

**CHALLENGES FACING THE IMPLEMENTATION OF
LIQUIDIFIED PETROLEUM GAS SUPPLY CHAIN STRATEGIES IN**

-KENYA

BY

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**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF
BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENT
OF MASTER OF BUSINESS ADMINISTRATION DEGREE OF THE
UNIVERSITY OF NAIROBI**

NOVEMBER 2012



Declaration

This research project is my original work and has not been presented for award of any degree in any university. I dedicated to my family and Macharia my best friend without whom life would be meaningless. My parents Mr. and Mrs. Njogu who have invested and believed in me over the years and helped me appreciate the value of hard work. To Macharia, who constantly challenged me to be the best, I am grateful for your support.

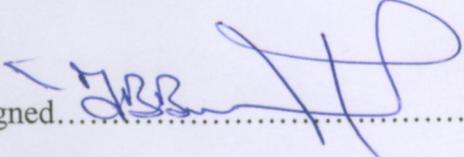
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This research project has been submitted for examination with my approval as the University Supervisor.

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Dedication

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Special thanks to my supervisor, Dr Zack Awino, PhD, for his commitment, availability, professional guidance, constructive advice, professional guidance during this research.

The knowledge imparted was valuable not just for this project but also for the future.

Thank you for being my guide in this academic journey.

I would like to thank all those who took part in filling the questionnaire and giving the much needed feedback.

Acknowledgements

First, I would like to thank the Almighty God for his provision financially and for giving me the strength to carry out this project. Special thanks to my family for their understanding and patience during the period of this project, when I was not a good daughter and sister. Again thanks to Macharia for the sacrifice and errands you had to do, for the sake of this project.

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MNC	Multinational Company
NOCK	National Oil Corporation of Kenya
OMCs	Oil Marketing Companies
KRC	Energy Regulatory Commission
PIEA	Petroleum Institute of East Africa

Abbreviations and Acronyms

LPG	Liquidified Petroleum Gas
SCS	Supply Chain Strategy
KPC	Kenya Pipeline Company
KPRL	Kenya Petroleum Refinery
MNC	Multinational Company
NOCK	National Oil Corporation of Kenya
OMCs	Oil Marketing Companies
ERC	Energy Regulatory Commission
PIEA	Petroleum Institute of East Africa

Abstract

Strategic supply chain management has emerged as a key area of studies in the recent past. The supply-chain has been identified as a strategic competency of the organization as it has enormous potential to contribute value to the different stakeholders. Supply chains have moved from a cost focus to a customer focus and currently shifted to a strategic focus, thus the need to think strategically about the supply chain has never been more critical. Strategy implementation entails working through others, organizing, motivating, culture building and creating strong links between strategy and how the organization operates. Strategy implementation can pose a number of challenges. The objective of this study was to determine the implementation challenges of LPG supply chain strategies. The LPG supply chain consists of operators, regulators, main contractors, suppliers, KPC, KPRL, ERC and the various LPG distributors. The study has been presented through five chapters through which the researcher has discussed the above issues. Respondents were selected from each of the companies selected for the research. Questionnaires were administered to the respondents and analyzed through descriptive statistics and content analysis. The study established that only a small percent of formulated SCS are actually fully implemented. The implication of the study to policy makers is that implementation challenges can be avoided. The findings will also form the basis for further research and should be understood and evaluated in the light of the limitations of the study. Recommendations on how LPG Marketers can successfully implement supply chain strategies to achieve efficiency and competitive advantage.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The success of every business or its failure is increasingly being determined by how well it manages the flow of materials from the source to the customer. The management of this flow contributes greatly to a firm's profitability and determines its ability to be sustainably competitive. Over the years with increasing global market completion, supply chain management had evolved from just being an administrative role to being a key strategic aspect to a firm's competitiveness (Monczka, 2011).

The Supply Chain is the facility and distribution network that executes functions such as procurement of materials processing of these materials into finished products and the distribution of these products to the customer (Cooper & Ellram, 1993). Supply Chain, has also been described as a set of organizations directly linked by one or more of the upstream and downstream flows of products, services, finances, and information from a source to a customer (Mentzer, 2001).

The strategic direction of many firms is largely supported by supply strategies. Firms are under immense pressure from the recent economic meltdown coupled with increased competition, to reduce costs and globalize their supply base as well as reduce risks, thus achieving supply transformations and efficiencies. These are crucial to the overall value creation of the firm which in turn gives the firm competitive advantage. This calls for firms to develop and implement appropriate and innovative supply chain strategies.

The supply chain of LPG (Liquidified Petroleum Gas) in Kenya consists of the gas marketer, resellers, main contractors, sub-contractors and suppliers. Various Internal (business related) and external forces (economical, political, government) govern the supply chain. Supply chain strategy is increasingly becoming the defining factor for LPG businesses in Kenya's grossly competitive business environment. It involves deliberate decisions and actions concerning the supply chain that are geared towards giving a firm a competitive edge over its competitors.

1.1.1 Concept of supply chain strategy

Supply chains initiatives have become a critical part of firms' operations. Today's businesses are faced with fierce competition, with increased product differentiation, introduction of products with shorter life cycles and rapidly shifting customer expectation. This has forced them to invest and pay closer attention to the supply chain.

A supply chain consists of multiple activities and processes including manufacturing, distribution, customer service, marketing and selling functions. Supply chain at present is not as it was 20 years ago. It has evolved over the years, with logistics integrating with purchasing, production and selling, giving firms increased agility in the current hyper-competitive economy characterized by increasingly rational buyers faced with abundant choices. Supply chain management is one area that analysts say can set a business apart from the rest. Supply chain thinking has untapped potential for moving a company from an unfavorable to a more advantageous position as well as maintaining a competitive position.

The dynamics involved in getting a product or a service from the supplier down to the consumer may either mean the exponential success of a company or its sheer failure. The supply chain is by definition a set of interlinked organizations and the series of activities and resources involved in the transformation of raw materials into the finished product and its subsequent delivery to the customer (Christopher, 1992). The Council of Supply Chain Management Professionals (CSCMP) includes in its definition, collaboration with, and coordination of other stakeholders in the channel such as intermediaries and third party service givers.

Source: CSCMP (1992)

The strategic direction of many organizations is being supported by supply strategies. To achieve a supply transformation that gives value creation, firms need to formulate proper supply chain strategies and regularly evaluate the level and challenges of implementing supply strategies they consider most important. Supply chain strategies are influenced by certain factors such as costs, prices, company size, and political pressures on the company (Anderson 2003).

The formulation of supply chain strategy is guided by the overall business objectives. Businesses have different strategies thus have different supply chain strategies. Supply chain strategy should seek to minimize system wide costs and conform to customer requirements (Frazelle, 2002).

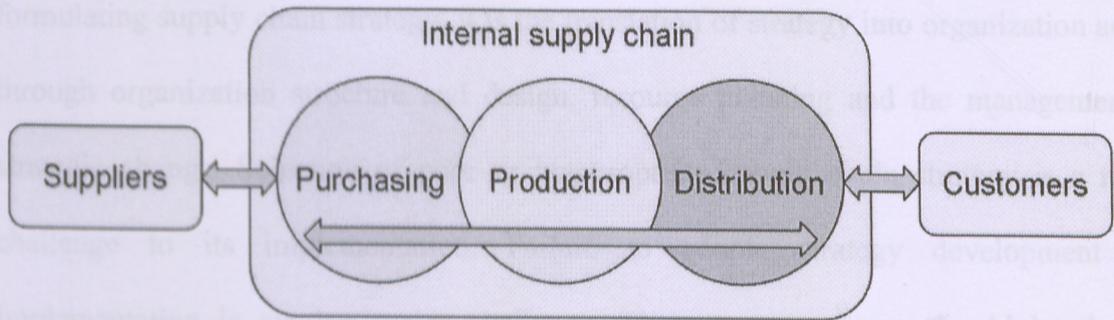


Fig 1.1 A Typical Supply Chain Model

Source: CSCMP (1992)

1.1.2 Challenges of supply chain Strategy implementation

Implementation of critical strategies is still lagging as the strategies with longer implementation timeframes and capital -intensive and cross functional are not considered as being important but notably standardization of purchase to reduce complexity and cross functional and cross enterprise collaboration, are highly likely to be very crucial for the future success of the organization, thus there is need for high level of implementation and effectiveness in core strategies (CAP 2011).

Strategy Implementation according to CAP (2011) is the translation of chosen strategy into organizational action so as to achieve strategic goals and objectives. They also reckon that it is the way in which a firm should develop, use and amalgamate organization structure, control systems and culture to follow strategies. This ultimately gives it valuable competitive advantage.

Implementing supply chain strategy is tougher and more time consuming than formulating supply chain strategy; it is the translation of strategy into organization action through organization structure and design, resource planning and the management of strategic change. Selection of poor or inappropriate supply chain strategy is a major challenge to its implementation. Failure to couple strategy development and implementation is another major challenge. These two processes should be thought through together.

The silent killers of strategy implementation are top-down or complacent upper management, unclear strategy and conflicting priorities, ineffective senior management team, poor vertical communication, poor coordination across the enterprise and inadequate middle-manager and supervisor management skills(Beer, Eisenstat 2000).

A study by Waller (2000) revealed that only two percent of supply chain strategy implementation runs smoothly as per the plan and budget and the main causes of implementation failure were company culture, lack of leadership and poor supply chain visibility. Other challenges are resistance to change, lack of Organizational implementation capabilities, management policies that are not supportive of implementation, lack of system support, mismatch between strategy and structure, lack of ownership of strategy, lack of financial and ethical capacity to support new strategy, unclear strategy, poor strategy mapping, poor communication and poor coordination across the enterprise .

The LPG supply chain in Kenya is faced by various challenges, making it difficult to raise national per capita consumption. Various supply strategies have been formulated to overcome the challenges that limit LPG market penetration in Kenya include unavailability, high prices, lack of public awareness, poor distribution infrastructure and the presence of unlicensed operators. Illicit cooking gas sale exposes consumers to the danger of domestic fires and deadly explosions. The illegal dealers are also known to sell underweight products, thus cheating consumers of value for their money.

1.1.3 Oil Industry in Kenya

The oil industry consists of two sections, the upstream and downstream operations. Upstream operations involve exploration and production works that will to discovery and mining of petroleum. In Kenya exploration work is done by China Petroleum, BG Group PLC (BG) and Dominion Petroleum Limited (DPL). This is done through leasing of exploration blocks at a fee under supervision of National Oil Corporation on behalf of the government.

There has been recent discovery of petroleum reserves in the northern part of Kenya, crude oil in Sudan and Uganda and in addition to natural gas discovery in Tanzania. Downstream operations include refining of crude oil into petroleum products, shipping and activities, storage, overland distribution and retailing. (Musindi, 2008) Kenya gets its crude oil from ABU Dhabi, Iran and Saudi Arabia. Refined products come from these Middle East countries and India.

Kenya Petroleum Refineries Limited was established in 1960 to run the only refinery in East Africa. The refinery is a processing plant which turns crude oil into finished products such as gasoline, kerosene, LPG, fuel oil, bitumen and other products. The refinery is simple and lacks adequate capacity to refine sufficient LPG to supply the local market. It has a capacity to process about 30 per cent of the total LPG requirement in Kenya. The remaining 70 per cent comes from direct importation.

Liquidified Petroleum Gas (LPG) is a by-product of the refinement of crude oil. LPG is also produced when Natural Gas (Methane) is extracted from the gas fields and 'dried'. LPG which comprises Propane and Butane, was first discovered in Pittsburgh USA by a Dr Walter Snellings. LPG is an increasingly popular fuel for cooking and manufacturing. It is transported and stored as a compressed liquid (hence Liquid Petroleum Gas) in pressurized canisters ranging in size between 1kg and 22.5kg for ordinary domestic use and larger canisters of between 22.5 kg and over four tones for industrial use. For household use, gas is conveyed via simple regulators and pipes to cookers or lamps which are specially made for LPG use.

The Kenyan LPG market is highly dependent on KPRL for liquefied petroleum gas (LPG), due to the absence of a viable infrastructure for its importation and storage. Therefore, the Government requires oil companies to import and process crude oil through the refinery to satisfy the requirements for LPG. LPG is imported through the Shimanzi and the Kipevu oil Terminals in Mombassa. The Kipevu Terminal is connected to the refinery by a pipeline. (Ministry of energy final report 2005)

The Kenyan Energy Act establishes the Energy Regulatory Commission (ERC) as the regulator of the energy sector. The ERC has several functions as set out in the Act which include regulation of importation, exportation, transportation, refining, storage and sale of LPG and other petroleum products, protecting consumer, investor and other stakeholder interests and monitoring fair competition in the energy sector (Musindi, 2008).

Kenya has been faced by many LPG supply and distribution challenges that have led to high prices and constrained availability of LPG to the customers.; limited import facilities that limit the size of vessels that can supply LPG, insufficient storage facilities, poor road and rail infrastructure, poor LPG company's pricing policies elimination of the challenges is expected to will lower prices Last year an acute LPG shortage gripped the Kenyan market. The shortage was as a result of technical failure at the country's sole refinery and delays in the shipping of imports, leading to a sharp increase in the price of the commodity.

In order to meet increasing LPG Demand, the Kenyan Government plans to construct LPG import handling, storage and distribution facilities across the country. LPG marketers also seek to bridge the supply gap by importing the commodity from Zambia through Tanzania. The government has made several strategies, both fiscal and regulatory. To make LPG more affordable, the government has zero-rated taxes on the product. It is also working on modalities to remove taxes on LPG cylinders and appliances. The Energy Regulatory Commission has introduced the standardization of cylinders and valves which has led to increased consumer access to LPG.

The Kenya Ports Authority has hired a private investor to develop a large scale LPG import facility which is scheduled for completion at the end of this year. The investment will improve LPG availability and hopefully drive prices down. It will also create opportunities for private investors. They can invest in storage, filling, and distribution networks across the country. On the other hand, the Rift Valley Railway should be investing in bulk LPG transport. Rail haulage is safer, more efficient, and cheaper than transport by road. To achieve sufficient flexibility in the Kenyan LPG supply chain, three alternative supply scenarios have to be implemented. These are provision of an LPG jetty unloading facility, an LPG pipeline linking the jetty to the LPG storage facility and the storage facility itself.

1.2 Research Problem

To achieve supply efficiency that gives the overall value creation the firm needs to constantly assess the degree of supply chain strategies that are best suited for the firm. Once strategies have been developed they need to be well implemented, to achieve the firm's intended strategic objective.

The Kenyan LPG supply chain is faced by various challenges, making it difficult to raise the level of national consumption. Several supply chain strategies have been developed and implemented such as the strategy for standardization of LPG cylinders. However several strategies have been formulated but are yet to be well and fully implemented.

Some research has been carried out on the supply chain strategy implementation in other sectors but little research has been done in the oil industry. Awino (2011) examined supply chain management in large private manufacturing firms in Kenya, addressing core competencies, strategy and strategy implementation. Opiyo (2010) addresses the challenges of strategy implementation at I&M Bank, Kenya Mutua (2010) examined the impact of value chain management strategy on performance in his study of major oil companies in Kenya. Said (2010) analyses the challenges facing implementation of strategy for revitalizing Agriculture. Another researcher, Wangui (2007) assesses strategy implementation challenges in the main stream churches in Kenya.

Numerous studies acknowledge that strategies frequently fail not because of inadequate strategy formulation, but because of insufficient implementation. Supply Chain Strategy implementation has received far less research attention compared to strategy formulation. This study will seek to answer the following question: what challenges are LPG marketers facing in implementing their supply chain strategies?

1.3 Research objective

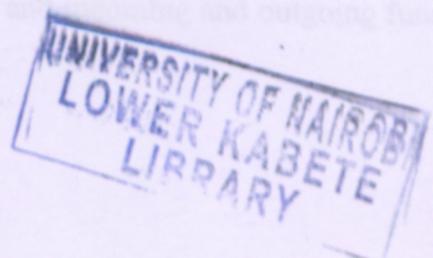
To determine implementation challenges of LPG supply chain strategies in the oil industry in Kenya.



1.4 Value of the study

Establishment of implementation challenges will enable the policy makers' to establish ways of overcoming the challenges and make as to what measure to take for successful strategy implementation .Implementation of strategy is critical to achieving result or effectiveness of core supply chain strategies.

The study will focus on the implementation challenges of supply chain. This will enable policy makes to effectively use supply chain strategies to archive supply performance and streamline the supply chain, to reduce costs and avail LPG as a single product to the consumer at reasonable price within the consumer's purchasing power .Little study has been done regarding implantation challenges of LPG supply chain strategies in Kenya. This study will also fill the knowledge gap and form a basis of further future research in LPG supply chain strategy implementation.



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter will examine supply chain strategy and its challenges through relevant literature, so as to have more insight on the current issues. It will involve examining two concepts; supply chain and supply chain strategy with key focus on factors that influence successful implementation of supply chain strategies and the challenges that affect implementation of the supply strategies

2.2 Concept of Supply Chain and Strategies

Supply chain initiatives have become a critical part of firms operations. In today's competitive market a firm's success is increasingly dictated by how well a company controls its supply base and mitigate supply bottlenecks and liabilities. The supply chain is by definition a set of interlinked organizations and the series of activities and resources involved in the transformation of raw materials into the finished product and its subsequent delivery to the customer (Christopher, 1992).

Metz, (1998) refers to the supply chain as the flow of materials, information and funds between different parties or organizational functions. According to MIT, a single-stage supply chain, typically representing a single organization, incorporates a range of material flow functions (receiving, processing, distributing and delivering) a complex array of Information processing and decision making functions based on information flows from customers, suppliers and internal functions and incoming and outgoing funds.

Frazelle (2002) refers to the supply chain as the network of facilities (warehouses, factories, terminals, ports, stores, and homes), vehicles (trucks, trains, planes, and ocean vessels), and logistics information systems (LIS) connected by an enterprise's supplier's suppliers and its customer's customers. Supply-Chains are currently used by companies as a central element for strategy, not simply as a means of moving materials. Supply-Chains can deliver the optimal value by directly impacting the different strategic priorities of speed, cost, flexibility and quality.

Business strategy stipulates the overall direction that an organization wishes to go, while the supply chain strategy constitutes the actual operations of that organization and the extended supply chain to meet a specific supply chain objective. Supply chain strategy defines how the supply chain should operate to achieve a competitive edge. It is an iterative process that appraises the cost benefit trade-offs of operational components (Happek 2005).

Supply chain strategy is the design and planning of the end to-end chain to maximize the potential to meet customer demand at the lowest possible cost (Thompson and Strickland, 1989). They contend that strategy is about the firm's change and action or decision, giving the firm a competitive advantage. Business strategy, in order to be capable of sustained success, must be grounded in competitive advantage. (Thompson and Strickland, 2003)

Supply chain strategy is important as it operationalizes and supports business strategy. It also focuses on driving down operational costs and maximizing efficiencies. Scs also

helps an organization in establishing how to work with all the supply chain partners. If well executed, supply chain strategy results in value creation for the organization.

Formulating the appropriate supply chain is eased by first identifying the vitals of the supply chain. Understanding the business strategy is the first step of formulating a Supply Chain Strategy for the obvious reasons of working as a team. This also enables them to view themselves as a customer facing entity serving the competitive goals of the firm. Where the business strategy seeks to be the low cost provider, then Supply chain strategy can be the enabler of the business strategy. Similar to formulating business strategy, formulating supply chain strategy involves consideration of several elements including the firm's focus, core capabilities, core competencies and means of differentiation, and their alignment to the supply chain (Happek 2005).

The next step is to carry out an evaluation of the firm's supply chain and capabilities. Where possible a non-biased third party should be involved in the process. Evaluation involves appraising the firm's assets, infrastructure and how well they support strategy. Once the evaluation is done, supply chain executives need to review recommendations, identify implementation requirement and risks and certify the opportunities. If any discrepancy linking Supply Chain Strategy and operational assets arises then capital investments are inevitable; otherwise amend the strategy.

During the Supply Chain Strategy formulation process the firm should cooperate, collaborate seek mutual goals with the supply chain partners without necessarily divulging entire details thus reducing resistance during the implementation process.

2.3 Supply Chain Strategy Implementation

There have been three distinct conceptions of the term: strategy implementation, the first view focuses on a *process view* taking strategy implementation as a sequence of carefully planned consecutive steps. The second view considers strategy implementation as a series of more or less concerted actions observing the actions from a *behavior view*. Other authors combine both the process and behavior approaches and action perspective (Pearce & Robinson, 2007)

As a process, Implementation is the *process* that turns plans into action assignments and ensures that such assignments are executed in a manner that accomplishes the plan's stated objectives (Kotler, 1984). As a Behavior, implementation is a hands-on operation and action-oriented human behavioral activity that calls for executive leadership and key managerial skills (DeKluyver & Pearce 2003). As a Hybrid, Singh (1998) defines strategy execution as the step by step implementation of the various activities that make up a formulated decision-making strategy.

Supply chain strategy implementation involves keenly following an implementation plan. An implementation plan is critical, setting all implementation requirements and contingencies clearly stipulating all activities and tasks, roles, responsibilities, a corresponding timeline, and performance metrics.

Proper Supply Chain strategy implementation is critical, even the most superior strategy is useless if poorly implemented. According to Aosa (1992), once strategies have been formulated, they need to be implemented; they are of no value unless they are effectively translated into action giving the organization a competitive edge and relevance to current market trends.

2.3.1 Factors for successful Implementation

There are several factors that influence the success of supply chain strategy implementation, they range from the people who formulate, communicate or implement the strategy, to the systems or mechanisms in place for co-ordination and evaluation.

Good implementation naturally starts with good strategic input: the soup is only as good as the ingredients (Allio, 2005). Yung, Guchui, Eppler in their ICA 2008 report identified factors that influence strategy implementation. According to them, the strategy formulation process is one significant factor. They reckon that a poor or vague strategy can impede implementation efforts. Hammant and fisher (1997) gave critical success factors; a committed organization from the board down, effective programme management and consistent pre-emptive communication. Gourley (1998) in his study identified that involvement of staff, suppliers and other stakeholders in implementation has been a critical success factor. He cited that the distribution company actively encouraged the involvement of staff in decision making welcoming contribution from suppliers in identifying areas of improvements.

Bantel (1997) concludes that for successful strategy implementation synergies between supply strategy types and implementation capabilities exist and should be exploited. Kim & Mauborgne (1991) suggested that strategy formulation process ultimately affects the commitment, trust, and social harmony as well as the outcome satisfaction of managers in subsidiaries. Strategy executors also affect strategy implementation. Effectiveness of strategy implementation is, at least in part, affected by the quality of people involved in the process (Govindarajan, 1989).

(Schaap 2006) had intriguing findings that indicated that strategy implementation success depends crucially on the human or people side of project management, and less on organization and systems related factors. The involvement of top management in the strategy implementation process has a positive effect on the degree of implementation success (Harrington 2006).

The organizational structure is the second most important implementation influence. If a firm lags in aligning its organization structure to its strategy; it may exhibit poor performance and be at a serious competitive disadvantage. Adjusting organizational structure according to perfect strategy can ensure successful strategy implementation (Schaap 2006). It is also critical to identify that different strategy types have different requirements regarding an adequate organizational structure.

A study by Cranfield SM and Efeso (2010) that analyzed the strategic development and implementation process concluded that top level support and use of vision led, quantitative modeling and risk management techniques are essential for successful Supply Chain Strategy implementation.

2.3.2 Challenges of supply chain strategy implementation.

According to a study by Fortune Magazine CEO Strategy failures occurred largely due to failure in execution, not necessarily due to the vision and strategy development. The same applies to Supply chain strategy. It is common practice for most organizations to formulate their supply chain strategies after defining the business strategy. This limits the fusion of excellent supply chain strategies into the business strategy, thus creating major gaps between business strategy and the supply chain strategy.

Organization challenges are also major impediments to Supply Chain Strategy. A study by Cranfield School of management and solving Efeso revealed that only a small segment of supply chain strategy implementation run on set time and budget. The study also identified that major functional drivers of the supply chain was alignment of corporate strategy and customer service while the critical supply chain performance drivers as cost, customer quality and customer lead-time. Waller (2010) gave three main causes of implementation failure; poor supply chain visibility, lack of leadership and company culture. Gourley (1998) points out that failing to involve the (DC) staff as well as suppliers and other stake holders in the formulation and implementation leads to implementation challenges and at times strategy failure.

Poor or vague supply chain strategy can limit implementation efforts dramatically. Good execution cannot overcome the shortcomings of a bad strategy or a poor strategic planning effort (Hrebiniak, 2006). Allio, (2005) mentions the fact that the kind of strategy that is formulated will influence the effect of implementation.

This also applies to supply chain strategy, as poor alignment of supply chain strategy to the corporate goals and objectives poses as a major implementation challenge, this when the supply strategy does not support the overall corporate strategy, exposing the organization to certain risks; diluting and weakening the Supply Chain Strategy, cost benefit are usually not clear, confusion and conflicting communications to the staff especially where objectives conflict (Allio, 2005).

Organization challenges are also major impediments to Supply Chain Strategy implementation. Some of the organizational challenges existing in many organizations are lack of leadership and work force ownership, "Tower of Babel" challenge where departments within the organization fail to have and speak the same supply chain language, different organization focus as some managers are process or functional oriented, Extending the Supply Chain with involvement of external parties (trading partners) necessitating collaboration (UPS 2005).

Noble (1999) identifies barriers to effective implementation. He considered that physical distances hinder the necessary, cross-functional collaboration in the organization form physical barriers. Turf barriers are the other side of this coin, representing the Conflicting

interests of the distinct organizational units. Interpretive barriers are formed by the different ways different units interpret and view the strategy. Noble (1999) novel contribution to the debate of effective implementation is that for effective implementation, the strategist must create unofficial communication network.

Pearce and Robinson (1996) are of the view that the starting point of strategy implementation is the selection and transformation of organizational structure. The critical aspect of strategy implementation, according to them, is the synchronization of goals and tasks, resources and control. Organization's systems, such as budgeting are critical concerns. Structure and System are linked in various cases. Implementation is linked with goal setting practices. Goal setting is a systemic practice very often associated with strategy in many real-life organizations. The third variable for strategy implementation in addition to structure and systems: the required cultural measures in the organization.

Beer and Eisenstat (2000) identified a group of relevant, inhibiting factors or barriers to strategy implementation and learning the factors are; laissez-faire or a top-down management style that creates tension in the organization, discomfort and use of the top team for administrative Issues rather than focus on strategic discussions

Conflicting priorities and poor coordination of strategy are other barriers or killers of strategy implementation as two or more competing strategies are competing for the same limited resources, an ineffective senior management team, poor vertical communication

that not only hinders strategy implementation but also prevents discussion of the barriers, poor coordination across functions, unclear strategy plus inadequate down-the-line leadership skills and development. They clearly acknowledge the need for large-scale communication, at least partial participation, leadership and organizational integrity.

3.1 Introduction

The objective of this study is to identify and examine the challenges facing implementation of LPG supply chain strategies in the oil industry in Kenya. The study will show how companies can better overcome implementation strategies of LPG supply chain strategies.

This chapter deals with the analytical framework of data analysis, which describes the firms and variables included in the study, the distribution patterns of data, and applied statistical techniques in investigating value chain and competitive advantage in the oil industry.

3.2 Research design

The researcher will use cross-sectional survey to determine the frequency of challenges, to examine and understand the challenges facing implementation of supply chain strategies in the Kenyan oil industry. Cross-sectional surveys are useful in assessing and determining profiles, attitudes, knowledge and beliefs of a population.

The researcher assumes that given objective reality exists independent of individual's perception. Observing real world facts, formulating explanations for such facts using subjective processes, positivists also use formulated explanations to make of predictions of real world phenomena.

CHAPTER THREE: RESEARCH METHODOLOGY

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The researcher assumes that given objective reality exists independent of individual's perception .Observing real world facts, formulating explanations for such facts using inductive processes, positivists also use formulated explanations to make of predictions of real world phenomena.

3.3 Population

The target population of this study is all the LPG Importing and Marketing Companies operating in Kenya, registered under the Kenyan Energy act by Ministry of Energy of Kenya and the Energy Regulatory Commission of Kenya. The target population is expected to have varying characteristics in that some companies are bigger and have different market shares.

The respondents will be expected to specify the level of agreement or disagreement on a systematic agree-disagree scale for a series of statements. The questionnaires will be administered to the LPG Managers or their equivalents in the respective LPG companies. Kenol/Kobil for example, a multi-national recently acquired by Puma Energy holds a larger market share compared to Hashi Energy a locally owned LPG company. The main motivation behind this choice is that the companies are likely to reveal and provide substantial supply chain data which will be critical in latter statistical analysis. Furthermore, the focus of the study is within the LPG industry.

3.4 Sample Design

The researcher will use purposive also known as judgmental, selective or subjective sampling .Purposive sampling relies on the researchers judgment when it comes to selecting the sampling unit, focusing on particular characteristics of a population.

The researcher selects respondents that are most likely to contribute appropriate data both in terms of relevance and depth. (Oliver & Jupp 2006).For the purpose of this study the researcher will use her judgment to determine the sample units based on LPG marketer's market share.

3.5 Data Collection

The researcher will use Primary data collection methods to collect data on which she will draw inferences and conclusions for the study. The researcher will administer Likert Scale type of questionnaires, with attitude or opinion questions to a given situation on the selected respondents.

The respondents will be expected to specify the level of agreement or disagreement on a systematic agree-disagree scale for a series of statements. The questionnaires will be administered to the LPG Managers or their equivalents in the respective LPG companies.

3.6 Data Analysis

Data will be analyzed using quantitative statistical analysis. The data will be checked for completeness, accuracy and consistency. Data will be coded and tabulated for analysis; the researcher will generate, compute and interpret mean scores.

The Likert Scale type questionnaire has two sections, section A and B. The data in section A will give general information regarding the respondent's company's background, while the data in section B will give information on the respondent's attitudes regarding supply chain strategies and their implementation. Data on section A of the questionnaire will be analyzed using frequency distribution and percentages while data on section B will be analyzed using mean scores and modes.



CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF RESULTS

RESULTS

4.1 Introduction

This chapter details the findings and analysis of the study as set out in the research methodology. It elaborates the researchers finding as per the information gathered from the use of questionnaires to collect data. Data was collected through drop and pick questionnaires to the respondents. The data collected was quantitative and therefore the researcher used both descriptive statistics and content analysis to analyze the data.

4.2 Data Analysis

The study had two main dependent variables namely performance through efficiency and effectiveness in sale, several independent variables were derived from scaled responses to questions in appendix 11. The researcher used a five point scale to analyze given in part B of the questionnaire. The scaled questions were analyzed through percentages while the qualitative questions were analyzed through content analysis.



4.2.1 Quantitative Data

Table 4.1: Company Ownership

Ownership	Frequency	Percentage
Government Owned	1	10
Chain Subsidiary	6	60
Franchise	0	0
Limited Local company	3	30
Partnership	0	0
Total	10	100

Six out of the ten selected LPG marketing firms in the Kenyan oil industry are Chain subsidiary National oil is the only government owned company, while three are independent local limited companies operating in the industry.

Table 4.2: Major Competitors

Company	Market share %
Shell	26
Total Kenya	24.1
Oil Libya	21.7
Kenol Kobil	12.4
Hashi Energy	4.6
Addax	3.8

Shell Ltd is the market leader in the LPG market in Kenya followed by Total Kenya, Oil Libya then Kenol /Kobil are viewed as the main competitors in the industry, however Hashi Energy and Addax are increasingly becoming competitive as their market shares has been expanding steadily despite being new entrants in the industry.

Table 4.3: Challenges facing the implementation of LPG supply chain strategies in the oil industry in Kenya

Challenges	No challenge	Neutral	Somehow	Much	Very much
Management	0	3	4	1	2
Leadership	2	1	1	3	3
Finance	0	1	2	3	6
Communication	1	1	3	3	2
Commitment	3	2	1	1	3
Motivation	2	3	1	2	2
Training	0	2	2	3	4
Skills	1	1	3	2	3
Personnel	3	2	2	1	2
Strategy awareness	3	3	2	1	1
Government/ERC	1	1	2	3	3
Competition	0	1	2	3	4
Infrastructure	0	1	3	2	4

The major challenges identified were; leadership, skills, Technology, poor infrastructure, coordination, motivation, communication, strategy awareness. Others include resource-base which consists of personnel, finance, and People. Moreover, environmental challenges such as culture, governmental, societal, compliance with ERC standards and stiff competition.

Moreover, to the above-mentioned challenges, the respondents added malpractices in the industry such as corruption, the existence of illegal re-fillers, piracy of seals, adulteration of product that poses great danger to the end users and bigger liability to the marketers. The industry forces, such as the buyers' purchasing power and rivalry within the industry, has also led to increased costs in promotions, branding and efforts to enhance market share.

Table 4.4: Supply chain strategy formulated together with the corporate strategy

Level of SCS Implementation	Frequency	Percentage
Very High	1	10
High	3	30
Low	4	40
Very Low	2	20
Not Sure	0	0
Total	10	100

Companies are lagging in implementing supply strategies considered important to their competitive. A matter of concern is that there is a gap between the formulated strategies and their actual implementation.

Table 4.5: SCS aligned with corporate strategy

Alignment	Frequency	Percentage
Very Strong	2	20
Strong	4	40
Very Weak	3	30
Weak	2	20
Not there	0	0
Total	10	100

Most companies develop the supply chain strategies after the defining the corporate strategy although this approach can deliver some value, it is limited in supporting the infusion into the corporate strategy development of very good supply chain model options, which could significantly improve the corporate strategy.

The link between the corporate strategy and the supply chain strategy is weak in some companies compared to others. Linkages are stronger in companies that have operated in the industry longer this is attributed to industry and organization learning.

Table 4.6: Institutional factors

	Frequency	Percentage
Strongly Favorable	0	0
Favorable	2	20
Unfavorable	7	70
Strongly Unfavorable	1	10
Not Sure	0	0
Total	10	100

The institution factors such as regulations, taxation, government tariffs and energy cost are mainly viewed as unfavorable to supply chain strategy implementation, this was mainly attributed to the fact that Kenya has one of the highest government tariffs in the world .Although LPG is zero rated, taxes on cylinders and accessories is high and paid in advance which adversely affects the cash flow of the marketers. Others were of the opinion that ERC regulations were necessary for the welfare and safety standards in the industry.

4.2.2 Qualitative Analysis

The big companies (MNC) are faced with communication and coordination challenges, this is due to their size and structures in the companies. The large companies such as Shell, Total Kenya ,Oil Libya that has bigger operating capacity they have ventured into hospitality arrangements and agreements with other smaller players who don't have the capacity; thus raising their returns through hospitality fees and also avoid incurring huge fixed costs on idle equipments .

Product unavailability as well as product shortage, unaffordability, lack of public awareness and poor distribution infrastructure is among other challenges faced. The Kenyan government as a major key partner in the supply chain has in the recent past made Interventions both fiscal and regulatory. It has zero-rated taxes on the product making LPG more affordable. It is also working on modalities to remove taxes on LPG cylinders and other appliances. It has also sought to expanding import and storage capacity, expanding transport capacity, and Conducting public information campaigns to promote LPG use.

4.3 Research Objective

The Energy Regulatory Commission's recent intervention has impacted on the LPG market, of e standardization of bottles and regulators has led to increased consumer access to LPG. The number of licensed LPG marketers and brands is also steadily increasing resulting in increased market competition that is good for service delivery and pricing .The standardization of gas cylinder valves has spurred stiff competition in the LPG market. The competition is so stiff that some MNC's are now considering relocating from the country due to pressure from independent fillers

Before the standardization of cylinders the non inter-changeability of cylinders meant that households were limited to one supplier making it difficult for marketers to expand their market shares due to high switching costs on the consumer. Moreover it also represented a significant barrier to LPG uptake. Most respondents were of the opinion that the standardization of cylinders has encouraged the illegal dealers who have invaded the LPG market .The illegal dealers are known to sell under weight products.

They also adulterate product thus exposes consumers to the danger of domestic fires and deadly explosions. Moreover they are known to refill or use legal marketer's cylinders, thus posing major revalidations cost to marketers. LPG Marketers are constantly faced with shortage of cylinders even after injecting new cylinders into the market. This is attributed to the illegal dealers to who illegal use marketer's cylinders to trade eating into the marketers' margins and posing as a major implementation challenges.

4.3 Research Objective

This research had one objective that is to determine implementation challenges of LPG supply chain strategies in the oil industry in Kenya. In today's competitive business environment great need to think strategically about the supply chain has never been more important. Supply chains have shifted from a cost focus to a customer focus and now currently to a strategic focus; never the less the success of a strategy is only as good, as the company's ability to fully and properly execute it.

Strategy implementation, involves delicate and sensitive matters such as resource mobilization, restructuring, cultural changes, technological changes, process changes, policy and leadership changes. The changes can be adaptive thus calling for installation of known practices, innovative by introducing practices that are new to adopting organizations or radically innovative introducing practices new to all organizations in the same industry, and these come with major challenges.

The LPG marketing companies are faced with stiff competition and shrinking market shares this poses a major challenge due to decreased financial capacity to implement capital intensive strategies, thus some marketers are now involved in heavy advertising and promotions for example Kenol Kobil promotion as well as Total to make the customer aware products unlike in the past where LPG advertising and promotions were rare in the industry.

Limited Storage capacity has been key challenge to most companies, however marketers are now investing heavily on storage capacity for example Total Kenya installed new LPG tanks raising its product storage capacity from 120 metric tones to 300 metric tones. Gulf also known as premium gas has also invested in its own LPG storage a filling facility rather than depending on hospitality from other marketers.

Technological knowledge, LPG safety, legal , regulatory requirements and standards from are also critical challenges ,to combat this marketers in collaboration with the Energy Regulatory Commission and PIEA are now rolling out education and sensitization campaign on LPG Training of staff is critical especially the technical staff such as engineers , however there is need for staff go through regular training to ensure that consistent service especially in the forecourts and also to keep abreast changes in the industry and the technology.

There are a number of hurdles to companies in the industry implementing supply chain strategies: poor implementation planning, lack of vision of set strategy, lack of trust, executive commitment and poor supply chain management skills. Poor planning, lack of vision, developing of supply chain strategy without a clear understanding of the entire business case and value propositions, confusing or conflicting communications to the organization where objectives may be contradictory are symptoms of implementation failure (Happek 2005).

Managerial complexity are also major challenges to implementation such as misaligning supply chain strategies, structures, business culture and provision of needed recourses. Several solutions to the challenges are recommended; information transparency, collaboration, collaborative planning, shared investment/benefits and product availability.

CHAPTER FIVE: SUMMARY, CONCLUSION AND

RECOMMENDATIONS

5.1 Introduction

This chapter details the summary of the findings in relation to the objective of the study. It also gives the implications of the study to the identified stakeholders in the importance of the study, while highlighting the limitations of the study and it will finally give the necessary recommendations for further research to up coming researchers.

5.2 Summary Finding

In summary this study has identified that supply strategies support the strategic direction of the organization. It has also established the need of aligning SCS with the corporate strategies to efficiently achieve objectives. The research has identified that the implementation of the strategies is not without challenges; the challenges arise from sources internal and external to the company.

A number of challenges have been identified to affect the implementation of LPG supply chain strategies: a top-down or laissez-faire management style, poor vertical communication plus inadequate down-the-line leadership skills and development. Unclear strategy and conflicting priorities, as most companies develop their supply chain strategy after defining the business strategy.

The chain subsidiaries are mainly faced with communication challenges, as well as delays this is mostly attributed by their sizes and structures. Dual or multiple chains of command exist in these companies posing fundamental communication challenges due to shared negotiating powers, responsibilities, use of resources and priorities that more or less lead to conflict or misunderstanding among sub-ordinates. There also face barriers to implementation between functions particularly between the sales department and operations this often happens when communication and collaboration is not clear thus leading to constant delays in implementation.

Poor infrastructure or the lack of it, particularly roads is one of the key challenges to the implementation of LPG SCS. The poor state of roads is a factor identified by most marketers that discourages them from implementing their expansion supply chain strategies to remote areas. The rail transport is also a major bottleneck and forces the companies to use expensive road transport, the rail freight rates for LPG transport are also very high.

The high cost of doing business is another challenge with limited funding available. The large up-front cost of LPG cylinders and appliances is a major hurdle for most marketers. Furthermore the procedures for setting up and expanding LPG supply business are very difficult and expensive with many requirements and government bureaucracies involved. Most marketers were of the opinion that the regulatory framework; licensing, health & safety, etc is very tedious and costly that it deters private LPG distribution in some regions.

Economic and Political-legal factors were identified as challenges to SCS implementation. The purchasing power depends on current income, savings, prices and credit availability, thus change in the direction of the economies in the country and the international market present changes in the purchasing power and hence the overall financial performance of an organization.

Supply chain strategy implementation is also affected by unanticipated changes in the government policies regarding taxation, industry cooperation, environmental protection, education policies for example there is market jitter over the governments plan to control LPG prices and the reintroduction of tax on LPG.

The regulation uncertainty in the industry is a challenge to implementation as last year the ERC reigned in on oil marketing companies by the introduction of fuel price controls, which curtailed marketers from adjusting prices at will and thus eating into their profit margins, now the regulator wants to replicate the same for LPG. Despite the fact that the introduction of price controls for LPG would be great news for consumers with early predictions showing that prices could decline by as much as 50 per cent, it will be an added pain for oil marketing companies already affected by fuel price controls.

Marketers site the lack of adequate import and storage facility causes to them to incur huge demurrage costs. Limited storage capacities, offloading constraints at the import terminal means that imports are limited to small tankers with correspondingly higher costs, the source of supply for small cargoes of LPG is also limited.

The government through KPC has proposed storage facility that is being constructed by the Africa Gas and Oil Company, set for completion at the end of the year. The facility will have a capacity to handle 14,000 tonnes and it's projected to eliminate the importation and supply constraints.

Premier Gas, a newly incorporated LPG trading company has made a revolutionary proposition to avail partially filled Cylinders to low income earners. PIMA gas a brand that will enable the lowest income segment of the population to buy affordable amounts of gas. Similarly National Oil Corporation has recently launched a mini mobile LPG filling plant that can fill as little as 1 kilo of LPG into existing cylinders, projecting that the facility would help reduce on the financial load burdening the ordinary citizen. Giving their customers the flexibility of choosing how much gas they would like to buy and in return growing their respective market share .However the implementation of their strategies is not without challenges: public awareness and safety concerns from ERC and the general public.

5.3 Conclusion

Corporate strategy gives the overall direction of a company wishes to go, while as the supply chain strategy constitutes the actual operations of that company to meet a specific supply chain objective. Supply chain strategies are important as they operationalize and support the corporate strategy they also focuses on driving down operational costs and maximizing efficiencies.

Understanding how company chooses to compete is an important factor that policy makers need to consider when formulating the supply chain strategies. Similar to formulating a business strategy, it is necessary for supply chain strategists to consider the company's core competencies, focus, and the means of differentiation.

It is imperative for supply chain strategies that have been formulated to be implemented as they are of no value if not executed. Supply chain strategy implementation just like Strategy implementation is largely an internal administrative activity. It involves working through others, organizing, communicating, motivating, resource allocation and creating strong links between strategy and how the organization operates. It also the process of converting the formulated supply chain strategies into viable operations that will yield the organization's targeted results. Top management support, strategy ownership, commitment, value and risk management techniques are important elements for successful implementation.

Supply chain are not to be formulated in isolation, Successful implementation is higher when there is collaboration between the various functions in the organization .In most companies supply chain strategy formulation is viewed as a top management affair, however actively involvement and accountability of functions such as Finance, Marketing and IT departments in the process formulation raises the chances of successful implementation.

Supply Chain Strategy implementation can pose a number of challenges that at times depend on the type of organization and prevailing internal external circumstances. Many challenges in strategy implementation can be avoided if strategy development is coupled with implementation. Failure to understanding of a strategy and inability to link strategy formulation and implementation coupled with resources allocation and communication has a negative impact on implementation.

The Development of an implementation plan before the actual implementation is critical. The plan should include activities and tasks, roles, responsibilities, a corresponding timeline, and performance metrics. Documenting all the tools, such as operational plans, functional strategies and policies is necessary for successful strategy implementation. Certain issues need to be assessed and balanced when planning for implementation, such as having in place the right business processes, personnel and infrastructure to enhance chances of successful implementation

The company and its organizational culture play a key role in the implementation of a supply chain strategy. Lack of ownership of strategy as well as commitment to the full implantation of SCS, lack of unity also known as the "Tower of Babel" problem where people in the company do not speak a common supply chain language and conflicting objectives, poor strategy communication to all stake holders are other identified challenges.

Despite the fact that supply is becoming more strategic in the Oil industry implementation of critical strategies is still lagging particularly those supply strategies that require more resources longer implementation timeframes and cross-functional support .Only a small percentage of LPG supply chain strategy implementations in the industry run on-time and on-budget, company culture, lack of leadership and poor supply chain visibility are the three main causes of implementation failure.

5.4 Recommendations

The study findings gave empirical evidence the implementation of supply chain strategies is not without challenges from internal sources and external sources the researcher recommends that to overcome challenges related to core competence marketers and industry players need to widen training and education of the sector workforce on appropriate business operational, and safety practices and moreover employ, evaluate the skills and leadership required ,design formulate and implement SCS efficiently. Cooperation collaboration and continuous transfer of knowledge between the key players in the industry is vital so as to overcome implementation handles.

Many challenges in strategy implementation can be avoided or minimized if strategy development is coupled with implementation. Supply chain strategy should always support the intent of the business strategy and in light of this fact that the researcher recommends that LPG marketers should formulate and align SCS with their respective corporate strategy .This will aid to bridge the gaps and reduce risks associated with developing these separately such as; uncertainty of the cost and benefits.

Costs and benefits involve if formulation of the SCS without a clear understanding of the business case and value propositions, the risk of using different or new resources in the operational development that was not known to the original corporate strategy thinking, risk of communicating confusing or conflicting objectives to the organization.

The study recommends the involvement of the distribution operations staff as well as suppliers and other stakeholders; in the formulation and implementation of supply chain strategies these will minimize conflict, change resistance as well build on ownership and commitment to successful implementation. Additionally involvement of staff in decision making as well as encouraging input from distributors and customers in identifying areas for potential productivity and sales improvement will help in overcoming implementation challenges.

The researcher recommends that marketers invest in storage facilities to increase capacity rather than fully relying on KPRL. Uncertainty and risk are inherent in every supply chain as customer demand can hardly be forecast exactly, economical and political environment are also subject to change and machines, vehicles are bound to break down. Industry trends, as well as outsourcing, offshoring, and production significantly increase the level of risk in the supply chain. Thus, the researcher recommends corporation ,coordination and communication through out the internal and external supply chain and as well as management of the implementation process so as eliminate as much uncertainty and risks.

The government as a player in industry has a key role to play in reducing the barriers, such as developing distribution structure, including basic road transport for marketers to establish distribution networks as one of their key supply chain strategies, its also has a mandate to change the widespread misconceptions of the safety and benefits of LPG by creating public awareness and educating people on the benefits of LPG.

To overcome illegal dealers and the escalating malpractices which hamper growth and consumer safety, the researcher recommends that the ERC should continue to enforce LPG inspection and track monitoring, compliance in the industry as well as engage the industry players for joint solutions .Moreover the ERC should reign in the unscrupulous traders and protect consumers as well as legitimate marketers. Strong and effective law enforcement measures must be put in place to attract new investors in the sector.

The study recommends than where there is inability to collaborate and solve problems among industry and trading partners, a multicompany consensus must exist or be cultivated as well as a enforcement of new rules by the stronger trading partners for example the government. Marketers are encouraged to form a strong non political negotiating board, a board that will represent the interests of the marketers' country wide. To fill the existing knowledge gaps in the LPG industry the study recommends that marketers in corroboration with the government bodies invest in training and research development.

5.5 Limitations of the study

This study was faced with several limitations, as it was carried out at a period of stiff industry competition and therefore some companies were not keen on divulging much information especially about their supply chain strategies and their implementation challenges. While some filled in the questionnaires but decided stamp them for authenticity. Others declined to divulge any information in fear of competition. The study was also conducted within limited time and resources necessitating a sample survey.

5.6 Suggestions for Further Research

There is need for further research to capture both the elements of successful supply chain strategy implementation, and the factors that determining the level of implementation .A study to investigate the true extent of implementation of supply chain strategies like the planed increased import and storage capacities of LPG a single product in the industry.

Also a study to investigate the impact of implementing the Supply chain strategies, to determine whether companies be distinguished from one another on the basis of this extent of implementation as per promised benefits and actual benefits and the overall gap between strategy importance and strategy implementation.

5.7 Implications of the study on Policy, Theory and Practice

The growing consumer demand for LPG and the stiff competition calls for a greater need to be matched with efficient and effective supply chain infrastructure and systems for efficiency, affordability and reliability. Due to the challenges facing the industry rising inflation, weak shilling, poor road -railway infrastructure, illegal dealers, limited storage and import facilities, inefficient refinery coupled with product ignorance, there is an urgent need for the policy makers in the industry to effectively implement set strategies in light of existing challenges .

The study will help the Policy makers to choose the right areas to focus and understand the implications of the Implementation for all trading partners. Moreover the study will give foresight to strategists and strategies implementing teams on possible implementation handles, as well as offering them with possible solutions.

Few studies have been conducted especially in the Kenya on supply chain strategies and implementation challenges .The study has had an impact on the body of knowledge by showing how companies can identify SCS implementation challenges and how to overcome them and remain strategic in a highly regulated industry through in addition to expanding the existing body of knowledge will form basis for further research.

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Appendix I: List of Companies in the Oil Industry

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Source: The Exchange pool Kenya Insight Magazine 2012

Appendices

Appendix I: List of Companies in the Oil Industry

1. Oil Libya
2. Shell
3. Boc
4. Nock
5. Kenol Kobil
6. Total
7. Pangas
8. Hunkar
9. Addax
10. Fossil
11. Q-gas
12. Hashi
13. Gulf

Source: The Exchange pool Kenya-Insight Magazine 2012

Appendix II: Questionnaire

The questionnaire has two parts, part A is intended to present a background of the company, and section B deals with aspects of LPG supply chain strategy and its implementation.

Section A

Please indicate,

1. Name of your organization (optional) _____

2. What's the ownership structure of your Organization?

Sole ownership

Partnership

Franchise

Chain subsidiary

Other (indicate) _____

3. Basic information about your organization

Number of countries the company is present _____

Number of employees _____

Number of LPG depots and plants _____

Number of wholesale LPG outlets _____

Number of retail LPG retail outlets _____

LPG Market share of the company _____

4. List your major LPG competitors

5. Is your organization affected faced by LPG supply limitation/ shortage?

Yes

No

6. Has your organization employed any supply chain strategies to deal with shortage or excess product?

7. Are the supply chain strategies implemented all through the entire LPG market _____

Section B

Your opinion is very important-please approve or disapprove of each statements listed below .Per question kindly indicate one number between 0 and 4 as your answer in the boxes on the right side of each question

0= I do Not Know 1=I strongly Disagree 2= I Disagree 3= I Agree 4=I strongly Agree

Top Management team

1. Management is actively involved in the formulation and implementation of supply chain strategies in your organization

2. Management understands the organization's LPG supply chain

3. Management provides all the necessary resources to carry out implementation

If so, please give some examples of the resources provided:

.....

4. Management displays an ongoing commitment to LPG supply chain strategy

3. Management consults staff in the different departments when formulating and implementing strategy

Strategy

1. The LPG Supply chain strategy is formulated together with the corporate strategy
2. The LPG Supply chain strategy is aligned with the corporate strategy
3. All supply chain strategies are implemented fully

Coordination

4. All departments and key staff are involved in the formulation and implementation of the supply chain strategy
5. Implementation of supply chain strategy is well coordinated within the company
6. Implementation of supply chain strategies is done within the set time line and budget

Communication

1. LPG supply chain strategies are clearly communicated to staff, suppliers and customers
2. I understand and know all formulated LPG supply chain strategies in my company
3. Vertical Communication in the company is effective
4. Important information is presented to all stakeholders
5. Its easy to communicate about my work related issues to my superior

Environment

1. The energy regulatory commission is efficiently regulating and coordinating the industrial supply chain strategies (standardization of LPG cylinders and exchange pool guidelines)
2. In relation to LPG, the institutional factors such as the Government tariffs, Taxation, energy cost, infrastructure in Kenya are favorable for business

Culture

1. Employees and the supply chain partners react positively to change
2. The company constantly and continuously offers trainings on supply chain management and industry issues to supply chain team and relevant staff
3. Suppliers in the LPG supply chain are dependable
4. The company integrated its activities with those of its suppliers
5. The goals of LPG supply chain components and your supply partners similar
6. Location of the depots and service station affects cost, differentiation of products

Thank you for your cooperation

Appendix III: Introduction Letter to Respondents

Leah Nyaguthii Njogu
University of Nairobi
Department of Business Administration
P.O .Box 30197
Nairobi.
1ST July 2012

Dear Respondent

COLLECTION OF SURVEY DATA

I am a postgraduate student at the University of Nairobi, School of Business. I am undertaking a management research Titled **“Challenges facing the implementation of LPG supply chain strategies in Kenya”**. This is to kindly request you to assist us collect the data by filling out the accompanying questionnaire. Your name will at no time appear in the research finding. The information provided will be used exclusively for academic purposes. My supervisor and I assure you that the information you give will be treated with strict confidence. The findings of this research can be availed to you upon completion of the research on request. In case of any questions pertaining to this project please do not hesitate to contact us on the above address.

Regards,

Leah Nyaguthii Njogu
MBA Student

Dr. Z. B Awino
University Supervisor

Appendix IV: Kenya LPG Sales (January -March 2012)

COMPANY	MKT SHARE %
SHELL	26.0
TOTAL KENYA	24.1
LIBYA OIL	21.7
KENOL KOBIL	12.4
HASHI	4.6
ADDAX	3.8
PREMIUM	1.5
NOCK	1
HASS	1
GULF	0.8
ENGEN	0.7
FOSSIL	0.6
GALANA	0.4
MGS	0.2
BAKRI	0.2
RIVAPET	0.2
OTHERS	0.8
TOTAL	100

Source: Petroleum Institute of East Africa (2012) Petroleum Industry data. Retrieved from

<http://www.petroleum.co.ke>

Appendix V: Letter of authority to Collect Data



UNIVERSITY OF NAIROBI SCHOOL OF BUSINESS MBA PROGRAMME

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE 28/03/2012

TO WHOM IT MAY CONCERN

The bearer of this letter LEAH NYAGUTHII NJUGU

Registration No. DCI/63322/2010

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.



IMMACULATE OMANO
MBA ADMINISTRATOR
MBA OFFICE, AMBANK HOUSE