank (2007) noted that the new United States (US) sanctions against Iran have added to geopolitical concerns in the oil market, pushing the price of the benchmark US crude, West Texas Intermediate (WTI), decisively above the USD 90 per barrel (pb).

“Iran is OPEC’s second largest producer, providing 3.9 million barrels per day (mbd) of crude in September, which represents 13% of OPEC output and 4.6% of global output” (Standard Chartered Bank, October, 2007, p.2). The risk to the oil markets is either that Iran retaliates by limiting oil exports, or that it signals the beginning of a more aggressive approach to Iran to end its uranium enrichment programme. The situation is unlikely to be quickly resolved. With Turkey also pushing to step up military action in Northern Iraq, and calling for US support, the situation may get worse.

According to the PIEA (2007), refining capacity has not kept pace with oil product demand for the last few years a legacy of years of poor refining margins and underinvestment since the 1980s. However the good news is that refining capacity growth is projected to outpace demand in 2008 and 2009.
Since the construction of the Mombasa refinery in 1963, the total national demand for petroleum products is supplied through the refining of petroleum crude at KPRL and the remaining balance representing 50% of the total demand is supplied through importation of finished products. In view of the global and local changes affecting the oil and gas industry, KPRL is facing numerous challenges such as capacity underutilization and the need to comply with health, safety and environmental requirements. The government of Kenya owns 50% shareholding KPRL while the remaining balance is shared among Chevron, Shell and BP. According to the Petroleum Institute of East Africa (2007) the ownership of Africa’s oil refineries needs to be rationalized as it was a concern that big oil companies were withdrawing from oil refining in the continent. Indeed Shell, Chevron and BP are divesting from KPRL. It is feared that governments and donors often undervalue the benefits, both financial and socio-economic, of having a refinery and the constant pressure to close them could lead to supply problems.

1.2 Statement of the problem

Cole (2004) noted that every organization depends on the external environment for its survival and growth. Today’s business environment is dynamic, complex and highly competitive. According to Murimi (2005) every organization encounters circumstances in which it needs to adapt its strategy to shifting industry and competitive conditions, newly emerging buyer preferences and requirements, the initiatives of rival firms to grab increased market share, the appearance of fresh opportunities and threats, advancing technology, and other significant events that affect its business. Ansoff (1988) observed that the strategic aggressiveness (both technological and marketing) and the components of improvement refinery upgrade programme for each country (The East African, February 3-
capability (managers and organizational climate, competence and capacity) must match the level of environmental turbulence in which the organization competes.

The Kenyan business environment has experienced tremendous changes particularly from early 1990s when Kenya embraced market-based economy. We have witnessed liberalization of the economy through deregulation of prices, privatization of the public sector and increased competition in the business environment. It has become necessary for organizations such as KPRL to continuously assess the external environment and respond appropriately in order to remain relevant.

The government of Kenya deregulated the petroleum sector in 1994. However KPRL still enjoys government protection requiring oil marketing companies to process at KPRL a minimum of 1.6 million tones of crude oil annually representing 50% of the national demand for petroleum products. This was essentially to safeguard the supply of LPG, meet local fuel demand and give KPRL enough time to develop and implement its modernization plans. Some of the industry players are pushing the government to remove the legislation requiring them to process certain quantities of crude at KPRL, a move that could change the way KPRL has been operating over the last 40 years.

KPRL is under immense pressure to produce cleaner fuels. Unfortunately KPRL is still operating an aging refinery which was designed to operate on hydro skimming technology which lacks desulphurization facilities. Globally there is an urgent need for refineries all over the world to invest in new processes and technologies that will help in production of unleaded petrol and low-sulphur diesel. In Asia, studies are under way to establish the least investment refinery upgrade programme for each country (The East African, February 7-
This is necessary to keep pace with environmental regulations across the world. Lead is eventually being outlawed in most markets in the world as away of cleaning up the atmosphere especially in cities with high traffic volumes.

Studies have been conducted about the strategic responses by some Kenyan companies in the competitive business environment particularly after the liberalization of the economy. Among the recent studies done are by Kombo (1997), Abdullahi (2000), Njau (2000), Chepkwony (2001), Kandie (2001), Isaboke (2000), and Mokaya (2003). Despite the studies that have been done to establish the strategic responses, there is no case study done for the Kenya Petroleum Refineries Ltd.

KPRL is unique in context in several ways. It is the only refinery not only in Kenya but also in the entire East African region and has been in existence for over 40 years. The Kenyan government owns 50% of KPRL shareholding and exerts great influence in the company’s strategy and policies. The public service culture inherent in government controlled entities is likely to play a major role in its response to competitive forces. KPRL is therefore likely to respond in a unique way to changes in the competitive environment.

1.3 Objectives of the study

i. To identify the challenges facing KPRL in the competitive business environment.

ii. To establish the strategic and operational responses by KPRL towards the challenges.
1.4 Scope of the Study

This is a case study about KPRL. It aims at identifying challenges and establishing the strategic and operational responses of KPRL to these challenges. In order to get a balanced view, the study will obtain information from both the management of KPRL and oil marketing companies.

1.5 Importance of the Study

The study will help the management of the company in the strategic management process. It will certainly highlight best strategic planning practices which can be adopted for the benefit of the company. There is a benefit to customers and the shareholders too. The business of strategy is to create sustainable competitive advantage which is seen by the customers through better products and services. Sustainable competitive advantage maximizes shareholders wealth.

The ministries of energy and finance which are both represented in the KPRL board of directors have been very keen on the performance of the refinery chiefly because it is a strategic asset of the government. It is in the interest of Kenyans that the government makes the most informed decisions on any issues that have a direct impact on the economy of the country. This study provides additional information which is useful in decision making.

To develop local case studies and successful business models for future management studies. Strategic management in Kenya is still a relatively new concept to many organizations and it's only after the liberalization of the economy in early 1990's that this
subject started gaining prominence. It is interesting to show the world how Kenyan firms are embracing this concept in the rapidly changing business environment.

The study of strategy and the development of the micro-economic intellectual foundations of strategic thinking can be traced back to Chandler who was active and influential from the late 1950s. His 1962 book, *Strategic and Structure*, said that corporations should develop their strategy before deciding their structure. He defined strategy as the setting of long-term goals and objectives, the determination of courses of action, and the allocation of resources to achieve the objectives. Holf and Schendel (1986) prefer to separate goal-setting from strategy formulation and they see strategy as a pattern of present and planned resource deployment and entrepreneurial initiatives that indicates how the organization will achieve its objectives. According to Porter (1996), strategy is the creation of a unique and valuable position, involving a different set of activities while Ansoff (1965) defines strategy in terms of organization’s product scope.

The subject of strategy continues to generate interest from leading authors in strategic management. Recently one of the leading authors defined strategy as the direction and scope of an organization over the long-term which achieves advantages in a changing environment through its configuration of resources and competences with the aim of fulfilling stakeholder expectations (Johnson et al., 2005).

Pearce and Robinson (2001) view strategy in terms of large-scale, future-oriented plans that interact with the competitive environment to achieve company objectives. They further suggest that a strategy reflects a company’s assessment of how, when and where it should compete, against whom it should compete, and for what purposes it should compete.
CHAPTER TWO: LITERATURE REVIEW

2.1 Concept of Strategy

The study of strategy and the development of the micro-economic intellectual foundations of strategic thinking can be traced back at least to Chandler who was active and influential from the late 1950s. His 1962 book, strategy and structure, said that corporations should develop their strategy before deciding their structure. He defined strategy as the setting of long-term goals and objectives, the determination of courses of action, and the allocation of resources to achieve the objectives. Hofer and Schendel (1986) prefer to separate goal-setting from strategy formulation, and they see strategy as a pattern of present and planned resource deployments and environmental interactions that indicates how the organizations will achieve its objectives. According to Porter (1998), strategy is the creation of a unique and valuable position, involving a different set of activities while Ansoff (1965) defines strategy in terms of organization's product scope.

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According to Murimi (2005) a company’s strategy represents management’s answers to such fundamental business questions as to whether to concentrate on a single business or build a diversified group of businesses, whether to cater to abroad range of customers or focus on particular market niche, whether to develop a wide or narrow product line, whether to pursue a competitive advantage based on low cost or product superiority or unique organizational capabilities, how to respond to changing buyer preferences, how big a geographic market to cover, how to react to newly emerging market and competitive conditions, and how to grow the enterprise over the long term. Thus a strategy reflects managerial choices among alternatives and signals organizational commitment to particular products, markets, competitive approaches, and ways of operating the enterprise.

2.2 Strategy and the Environment

Kombo (1997) found that it is important for organizations to understand the environment so that they act proactively and not reactively to changes that are taking place in their operational areas. Dawar and Frost (1999) noted that by understanding the basis for competitive advantage in your industry, you can better appreciate the actual strengths of your rivals. They further observed that by assessing where your own competitive assets are most effective, organizations can gain insights into the breadth of business opportunities available.

2.2.1 Understanding the Business Environment

Johnson et al (2005) observed that the organization exists in the context of a complex political, economic, social, technological, environmental and legal world. This environment changes and is more complex for some organizations than for others. Many of those
variables in the external environment will give rise to opportunities and others will exert threats on the organization or both.

Most commentators feel that in today’s turbulent business environment the best scanning method available is continuous scanning. This allows the firm to act quickly, take advantage of opportunities before competitors do and respond to environmental threats before significant damage is done.

Johnson et al (2005) summarizes in a diagrammatic form his understanding of the business environment as shown in Figure 2. He noted that environmental influences and trends can be thought of as layers around an organization. The most general layer is the macro-environment where an understanding of political, economic, social, technological, environmental and legal influences (PESTEL) can provide an overall picture of the variety of forces at work around an organization. Within the more general environment are industries or sectors. This is the group of the organizations producing the same products or services. The most immediate layer of the environment consists of competitors and markets. The concept of strategic groups can help with identification of both direct and indirect competitors.
2.2.2 The Remote Environment

The remote environment is also referred to as macro-environment and is made up of political, economic, social, technological and legal factors. These factors exert pressure on the organization and affect the strategic development and implementation process.

Political factors define the legal and regulatory parameters within which firms must operate. Johnson et al (2005) observed that political constraints are placed on firms through fair trade decisions, laws, tax policies, minimum wage legislation, pollution and pricing policies and many other actions aimed at protecting employers, consumers, the general public and the environment. These views are supported by Khanna et al (2005) who noted that countries have vibrant democracies with checks and balances. They also observed that companies can count on rule of law and fair enforcement of legal countries.
Pearce and Robinson (2005) noted that on both the national and international level, managers must consider the general availability of credit, the level of disposal income and the propensity of people to spend, prime interest rates, inflation rates and trends in the growth of the gross national product.

The social factors that affect a firm involve the beliefs, values, attitudes, opinion and life styles of persons in the firm's external environment as developed from cultural, ecological, demographic, religious, educational and ethnic conditions (Pearce & Robinson, 2005, p.79). They further observed that like other forces in the remote environment, social forces are dynamic, with constant change resulting from the efforts of individuals to satisfy their desires and needs by controlling and adapting to environmental factors. Powerful nongovernmental organizations (NGOs) influence corporate policies on social and environmental issues (Khanna et al, 2005, p.68). Kanter (1999) found that companies are moving beyond corporate social responsibility to corporate social innovation whereby community needs are viewed as opportunities to develop ideas and demonstrate business technologies, to find and serve new markets.

Dawar and Frost (1999) observed that as protectionist barriers disintegrate in emerging markets around the world, multinational companies are moving in very fast to find new opportunities for growth. They also found out that foreign rivals wield array of advantages such as advanced technology and powerful management skills compared to local companies. Investment in new technologies is necessary to the survival of companies in emerging markets.
2.2.3 Strategy, Environment and Company Capability

According to Ansoff and McDonnell (1990) strategic diagnosis is necessary to determine the changes that have to be made to a firm's strategy and its internal capability in order to assure the firm's success in the environment. Illustration in figure 1 explains that when there is a shift in environment E1 to E2 this requires a shift in the firm's strategy from S1 to S2. A shift in strategy will be possible only if the organization capability is shifted from capability C1 to C2.

The environment dependence phenomenon shows that whenever environmental changes occur, the organization needs to adjust its strategy as well as its internal capability. According to Ansoff and McDonnell (1990) the organization needs to adjust its strategy and organization capability if it has to survive in the long term. Thus whenever the external environment changes it is essential that an organization changes both its strategy and internal capability to remain viable.

![Diagram](https://via.placeholder.com/150)

**Figure 2** Environment, Strategy and Company Capability


The key to figure 1 above is defined below as follows:

- **E1** — Present environment
- **E2** — Future environment
- **△E** — Shift in environment turbulence
- **S1** — Present strategy
- **S2** — Real-time response
- **△S** — Strategy transformation
- **C1** — Internal capability
- **C2** — Capability transformation
- **△C** — Capability transformation
The environment dependence phenomenon shows that whenever environmental changes occur, they create pressure for change in both the organization's strategy as well as its internal capability. According to Ansoff and McDonnell (1990) the organization needs to make necessary adjustment if it has to survive in the long term. Thus whenever the external environment changes, it is expected that an organization changes its strategies and internal capabilities.

2.2.4 Strategic Responses

Within the managerial subsystem are two principal managerial regimes: strategic management and operations management. According to Ansoff and MacDonnell (1990) the strategic management activity is concerned with establishing objectives and goals for the organization, and with maintaining a set of relationships between the organizations and the environment which enable it to pursue the objectives that are consistent with the organizational capabilities, and continue to be responsive to environmental demands. Ansoff et al (1990) further observed that one end - product of strategic management is a potential for future fulfillment of the organization's objectives which consists of the input to the firm (raw materials, financing, manpower and information), output (finished products and / or services) and asset of social behaviour rules which permits the organization to continue meet to meet its objectives.
Johnson et al (2005) noted that strategic response is concerned with the overall purpose and scope of the business stakeholder expectations while operational response focuses on resources, processes, people etc. According to Kandie (2003) strategic responses require a systematic approach to determine the changes that have to be made to a firm’s strategy and its internal capability in order to assure the firm’s success in the environment.

In his earlier studies on corporate strategy, Ansoff (1988) viewed organization’s strategic responses in terms of product and market development. Ansoff developed a product/market growth matrix that suggests that a firm’s attempts to grow depends on the way it markets new or existing products in new or existing markets. Figure 3 summarizes product /market matrix developed by Ansoff.


A market penetration marketing strategy is very much about focusing on markets and products a firm knows well whereas a market development strategy is a growth strategy where the business seeks to market existing products in new markets. Product development strategy is the name given to a growth strategy where a business aims to introduce new or modified
Diversification is a growth strategy where a business markets new products in new markets.

Porter (1998) argued that a firm’s strategic responses ultimately fall into one of two headings: cost advantage and differentiation. By applying these strengths in either a broad or narrow scope, three generic strategies result: cost leadership, differentiation and focus. Cost leadership requires a firm to become the low cost producer in its industry. Current trends in the petroleum industry have been geared towards pursuing this form of competitive advantage. Differentiation involves the creation of a unique product or service, different from competitors offering. Focus strategy concentrates on a narrow segment and within that segment attempts to achieve either cost advantage or differentiation. A firm using a focus strategy often enjoys a high degree of customer loyalty, and this entrenched loyalty discourages other firms from competing directly. Figure 4 summarizes Porters Generic Strategies.

Figure 4 Porter’s Generic Strategies

<table>
<thead>
<tr>
<th>Target Scope</th>
<th>Advantage</th>
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<tbody>
<tr>
<td>Broad (Industry Wide)</td>
<td>Cost Leadership Strategy</td>
</tr>
<tr>
<td></td>
<td>Differentiation Strategy</td>
</tr>
<tr>
<td>Narrow (Market Segment)</td>
<td>Focus Strategy (Low cost)</td>
</tr>
<tr>
<td></td>
<td>Focus Strategy (differentiation)</td>
</tr>
</tbody>
</table>


In Kenya many organizations have adopted different strategic responses to address challenges from the external business environment. In a study on strategic responses of East African Breweries undertaken by Njau (2000), he observed that a change in the competitive position of an organization is dependent on strategies adopted by it. Kombo (1997) also noted that firms in the motor vehicle industry made adjustments by introducing...
new technologies in the product development, differentiation, segmentation and improved customer services.

2.2.5 Operational Responses

According to Ansoff and MacDonnell (1990) while strategic management is concerned with creating a strategic position which assures future environmental viability of the organization, operations management is concerned with exploiting the present strategic position to achieve organization objectives. In the business firm the strategic manager is concerned with continued profitability potential, the operations manager is concerned with converting the potential into actual profits. In operations management the major activity is to establish and bring about levels of organizational output which will best contribute to the objectives. Ansoff and MacDonnell (1990) further observed that the end-product of operations activity is delivery of products or services to the environment in exchange for rewards. In the firm the contributing activities are purchasing, manufacturing, distribution, marketing, research and development.

Pearce and Robinson (2005) have similarly defined operational responses as functional tactics that implement business strategies. Functional tactics are the key, routine activities that must be undertaken in each functional area, i.e. marketing, finance, production/operations, research & development (RD), and human resources management to produce business products and services. In other words functional tactics translate thoughts (grand strategy) into action designed to accomplish specific short-term objectives. Every value chain activity in a company executes functional tactics that support the business’s strategy and help accomplish strategic objectives. Pearce and Robinson (2005) further emphasized that there is need to ensure that decision making is consistent with mission, strategy, and tactics of the business while at the same time allowing considerable latitude to
operating personnel. Just as in strategic management, operations management involves creation and maintenance of appropriate organizational architecture, selection and development of individuals with the appropriate motivations and skills. But these are quite different for the two types of management. Johnson et al (2005) noted that strategic management is change-seeking, flexible, and loosely structured, while the operations management is change resistant, efficiency seeking and highly structured.

According to Fred (2005) in all but the smallest organizations, the transition from strategy formulation to strategy implementation requires a shift in responsibility from strategists to divisional and functional managers. Implementation problems can arise because of this shift in responsibility, especially if strategy formulation decisions come as a surprise to middle and lower-level managers. Fred (2005) further noted that annual objectives are essential for strategy implementation because they serve as guidelines for action, directing and channeling efforts and activities of organization members. They provide a source of legitimacy in an enterprise by justifying activities to stakeholders. They serve as an important source of employee motivation and identification and also provide basis for organization design. Figure 5 illustrate how the company could establish annual objectives based on long-term objectives.
Figure 5  Relationship between Long-Term and Short-Term objectives


2.3 Foundations for Strategic and Operational Responses

The foundation for strategic and operational responses depends on the organization’s capability. Strategic capability is the adequacy and suitability of the resources and competences of an organization for it to survive and prosper (Johnson et al., 2005, p.117).

2.3.1 Resources and Core Competences

The success of organization strategic and operational responses to the competitive environment depends very much on its strategic capability. Firm’s resources may either be tangible or intangible. Tangible resources are the physical assets of an organization such as property, plant and equipment whereas intangible resources are non-physical assets such as goodwill, knowledge and information. According to (Johnson et al., 2005) the efficiency and effectiveness of physical or financial resources, or the people in an organization, depends on not just their existence but how they are managed, the cooperation between people, their adaptability, their innovatory capacity, the relationship with customers and suppliers and the experience and learning about what works well and what does not.
Prahalad and Hamel (1990) coined the term core competences, or the collective learning and coordination skills behind the firm’s product lines. Core competences are the activities and processes through which an organization deploys its resources effectively. Prahalad and Hamel (1990) made the case that core competencies are the source of competitive advantage and enable the firm to introduce an array of new products and services. They further suggest that a corporation should be organized into a portfolio of core competencies rather than a portfolio of independent business units. Business unit managers tend to focus on getting immediate end–products to market rapidly and usually do not feel responsible for developing company-wide core competencies. Consequently without, the incentive and direction from corporate management to do otherwise, strategic business units are inclined to under invest in the building of core competencies.

2.3.2 Organizational Knowledge and Learning

"Winning in business today demands innovation" (Khanna et al, 1999, p.123). She found that corporations spend billions of dollars each year trying to identify opportunities for innovation. “They set up learning laboratories where they can stretch their thinking, extend their capabilities, experiment with new technologies, get feed back from early users about product potential and gain experience working with underserved and emerging markets” (Khanna et al, 1999, p.123). According to Johnson et al (2005) the ability to generate and integrate knowledge from both inside and around the organization is vital because it helps the organization to develop and deliver new product or service features.
2.3.3 Strategic Leadership

Leadership is the process of influencing an organization (or group within an organization) in its efforts towards achieving an aim or goal. According to Johnson et al (2005) a leader is not necessarily someone at the top of an organization, but rather someone who is in a position to have influence. Charismatic leaders are mainly concerned with building a vision for the organization and energizing people to achieve it and are therefore usually associated with managing change. On the other hand instrumental or transactional leaders focus more on designing systems and controlling the organization's activities and are more likely to be associated with improving the current situation. Sirkin et al (2005) found that for over three decades, academics, managers and consultants have sung the praises of leaders who communicate the vision and walk the talk in order to realize the objectives of their organizations.

2.3.4 Organization Culture

Strategic and operational responses are greatly influenced by the organization culture. According to Solomon (2002) organization culture symbolizes the personality of that organization. He defines culture as the accumulation of shared meanings, rituals, norms and traditions among the members of an organization or society. He found that the importance of these cultural expectations is often only discovered when they are violated. As organizations increasingly make visible their carefully considered public statements of their values, beliefs and purposes—for example, in annual reports, mission or value statements and business plans—there is danger that these are seen as useful and accurate descriptions of the organizational behaviors and paradigm (Johnson et al., 2005).
This chapter contains the steps followed in the execution of the study. They include defining the scope of the study, the population, data collection and data analysis methodology.

3.1 Research Design

The research problem presented by the researcher could best be studied using the case study method. The research design applied gave a detailed account of the strategic and operational challenges facing KPRL in the competitive business environment plus an in-depth analysis of the strategic and operational responses employed by the company. According to Yin (2002) a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context. He noted that case studies can be based on any mix of quantitative and qualitative evidence.

3.2 Data Collection

Data collection was done through an interview guide (Appendix 2 &3) designed for the top managers of KPRL and few selected oil marketing companies (Appendix 1). The top management of the company consists of the general manager and functional managers who are instrumental in the strategic planning and implementation process. The respondents taken from the oil marketing companies is made up of companies having signed processing agreement with KPRL. This was necessary to get unbiased opinion about the challenges facing KPRL and the strategic and operational responses being put in place.

The first interview guide for the KPRL management is intended to capture detailed information about KPRL from the general manager and the functional managers (finance,
engineering, manufacturing & technology, commercial, human resources, safety and refinery development). The interview guide was used to seek information from the respondents about the challenges affecting the organization as whole and how KPRL is responding to them. Parasuraman (1986) observed that personal interviews have the potential of yielding the highest quality of data compared to other modes because additional information may be collected in the course of the interview. Secondary data from the organization’s annual reports, internal magazines and booklets were also utilized.

4.2 Challenges Facing KPRL

Data from the oil marketing companies was collected using an interview guide subdivided into two parts. Part one of the interview guide seeks background information about the respondent. The second part focuses on the challenges facing KPRL and the responses to these challenges.

3.3 Data Analysis

The data collected from KPRL and oil marketing companies was mainly qualitative in nature. The data analysis method most appropriate for this is content analysis. This method enables the researcher to focus on issues that bring out the theme of environmental challenges and the firm’s strategic responses, successes and constraints in adapting to its environment. Researchers quantify and analyze the presence, meanings and relationships of such words and concepts, then make inferences about the messages with the texts, the audience, and even the culture and the time of which these are part. Among the previous studies that used this method are those carried out by Kandie (2001) and Njau (2000).
CHAPTER FOUR: FINDINGS AND DISCUSSION

4.1 Introduction

This chapter dealt with data analysis and interpretation of the research findings. The data in this study was summarized in the form of tables. KPRL is facing challenges in the competitive business environment. Set out below is a review of how KPRL has been responding to these challenges.

4.2 Challenges Facing KPRL

KPRL has been operating for over 45 years now since 1963 when the first plant was commissioned. Additional plant was set up in 1974 to double the processing capacity. The liberalization of the Kenyan economy in 1994 coupled with unstoppable global requirements for cleaner fuels and increasing demand for petroleum have put KPRL in an increasingly difficult and challenging environment. Consequently KPRL is expected to put in place strategies that respond to the dictates of the business environment in order to survive and compete effectively. Cole (2004) noted that all organizations are dependent on the environment for their inputs and outputs.

4.2.1 Strategic Challenges Facing KPRL

Strategic challenges affect the long term viability of the organization. All the respondents interviewed acknowledged that the biggest threat to the future of the refinery is competition from imported, fully refined petroleum products from the Middle East countries. Oil marketing companies observed that the increased capacity and advanced technology of refineries in the gulf region make imported petroleum products cheaper compared to petroleum products refined at KPRL. Through increased operating capacity these refineries enjoy economies of scale that reduces the unit operating cost which is passed to the
customer through lower prices. Porter (1998) observed that competition is indeed a complex phenomenon that is manifested not only in other industry players, but also in form of customers, suppliers, substitute products and potential entrants.

Although KPRL is still enjoying government protection through a legislation requiring oil marketing companies to process certain minimum quantities of crude oil through the Mombasa refinery, the compliance rate is poor. Several oil marketing companies particularly the new players fail to comply with the legal requirement instead opting to import fully refined products. This situation has limited the revenue base of KPRL making it increasingly difficult to make profits. Table 2 summarizes KPRL financial performance for the last six years.

Table 2: KPRL Financial Performance

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>KSh'm'</td>
<td>KSh'm'</td>
<td>KSh'm'</td>
<td>KSh'm'</td>
<td>KSh'm'</td>
<td>KSh'm'</td>
</tr>
<tr>
<td></td>
<td>2,098</td>
<td>2,164</td>
<td>2,358</td>
<td>2,143</td>
<td>1,976</td>
<td>2,067</td>
</tr>
<tr>
<td>Operating Costs</td>
<td>1,899</td>
<td>2,095</td>
<td>2,621</td>
<td>2,066</td>
<td>1,972</td>
<td>2,162</td>
</tr>
<tr>
<td>Profit After Tax</td>
<td>137</td>
<td>19</td>
<td>(244)</td>
<td>68</td>
<td>14</td>
<td>(80)</td>
</tr>
</tbody>
</table>


It can also be argued that the legal protection may have contributed to the complacency of KPRL towards putting in place strategies that respond fast to changing customer needs and expectations. According to Ansoff and McDonnell (1990) strategic diagnosis is necessary to determine the changes that have to make to a firm’s strategy and its internal capability in order to assure the firm’s success in the environment.
According to the KPRL top management, the future of the refinery depends on the modernization plans that will make it more efficient and competitive. The greatest challenge facing KPRL is getting the necessary capital needed to finance the refinery upgrade project estimated to cost about US$ 400 million. Different shareholder strategies and priorities are to blame for indecision about the refinery upgrade project. Shell, BP and Chevron have opted to divest from KPRL. Given that the government owns 50% of KPRL shareholding it exercises great influence in determining the strategic direction of the company. Government bureaucracy slows down decision making process thereby reducing the benefits of real time strategic management process. Hamel and Prahalad (1994) noted that real time management creates new and faster channels for interactive communications within the company, with customers, suppliers and others in the external environment in product development, marketing, service delivery and technical support.

The government protection requiring oil marketing companies to process crude oil through the Mombasa refinery has given KPRL a life line. If this protection is removed before the refinery upgrade is done, then the future of the refinery will be greatly jeopardized. This is because without guaranteed revenue it is likely to operate well below the threshold operating capacity needed to make the refinery operations economical. Other challenges include the expected change in the shareholding structure that will usher in new shareholders to replace Shell, Chevron and BP companies which are divesting from KPRL. The change in shareholding comes with uncertainties regarding the strategic and operational responses to be put in place by the new board of directors.
4.2.2 Operational Challenges Facing KPRL

Operational challenges affect the implementation of a firm’s strategies. In other words, operational challenges hinder an organization from exploiting the present strategic position to achieve organization objectives. KPRL is operating an old refinery which was constructed and commissioned in 1963 and further expanded in 1974. Currently the refinery is operating on hydro-skimming refining technology which lacks desulphurizing facilities resulting in capacity underutilization and high levels of fuel and loss. Currently the refinery is not able to meet existing Kenya Bureau of Standards (KBS) specification for diesel. The diesel specification for Kenya is 0.5 % sulphur, however KPRL produces diesel with 1% sulphur due to lack of desulphurization facilities. Product specifications in Kenya have generally lagged behind the global trends, a situation that is exerting pressure on the refinery to produce cleaner fuels.

Promoting employee diversity in a male dominated refinery is one of the greatest challenges facing human resources development at KPRL. The refinery facilities are technologically complex and require highly skilled staff for their operation and maintenance. Traditionally refinery positions in engineering and production have been a preserve of male employees. The management of KPRL was challenged by the board of directors to review this practice and ensure equal employment opportunities to prospecting employees regardless of sex. Another problem facing KPRL is high staff turnover particularly in production department who are constantly poached by the gulf refineries. It takes at least five years to train a plant operator to global acceptable standards.

The petroleum refining process is becoming very expensive due to the increasing cost of water, electricity and processing chemicals. According to KPRL, records the company
4.2.2 Operational Challenges Facing KPRL

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The petroleum refining process is becoming very expensive due to the increasing cost of water, electricity and processing chemicals. According to KPRL records the company
consumes over 2,000 cubic meters of water and about 8 megawatts of electricity per day, translating to about KSh 500 million per year. KPRL also experiences power disruptions and water shortages which affect production schedules. Other operational challenges facing KPRL include over reliance on foreign technical support which is not only expensive but also leads to delays when urgent technical solutions are required. In my opinion over forty years of refining experience is probably enough to establish local expertise.

4.3 Strategic Responses
According to Ansoff and MacDonnell (1990) strategic management is concerned with creating a strategic position which assures future environmental viability of the organization. In the business firm the strategic manager is concerned with continued profitability potential, the operations manager is concerned with converting the potential into actual profits.

4.3.1 Production of Unleaded Gasoline
To regain a competitive advantage over imported finished products and improve on the environment conservation efforts, KPRL started producing unleaded gasoline in January 2006. This was in line with the Dakar declaration, which required African governments to switch to unleaded fuels by 31st December, 2005 mainly due to widespread health and environmental concerns. Consequently the plant was modified to start processing unleaded gasoline to comply with the new legislation. While the modification of the plant to produce unleaded gasoline is good news, the respondents acknowledged that it is straining the old refinery. In the long term plant upgrade is necessary in order to sustain the current operations. It can be argued that the measures taken by KPRL to comply with the Dakar declaration were reactive in nature.
As the international momentum towards cleaner fuels is unstoppable there is an indication of the urgency to lower sulphur levels in the country to complying with the global standards set by the World Bank, the World Health Organization (WHO) and the United Nations Environment Programme (UNEP). The Automotive Gas Oil (AGO)/diesel specification for Kenya is 0.5% sulphur, however KPRL produces AGO with 1% sulphur due to lack of desulphurization facilities. According to the respondents the new product specifications recommended by the World Bank target 0.05% sulphur content although there is no dead line set for compliance.

4.3.2 Investment in Products Related Services

The KPRL Management is currently pursuing plans to diversify into other related services. In 2006, the government of Kenya allowed KPRL and Kenya Pipeline Company (KPC) to form joint venture Company that will invest in bulk storage and handling facilities for Liquefied Petroleum Gas (LPG). The estimated cost of the project will be known after the structural design of the facilities and tendering processes are completed before end of the year. This project is expected to be commissioned in the year 2010. The successful completion of this project is expected to generate additional revenues to KPRL and address current safety concerns with regard to existing LPG facilities. This project will also enhance the distribution of LPG in Kenya and reduce the cost of the product to the consumers. This initiative is particularly designed to encourage the people of Kenya use alternative sources of energy to minimize damage to our forests.

In April 2008, the KPRL board of directors approved an electricity generating project for own use and sell the surplus to the national grid. KPRL spends KSh 350 million per year
on electricity. However the power supply to KPRL is sometimes erratic and unreliable. They further noted that by investing in gas turbines KPRL can generate enough power for own use and sell the surplus to the national grid. The design work and tendering processes are already in place now and it is expected that the project will be commissioned in the year 2009.

4.3.3 KPRL Strategic Plan (2008 -2012)

Hofer and Schendel (1986) see strategy as a pattern of present and planned resource deployments and environmental interactions that indicates how organizations will achieve its objectives. For over 40 years, KPRL has been operating without a formal strategic plan. The main reason for this was the uncertainty about the future of the refinery which has been a subject of debate among its shareholders and other stakeholders for a long time. In October 2007 the company began preparing a five year strategic (2008-2012) which was later submitted to the board of directors for approval in 2008. Once it is approved for implementation, it is expected to give the company a new focus and direction. KPRL strategy was prepared in line with the strategy of developing regional refineries by the East African Community (EAC) member states. The strategy for development of regional refineries seeks a harmonized development of refineries and associated supporting infrastructure. It addresses issues pertaining to establishment, location, ownership structure, operational logistics and capacity.

The KPRL strategic plan is expected to address challenges such as product development and quality, regional demand of petroleum products, shareholder value, health, safety and environmental and human resources development. Various options for organizational and ownership structure for future development of the Mombasa refinery and associated.
infrastructure, the resources and capacity requirements focusing on the financing options and human resources requirements have been explored.

Since KPRL refinery is the only refinery in Kenya and the East African region the strategic plan is designed to position it to serve both the domestic market and the surrounding countries of the great lakes region. The Mombasa refinery has an installed capacity of 3.2 million tonnes per year, (70,000 bpd) but currently processes 1.6 million tones. According to the Petroleum Institute of East Africa (2007) the estimated regional demand for petroleum products are 5.7 million tones per year. Table 2 summarizes the volume of crude oil refined at KPRL over the last six years.

Table 3: Volume of Crude Oil Refined at KPRL

<table>
<thead>
<tr>
<th>Throughput</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric Tones (MT)</td>
<td>1,547,000</td>
<td>1,570,000</td>
<td>1,649,000</td>
<td>1,618,000</td>
<td>1,673,000</td>
<td>1,631,000</td>
</tr>
</tbody>
</table>


The current distillation process results in residue yield between 30-70% depending on the crude type. Residue has the least price in the market compared to crude and other petroleum products. Generally, a higher residue yield from a refinery results in reduction in the refinery margin. Consequently, to improve their profitability modern refineries will have a process that will crack the residue and produce the higher valued products such as Liquefied Petroleum Gas (LPG), Kerosene, Premium and Diesel. KPRL is planning for a refinery upgrade that is scheduled to be completed within the five-year strategic plan period. This requires investment in thermal gas oil unit (TGU) with gas oil
hydrodesulphurizing (HDS) facilities. The combination of TGU and HDS facilities will enable the conversion of low valued residue to more oils which have better profit margins. Upgrading the refinery is estimated to cost the company approximately US$ 400 million and will take up to 4 years to complete the project.

KPRL management is planning to fully comply with legislation relating to healthy, safety and environment. KPRL is expecting to commission a waste water treatment plant later this year at an estimated cost of KSh 260 million. This project is expected to reduce water consumption by about 40% and minimize further the toxic levels of the waste water that is drained to the sea. The upgrading of the plant will certainly provide more solutions to some of healthy, safety and environmental concerns regarding the operations of the refinery.

### 4.4 Operational Responses

Pearce and Robinson (2005) defined operational responses as functional tactics that implement business strategies. Functional tactics are the key, routine activities that must be undertaken in each functional area, i.e. marketing, finance, production/operations, research & development (RD), and human resources management to produce business products and services. In other words functional tactics translate thoughts (grand strategy) into action designed to accomplish specific short-term objectives.
4.4.1 Petroleum Refining Process

KPRL processing facilities which include atmospheric distillation, hydro treating and catalytic reforming were set up in 1963 and further expanded in 1974 as summarized in table 3. The plant lacks residue conversion facilities and gas oil treating facilities forcing it to rely on light crude oil to produce petroleum products. Several studies have been undertaken to identify the processes needed for residue conversion in order to improve KPRL’s competitiveness, improve the octane number of the gasoline blending components, the removal of sulphur in diesel and treatment of effluent water and emissions to air. The upgrading of the plant is estimated to cost US$ 400 million. Table 3 summarizes the operating capacity of the two refining plants and other key plant installations as at 30th March, 2008.

<table>
<thead>
<tr>
<th>Plant</th>
<th>Year Installed</th>
<th>Operating Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Distillation Unit 1(CDU1)</td>
<td>1963</td>
<td>5,500 tons/day</td>
</tr>
<tr>
<td>Crude Distillation Unit 2(CDU2)</td>
<td>1974</td>
<td>3,600 tons/day</td>
</tr>
<tr>
<td>Hydro Treating Unit 1</td>
<td>1963</td>
<td>2,200 tons/day</td>
</tr>
<tr>
<td>Hydro Treating Unit 2</td>
<td>1974</td>
<td>1,100 tons/day</td>
</tr>
<tr>
<td>Kero Hydro Treating Unit</td>
<td>1974</td>
<td>800 tons/day</td>
</tr>
<tr>
<td>Platforming Unit 1</td>
<td>1963</td>
<td>450 tons/day @88 Octane</td>
</tr>
<tr>
<td>Platforming Unit 2</td>
<td>1974</td>
<td>600 tons/day @92 Octane</td>
</tr>
<tr>
<td>Bitumen Plant</td>
<td>1963</td>
<td>135 tons/day</td>
</tr>
</tbody>
</table>

Source: Kenya Petroleum Refineries Ltd, Assets Register, December 2007
4.4.2 Health, Safety, Security and Environment

The management of KPRL conceded that product quality specifications in Kenya have generally lagged behind the global trend. However in line with the Dakar declaration, Kenya switched to the use of unleaded gasoline with effect from January, 2006. Consequently KPRL modified the plant to start processing unleaded gasoline to comply with the new legislation. The Automotive Gas Oil (AGO) specification for Kenya is 0.5% sulphur, however KPRL produces AGO with 1% sulphur due to lack of desulphurization facilities. According to the respondents the new product specifications recommended by the World Bank target 0.05% sulphur content although there is no dead line set for compliance. The KPRL strategic plan (2008-2012) addresses environmental issues such as sulphur recovery and water effluent treatment facilities to comply with legislation relating to emissions. The company is scheduled to commission waste water treatment plant by end of November, 2008. The estimated cost of the project is US$ 4 million.

The respondents are confident that KPRL has a good record of dealing with health, safety, security and environment issues (HSSE) and by March, 2008 the company had clocked over 5 million work hours without lost time injury (LTI). The KPRL strategic plan (2008-2012) addresses environmental issues such as sulphur recovery and water effluent treatment facilities to comply with legislation relating to emissions. The company is scheduled to commission water. Table 5 summarizes the HSSE performance.
Table 5: Health, Safety, Security and Environment Statistics.

<table>
<thead>
<tr>
<th>Details</th>
<th>31.03.08</th>
<th>2008</th>
<th>2007</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>Plan</td>
<td>Actual</td>
<td>Actual</td>
</tr>
<tr>
<td>Cumulative Work Hours without Lost Time Injury (LTI)</td>
<td>5,662,685</td>
<td>7,000,0000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No. of Medical Treatment Cases</td>
<td>0</td>
<td>4</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>No. of First Aid Cases</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>No. of Fires</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>No. of Occupational Health Incidents</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>No. of Environmental Incidents</td>
<td>0</td>
<td>4</td>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td>No. of Vehicle Incidents/Accidents</td>
<td>4</td>
<td>18</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>


The KPRL strategic plan (2008-2012) addresses environmental issues such as sulphur recovery and water effluent treatment facilities to comply with legislation relating to emissions. The company is schedule to commission water.

4.4.3 Human Resources (HR)

The refinery facilities are technologically complex and require highly skilled staff for their operation and maintenance. Rigorous training programs are in place to ensure that there is sufficient pool of manpower to operate the refinery to the required international standards. KPRL has elaborate in-house and external training programs that target to fill in deficiencies in occupational skills across the organization. The rapidly changing technology in refining process forced KPRL to enhance staff exchange learning programs with other refineries in Europe. Some of these exchange programs take as long as 3 years. However despite these training programs KPRL still rely heavily on foreign technical support.
probably explaining the reason why the plant upgrade project has taken too long to take off.

Table 5 summarizes the total number of days spent on training various KPRL staff during the year 2007 and the first quarter of the year 2008.

Table 5: KPRL Training Programmes in Days

<table>
<thead>
<tr>
<th>Type of Training</th>
<th>Period</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quarter 1, 2008</td>
<td>Actual, 2007</td>
</tr>
<tr>
<td></td>
<td>Days</td>
<td>Days</td>
</tr>
<tr>
<td>External /(Overseas Training)</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>Internal/In-House Training</td>
<td>858</td>
<td>2,739</td>
</tr>
<tr>
<td>External /(Local Training)</td>
<td>65</td>
<td>402</td>
</tr>
</tbody>
</table>


The respondents feel that promoting employee diversity at the refinery remains the biggest challenge, since the company is male dominated. With the support of the board of directors, the management of KPRL recruited 14 female plant operators for the first time in August, 2007. This was a paradigm shift for KPRL in the way it has been recruiting employees to fill in technical positions particularly in engineering and production departments. The management is determined to sustain the new practice. KPRL management believes that refinery employees are among the best trained staff in the country and indeed this view is shared by oil marketing companies.

KPRL management adopted the balanced scorecard system to monitor and evaluate company performance starting from the year 2007. The respondents feel that the new
system is transparent and will motivate staff and help the company in implementing the strategic plan. It is also hope that the new system will help the company retain qualified staff. The Company has been experiencing relatively high turnover of qualified plant operators who leave to take up more lucrative jobs in the gulf refineries. Table 6 summarizes the distribution of KPRL employees as at 30th March, 2008.

Table 6: Distribution of KPRL Employees.

<table>
<thead>
<tr>
<th>Department</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration, HR &amp; Finance</td>
<td>21</td>
<td>16</td>
<td>37</td>
</tr>
<tr>
<td>Engineering</td>
<td>54</td>
<td></td>
<td>54</td>
</tr>
<tr>
<td>Manufacturing &amp; Technology</td>
<td>130</td>
<td>25</td>
<td>155</td>
</tr>
<tr>
<td>Total</td>
<td>205</td>
<td>41</td>
<td>246</td>
</tr>
</tbody>
</table>


4.4.4 Corporate Social Responsibility (CSR)

The Management of KPRL and the board of directors have taken several initiatives that enable the organization to contribute back to the society. KPRL has maintained a cordial relationship with its key stakeholders, mainly the government of Kenya, the local community, shareholders, employees, customers and suppliers. KPRL plays a huge role in the country by ensuring steady supply of petroleum products and a good tax payer to the government of Kenya. The average annual tax collected by KPRL on behalf of the government in form of domestic taxes and excise duty is over KSh 500 million. Proper accounting for taxes and prompt payment of the same to the government helps the country in funding various projects that benefit the community such as free education, improving health care and eliminating poverty.
KPRL has Corporate Social Responsibility (CSR) budget of over KSh 2 million per year that is used to finance various community projects. KPRL has a committee headed by Human Resources Manager (HRM) that evaluates proposals from KPRL employees regarding community needs. The major criteria for funding community projects include among other things the degree of emergency, budgetary considerations, sustainability and political neutrality. For example in April, 2008 KPRL donated KSh 500 thousand towards the national fund for the settlement of Internal Displaced Persons (IDP).

KPRL opened up its football and basket ball grounds for use by youth from the local community for training and games. The sprawling Changamwe and Magongo villages neighbouring KPRL have many youth with sporting talents that otherwise remain untapped due to lack of social amenities. Other facilities provided by KPRL include games kits and dressing rooms. The sporting activities have kept the youth busy, health, productive and away from drugs.

As part of CSR activities KPRL regularly hosts learning institutions from all parts of the country to conduct study tour and learn about petroleum refining. On average over 3 learning institutions visit KPRL per month. The company has excellent student attachment programs that give students from colleges and universities opportunity to gain industrial experience and prepare them for future career challenges. Every department can accommodate at least four students per year. Recruitment of potential employees is always conducted transparently and fairly.
4.4.5 Finance

Following the 1994 deregulation of the petroleum industry in Kenya, KPRL’s crude oil intake declined to 1.6 million tonnes per annum and has remained at a capacity utilization level of around 50% against an estimated annual national product demand of 3.2 million tonnes. The main problem remains KPRL’s process configuration, with an inability to produce competitive products for the local market. According to KPRL Management numerous studies have demonstrated that the configuration disadvantage is best overcome by upgrading the plant at an estimated cost of US$ 400 million. Standard Chartered Bank (SCB) was appointed as financial adviser to KPRL in August 2005. SCB concluded that there was sufficient appetite in the financial markets to fund the upgrade of KPRL assuming the injection of 25-30% cash equity into the project by shareholders. The government with 50% equity interest is still looking for strategic equity partners willing to invest in the refinery upgrade project. The respondents feel that due to different shareholders interests and priorities, this project is long overdue and should have been implemented a decade ago. Despite the modernization challenges facing KPRL, the company has continued to sustain its operations and remains in strong financial position. Table 7 summarizes KPRL financial performance for the last six years.

4.4.6 Storage, Marketing and Distribution

KPRL controls 50% of the national demand for petroleum products. According to the PIEA (2007) the estimated national demand for petroleum products is 3.2 million tonnes. To ensure adequate storage space for refined products, KPRL has put in place a reliable tank maintenance program that guarantees availability of product storage space throughout the year. In total KPRL has over 68 tanks that are used to store water, crude oil and refined products. According to the company records, the company spends over KSh 100 million
per year to rehabilitate and maintain the storage tanks to meet operational and safety standards.

KPRL conducts regular inspection of the entire pipeline network to ensure safety of the products being supplied to and from the refinery. There is 24 hour security provided by a private company and the Kenyan police. Care is taken at all-time to ensure that product theft and adulteration to and from the refinery is eliminated. Although KPRL has limited marketing activities, it has been conducting regular customer surveys to measure the level of customer satisfaction. The latest survey was conducted by Steadman Group early this year which showed fair performance rating by Customers. KPRL also gets regular feedback about its performance through a monthly forum for supply and planning managers from oil marketing companies. This meeting is usually chaired by KPRL and has representative from the Ministry of energy too. The meeting usually discusses the country’s energy needs, storage and distribution of petroleum products both for the Kenyan market and the neighbouring countries.
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CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary, discussions and conclusions from the research findings as per the objectives of the study. Based on the findings, recommendations have been given regarding the challenges facing KPRL and the strategies being put in place. The limitations of the study as well as suggestions for further research have also been discussed.

5.2 Summary

The study sought to identify the challenges facing KPRL in the competitive business environment and to establish the strategic and operational responses by KPRL towards the challenges. Key challenges and responses from the findings and discussions in chapter four have been summarized.

Competition from cheap imported refined products remains the biggest threat to the future of the Mombasa refinery. Oil marketing companies prefer to import refined petroleum products than to process crude oil at KPRL. This problem is compounded by the rising cost of crude oil and processing inefficiency of the refinery which makes the refining process expensive. KPRL is operating an old refinery based on hydro-skimming technology which lacks thermo cracking facilities resulting in capacity under utilization and high levels of fuel and loss. The rising maintenance costs of an aging refinery, coupled with rapid change in refining technology increases the risk of plant obsolescence. Rising cost of water, processing chemicals and electricity, coupled with power disruptions also affect refining process thereby making the production process expensive.
The Mombasa refinery lacks desulphurizing facilities and therefore is not able to meet the existing Kenya Bureau of Standards (KBS) specification for automotive gas oil (diesel). The diesel specification for Kenya is 0.5% sulphur, however KPRL produces diesel with 1% sulphur due to lack of desulphurization facilities. To produce cleaner fuels, huge capital outlay is required to finance the refinery upgrade. The proposed refinery project is currently estimated to cost about US$ 400 million. The biggest hurdle facing the KPRL board today is mobilizing the massive financial resources required. Different shareholder strategies and priorities have contributed to indecision regarding future of the refinery. Shell, BP and Chevron who hold 50% of KPRL shareholding are not supporting the refinery upgrade project and have already communicated their plans to divest from the refinery.

Promoting employee diversity in a male dominated refinery is a huge task that requires a paradigm shift. Traditionally KPRL refinery has been a male dominated organization particularly in the manufacturing and engineering departments. This tradition was challenged by the KPRL board and the management was put to task to address this problem. KPRL is still relying heavily on foreign technical support which is expensive.

The government legislation requiring oil marketing companies to import and process certain minimum quantities of crude oil at KPRL has been challenge by some of the oil marketing companies, at the commercial court of law. It will be interesting to see the outcome of the law suit which will again define the structure of the oil industry and spell immediate doom to the Mombasa refinery. Some oil marketing companies are defaulting on their allocated share of crude oil for processing at KPRL.
Results of the study show that KPRL responses to the identified challenges have been progressing at a slow pace. This problem is compounded by different shareholder interests and strategies. Shell, Chevron and BP who own 50% equity interest have opted to divest from the refinery. To comply with the Dakar declaration regarding the ban on use of leaded fuel, KPRL switched to production of unleaded fuel from 1st January, 2006. This necessitated the modification of the plant. However the production of the unleaded gasoline straining the old refinery.

KPRL is diversifying into product related services so as to expand the revenue base. Currently the company has entered into a joint venture project with Kenya Pipeline Company (KPC) to construct storage and loading facility for Liquefied Petroleum Gas (LPG). This project is estimated to cost about US$ 50 million and is intended to increase the supply of LPG for domestic to the urban poor and rural communities to help conserve forests.

The management of KPRL prepared 5-year strategic plan (2008-2012) to address the numerous challenges facing the company. The strategic plan is now awaiting board of directors’ approval later this year. The respondents feel that the refinery upgrade project is long over due. The Government of Kenya which owns 50% equity interest in KPRL is still evaluating strategic partners willing to invest in the refinery upgrade project.

Despite operating an aging refinery, KPRL safety record is still good and indeed this view is supported by the oil marketing companies and the local community. In July 2008 the company celebrated 6 million work hours without lost time injury. The company is also
scheduled to commission a waste water treatment plant in October 2008. This project is expected to reduce water consumption by 50% and greatly minimize toxic levels of the waste water being drained to the Indian Ocean. To minimize energy costs, KPRL has begun a gas turbine project that is expected to produce about 30 megawatts of electricity for own use. Currently KPRL loses approximately 5 tones of fuel gas per day to the flare system which can be recovered as heat and electricity. Surplus power will be sold to the national grid. KPRL has been operating without a strategic plan. It is therefore planning to carry out a study that will investigate the strategy implementation process.

Rigorous training programmes are in place to ensure that there is sufficient pool of manpower to operate the refinery to the required global standards. With the support of the board of directors, the management of KPRL recruited 14 female plant operators for the first time in August, 2007. This practice is aimed at promoting employee diversity in the refinery regardless of sex, race, tribe, etc. KPRL introduced a new performance appraisal system which is hailed by the respondents as transparent and responsive to the implementation the organization strategies.

5.3 Conclusions

In view of the challenges facing KPRL, the success of the strategies applied by the management will depend on the vision and good will of the various shareholders. Indeed the future of the refinery depends on the planned plant upgrade which is estimated to cost the shareholders US$ 400 million. The 5-year strategic plan should serve as a road map to guide the KPRL board of directors and management. According to Ansoff and McDonnell (1990) continuous strategic diagnosis is necessary to determine the changes that have to be made to a firm’s strategy and its internal capability in order to assure the firm’s success in the environment.
5.4 **Recommendations for Further Research**

The 5-year strategic plan (2008-2012) provides an excellent opportunity for KPRL to achieve key milestones. It is certainly not possible for this study to investigate the implementation of the strategic plan. I therefore recommend that:

A further study can be carried out to investigate the strategy implementation. For over 40 years KPRL has been operating without a strategic plan. It is therefore interesting to carry out a study that will investigate the strategy implementation process over the five year period.

The scope of the study can be extended to cover other refineries in Africa. With the increased interest in oil prospecting activities in Africa, it is vital to carry out a similar study that will cover other refineries particularly in Sub-Saharan Africa.
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The East African, Why pollution must be eliminated, February 7-13, 2005, pp.32-33

APPENDICES

Appendix 1: List of Oil Marketing Companies

1) Chevron (K) Ltd
2) Galana Oil
3) Kenya Oil Company Limited (KENOL)
4) Kenya Shell Limited
5) Libya Oil Kenya Ltd
6) Mogas International Ltd
7) Kobil Petroleum Limited
8) National Oil Corporation of Kenya
9) Total Kenya Limited
10) Triton Petroleum Ltd
Appendix 2: Interview Guide to the Management of KPRL

This is a management research proposal about KPRL submitted to the University of Nairobi in partial fulfillment of the requirement for the award of the degree of Masters of Business Administration.

Kindly answer the following questions as accurately as possible. Your answers will be treated in confidence and used strictly for academic purposes only. Please note that sections A, B & C consist of questions to be administered to the General Manager. Sections D to H consist of specific strategic response questions to be administered to Functional Managers.

Section A: General Information

1. What is the background of the company?
2. How does KPRL fit into the oil supply chain in Kenya?

Section B: Business Environment & The Challenges

1. What impact has liberalization of the oil sector had on KPRL?
2. How has the prevailing economic situation affected KPRL performance?
3. What other external changes have taken in place within the last 10 years that have had an effect on KPRL operations?
4. What are the challenges in order of importance facing KPRL today?
Section C: KPRL Strategic Planning Process

1. Has your KPRL Mission and Vision statements been altered within the last 10 years?

2. Does the company develop strategic plans and when was the last such plan developed?

3. How are managers and the employees involved in the KPRL strategy planning process?

4. What strategic responses has KPRL put in place to tackle the challenges posed by the competitive business environment?

5. What is your assessment of KPRL resources as tool for sustainable competitive advantage?

6. What is your rating of KPRL strategic responses to the Challenges posed by the competitive business environment?

Section D: Technology

1. What challenges does the company face with rapid changes in production technology?

2. How does the company respond to the changes in technology?

3. To what extent does the company utilize technology as a competitive tool?

4. In terms of adopting new technologies, how do you rate KPRL?

Section E: Health, Safety & Environment

1. The pressure on governments to protect the environment from pollution is enormous. How is KPRL responding to the global requirement for countries to produce cleaner fuels?
2. How do you rank the safety of the refinery operations and products in relation to other refineries with similar capacity in the world?

Section F: Human Resources

1. What challenges is KPRL facing in Human Resources Development?

2. Does the management effectively communicate the strategic plans of the company? If yes, what form of communication is used and how regularly?

3. How do you rate the skills and knowledge of KPRL staff as tool for competitive advantage?

Section G: Social Responsibility

1. How does KPRL share its Mission and Vision with the surrounding Community?

2. Can you please state any challenges that KPRL is facing in fulfilling both community and shareholders expectations?

3. How does KPRL respond to the challenges above?

Section H: Finance, Marketing & Distribution

1. How has the prevailing economic situation affected KPRL financial performance?

2. What strategies has KPRL put in place to maximize shareholders wealth?

3. Are there any KPRL strategies that have stalled due to financial constraints?

4. What is KPRL intending to do in future about challenges that have not yet been addressed?

5. What is your rating of KPRL financial resources as a tool for competitive advantage?

6. What is KPRL Market share in the oil & gas industry?

7. What are the challenges faced in the storage and distribution of oil and gas in Kenya?
8. What Measures is KPRL taking to improve on the storage, marketing and distribution of petroleum products?

9. What is your rating of KPRL storage and distribution facilities as a source of competitive advantage?
Appendix 3: Interview Guide to Oil Marketing Companies

This is a management research proposal about KPRL submitted to the University of Nairobi in partial fulfillment of the requirement for the award of the degree of Masters of Business Administration.

Research Topic

Strategic and Operational Responses by KPRL to Challenges in the Competitive Business Environment.

Kindly answer the following questions as accurately as possible. Your answers will be treated in confidence and used strictly for academic purposes only.

PART 1

General Information

i. Your Name---------------------------------------------(Optional)

ii. Job Title--------------------------------------------- (Optional)

iii. Name of your Company-------------------------------

iv. How long has the Company been in business---------------
1. Please indicate the factors presenting the greatest challenge to the survival and competitiveness of the Refinery.

i. 

ii. 

iii. 

iv. 

v. 

vi. 

vii. 

viii. 

ix. 

x. 

1. Please explain in detail the measures being applied by KPRL to satisfy its customers.
2 Please indicate your opinion regarding the government legislation on base load processing requirement for oil marketing companies.
Please provide any additional information that is useful to this research.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
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Thank you very much for your valuable time and contribution to this research.