

**BENCHMARKING THE ORDER DELIVERY PROCESS FOR CONTINUOUS
IMPROVEMENT- THE CASE OF THE KENYAN OIL INDUSTRY. //**

UNIVERSITY OF NAIROBI
LOWER KABETE LIBRARY

BY

TOM O. AMOLO

**A Management Research Project submitted in Partial Fulfilment for the
Requirements of the Degree Master of Business and Administration, Faculty of
Commerce, University of Nairobi.**

October, 2002

DECLARATION

This project is my original work and has never been submitted for a degree in any other University.

Signed



TOM O. AMOLO (D61/P/8523/98)

Date

30/10/2002

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

Signed



John Kenduiwo

Senior Lecturer, Department of Management Science,
University of Nairobi.

Date

OCT 30, 2002

DEDICATION

I dedicate this work to
my father, Josephat Amolo.

ACKNOWLEDGEMENT

This study would not have been successful had it not been for the valuable support, assistance and guidance of various nature from several colleagues, workmates and my family members. I would like to express my heartfelt appreciation and gratitude to all of them in general. I however feel obliged to mention a few names here to acknowledge their special contribution.

Firstly I would like to acknowledge the special guidance and valuable contribution of my supervisor Mr. John Kenduiwo during the entire period of the study. I am also very grateful to all the managers of the Kenya Oil companies who agreed to spare their valuable time to provide the crucial information sought by this study.

Secondly I would like to express special thanks to Mrs. Damaris Nguyai, our office secretary at Nairobi Joint Depot, who agreed to type all my research work. If it were not for her splendid effort and dedication this study would have taken a considerably longer time to complete.

Finally I would like to express special thanks to my wife Irene, our daughter Judy and our son Michael, for their understanding and support during the entire period of my MBA course. I especially remember the trying period when I was based outside Nairobi (Kisumu) and thus had to deprive them of my weekends and instead attend classes at the university.

Lastly but not least I would like to thank all my friends and relatives who accepted my changed social life during the entire period of the course.

TABLE OF CONTENTS

| | PAGE |
|---|-----------|
| Acknowledgement..... | I |
| List of tables..... | IV |
| Abstract | V |
| 1 INTRODUCTION | 1 |
| 1.1 Background | 1 |
| 1.2 Statement of the problem | 3 |
| 1.3 Objective of the study | 5 |
| 1.4 Importance of the study..... | 5 |
| 2 LITERATURE REVIEW | 7 |
| 2.1 Overview | 7 |
| 2.2 Definition of terms | 7 |
| 2.3 The Concepts of physical Distribution | 8 |
| 2.4 The strategic use of Physical Distribution | 9 |
| 2.5 Physical distribution function | 11 |
| 2.6 Total systems approach to Physical Distribution | 12 |
| 2.7 Performance Indicators | 13 |
| 2.8 Objectives of Benchmarking | 15 |
| 2.9 Types of Benchmarking | 15 |
| 2.10 Sources of information about outside organizations | 16 |
| 2.11 Challenges and successes of Benchmarking | 17 |
| 2.12 Supply chain planning and control | 19 |
| 2.13 Logistics information system..... | 20 |
| 3 RESEARCH METHODOLOGY..... | 22 |
| 3.1 Type of study..... | 22 |
| 3.2 Population..... | 22 |
| 3.3 Data Collection | 22 |
| 3.4 Data Analysis | 22 |

| | | |
|----------|--|-----------|
| 4 | DATA ANALYSIS AND FINDINGS..... | 24 |
| 4.1 | Introduction | 24 |
| 4.2 | General Overview of Companies' characteristics | 24 |
| | 4.2.1 Organization of Operations function | 24 |
| | 4.2.2 Responsibilities of operations function | 25 |
| | 4.2.3 Company Ownership | 26 |
| 4.3 | Participation in preparation of operations procedure | 26 |
| 4.4 | Performance standard used by Kenya Oil Companies | 27 |
| 4.5 | Constraints hindering achievement of set objectives | 28 |
| 4.6 | Performance measures used in the order delivery process | 29 |
| 4.7 | Awareness of performance measures used by other companies | 30 |
| 4.8 | Causes for Review of Procedures | 31 |
| 4.9 | Scanning the business environment..... | 31 |
| | 4.9.1 Sources used to establish new performance standard | 32 |
| | 4.9.2 Review of performance standards | 33 |
| 4.10 | Impact of benchmarking on performance | 33 |
| 4.11 | Company policy on benchmarking | 34 |
| 4.12 | Familiarity and use of different types of benchmarking | 35 |
| 4.13 | Difficulties encountered in planning and implementation of benchmarking | 36 |
| 5 | DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS | 37 |
| 5.1 | Discussions | 37 |
| 5.2 | Conclusions | 39 |
| 5.3 | Recommendations | 41 |
| 5.4 | Limitation of the study | 41 |
| 5.5 | Suggestions for further research | 42 |
| | REFERENCES..... | 43 |
| | ANNEXES | |
| | Appendix I..... | 47 |
| | Appendix II..... | 48 |

LIST OF TABLES

| | PAGE |
|---|------|
| Table 1: Reporting position of operations functions | 24 |
| Table 2: Responsibilities of Operations functions | 25 |
| Table 3: Company Ownership | 26 |
| Table 4: Extent of involvement in preparation of procedures | 26 |
| Table 5: Standards used by Kenyan Oil Companies | 27 |
| Table 6: Constraints hindering achievement of standards | 28 |
| Table 7: Performance measures used in the order delivery process..... | 29 |
| Table 8: Awareness of performance measures used by other companies..... | 30 |
| Table 9: Triggers for review of procedures | 31 |
| Table 10: Frequency of Assessment of business environment | 32 |
| Table 11: Companies in which local oil companies look for new benchmarks..... | 32 |
| Table 12: Impact of benchmarking on performance | 33 |
| Table 13: Familiarity and use of different types of benchmarking..... | 35 |

ABSTRACT

The study sought to investigate and document the use of benchmarking as a tool for continuous performance improvement by the Kenyan oil companies. It was based on eight oil companies that are registered by the ministry of energy.

The objectives of the study were; to determine the extent to which Kenyan oil companies use benchmarking as a tool for continuous performance improvement, to establish whether there has been improved performance of Kenyan Oil companies who have used benchmarking as a strategy for continuous improvement and to document the challenges facing the Kenyan Oil companies in benchmarking.

Cross sectional survey was used in this study. Primary data was collected by use of a questionnaire. The data was obtained from eight of the eleven firms who were sent questionnaires. The findings of this study indicate that Kenyan oil companies do not systematically use benchmarking as a tool for continuous improvement. There is lack of trained manpower in this area. They also face serious obstacles when they try to obtain information about other firms. This has made difficult for these oil companies to identify best practices against which they can benchmark their operations. Consequently they have used operations standards in the order delivery standard which might not necessarily be the best in the markets. However the study revealed that there has been improvement on the performance of those Kenyan oil companies which have used benchmarking in their operations.

In view of the study's findings a few recommendations have been made. First the Kenyan oil companies need to develop clear policies on the use of benchmarking Secondly they need to invest in resources to enable them carry out effective benchmarking. They need to train their staff on benchmarking activities ie diagnosis of company processes, planning for site visits and information gathering, implementation of the new processes learned during site visits etc. Finally it would be useful if Kenyan Oil companies can come together and form data centres to share benchmark information. Kenyan Universities could also consider forming data centres, which can be used to collect information on business processes. The Universities can provide such business process information to the Kenyan companies on consultancy basis at a fee. This would help in providing accurate information to the companies.

1 CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

All operations, no matter how well managed, are capable of improvement. In fact, in recent years the emphasis has shifted markedly towards making improvements one of the main responsibilities of operations managers. Before operations managers can devise their approach to the improvement of their operations, they need to know how good they are already. The urgency, direction and priorities of improvement will be determined partly by whether the current performance of an operation is judged to be good, bad or indifferent. All operations therefore need some kind of performance standard as a prerequisite for improvement. At its simplest, competitive performance standard would consist merely of judging whether the achieved performance of an operation is better than, the same, or worse than that of its competitors (Norman 2001).

Prior to 1994, Oil industry was a regulated sector and was dominated by only the multinationals. The Government, through the National Oil Corporation of Kenya (NOCK), controlled the retail prices, transportation cost, importation and refining of the products. In 1994, the industry was liberalised thus allowing the industry players to set their own rules of operations. Since then the industry has become very competitive, more so with the new entrants in the market, the ever changing customer requirements, and the legal requirement for compliance with stringent health, safety and environmental standards etc (Chepkwony, 2001).

Among the new entrants are firms owned by Kenyan investors. These firms are commonly referred to as Independent Petroleum Dealers (IPD's). Unlike other owners of petroleum outlets the IPD's are not contractually bound to distribute and retail only the exclusive products of a particular supplier or distributor. This has led to increased competition in the industry in the areas of marketing and distribution; originally more severe in Nakuru, Kisumu and Eldoret where Kenya Pipeline Company (KPC) installed "Common User" loading facilities. National Oil Corporation (NOCK) this year installed a similar facility in Nairobi. In 1999 Kenya

Independent Petroleum Dealers Association (KIPEDA) was formed. It represents the interest of its members (IPDS) in the market (Muchai, 1999).

The foregoing scenario has made the petroleum industry in Kenya very competitive. Industry structure has a very strong influence in defining the rules of competitive game as well as the strategies potentially available to firms operating in the industry.

Hofer and Schendel (1978) observed that for firms to be effective and hence successful, they should respond appropriately to changes that occur in their respective environments

Major escalation of environmental turbulence means a change from familiar world of marketing and production to an unfamiliar world of new technologies, new competitors, new consumer attitudes, new dimensions of social control and above all an unprecedented questioning of the firms role in society, (Ansoff and McDonnel, 1990).

Competition in the petroleum industry in Kenya is essentially at three levels: Procurement (these are firms that import refined or crude oil), Distributors (firms distributing the refined products to retail outlets or to industrial users) and Retailing (firms that have retail outlets i.e. petrol stations and sell directly to consumers) (Murage 2001). My study will look at the order delivery process in the distribution function.

With this trend, the role of operations departments has become very key to the success of the organisation. There is need to ensure that the distribution system is efficient, order/delivery system is effective, flexible and customer focused, the transportation system is effective and the operations of the depots are done in line with Safety, Health and Environmental requirements. But given that most of these companies are foreign-owned, they have different standards set by their parent owners. And in those cases where the government has set the standards (like the Petroleum Bill Spelling out issues regarding environmental pollution, disposal of waste etc.) these companies use different processes to comply with the standards.

1.2 STATEMENT OF THE PROBLEM

Kenya's manufacturing and service sectors have experienced drastic changes in the last few decades. Increased competition due to economic liberalisation (particularly conditionalities imposed by the IMF and World Bank (Mbeche, 1997) and globalisation has resulted in consumers having more choice and being more demanding. The economic barriers are disappearing at an increasing rate. Today few industries produce in and serve only the home market. The phrase "we live in a global economy" has become a cliché, but is certainly truer than ever. In order to remain competitive, local companies have to develop competencies in continuous improvement strategies (Nahmias, 2000). One of the tools used in continuous improvement is benchmarking.

The advent of liberalisation in October 1994 in Kenya's Petroleum sub-sector has witnessed unprecedented influx of players into this sub-sector. This has led to stiff competition, as the fight for customers seems to be a never-ending war. The so-called major oil companies have lost substantial part of their market share. This has been a bitter pill to swallow (Chepkwony, 2001). To survive in such a competitive environment oil firms have had to adjust their responses by critically assessing the performance levels of their key activities. One of these key activities is continuous improvement of the order delivery process within the distribution function. There is need to benchmark the performance of order delivery process against the best practices that have been achieved by firms operating in the same environment. The increased number of firms in this sub-sector has given consumers a wide variety of alternatives from which to make a choice. This, coupled with changes in socio-cultural trends such as education and the increased importance of time has forced oil companies to be more sensitive and responsive as customers are now demanding value for their money, (Murage, 2001).

Few studies have looked at the operations strategic response of firms due to changed environmental conditions. Kombo (1997) addressed the issue of strategic response of motor Vehicle Franchise holders in Kenya as a result of changed environmental conditions. He found out that firms have made substantial adjustments in their strategic variables in order to survive.

Bett (1995) addressed the issue of impact of the ongoing economic reforms on the Kenyan dairy industry. His findings were that significant adjustments in the marketing mix elements have been made in order to remain competitive. Wamathu (1999) addressed the issue of strategic postures and action evaluation in the Kenyan oil industry and found out that all players were in the aggressive postures, albeit in varying degrees. Chepkwony (2001) looked at the strategic responses of petroleum firms in Kenya to challenges of increased competition in the industry. He observed that firms have generally made substantial adjustments in order to survive in the competitive environment. Nyamwange (2001) looked at the operations strategies applied for the competitiveness of Kenyan large manufacturing firms. He found that most Kenyan manufacturers believed that manufacturing strategies of their companies enhanced long-term business performance and success. Murage (2001) looked at the competitive strategies adopted by members of the Kenya Independent Petroleum Dealers Association.

A number of studies have also looked at the generic area of strategy. They include, among others, Aosa (1992) who did an investigation into aspects of strategy formulation and implementation within large private manufacturing companies in Kenya. Results of the study confirmed that foreign companies differ significantly from local / Kenyan owned ones with the former being more formal. This fact was attributed to the influence from parent companies, access to managerial resources, formal organisational structures and professional managerial approach to management.

Studies by Maina (2001), Nyamwange (2001) made the following suggestions for further research: That there is need to detail the specific practices on each of the operations strategies like flexibility and systems design, the measuring of performance and evaluation of operations strategies by successful companies, research to find out which of the performance priorities are order winners and order qualifiers in the regional economies among others. This study is partly a response to the challenge and reflects the desire for a deeper understanding of how local companies can progressively develop strategic operations competencies in the order delivery process through continuous improvement by use of benchmarking.

The researcher is not aware of any research done in Kenya that has looked into the use of benchmarking to achieve continuous performance improvement of order delivery process within the distribution function. This study will focus on the use of benchmarking among Kenyan oil companies as an improvement strategy of order delivery process.

1.3 OBJECTIVE OF THE STUDY

The objective of this research is to: -

- (a) To determine the extent to which Kenyan oil companies use benchmarking as a tool for continuous performance improvement of order delivery process.
- (b) To establish whether there has been improved performance of Kenyan oil companies who have used benchmarking as a strategy for continuous performance improvement of order delivery process.
- (c) To document the challenges facing the Kenyan Oil companies in benchmarking of order delivery process to achieve continuous performance improvement.

1.4 IMPORTANCE OF THE STUDY

The findings of this study are expected to provide logistics managers and other decision-makers with insight into the benefits of using benchmarking as a continuous performance improvement strategy. The procedures used in benchmarking by leading companies shall help other practitioners in redesigning their own procedures. Hopefully the study will have enriched the literature and procedures on benchmarking in Kenya.

The findings may also attract other researchers to venture into areas in operations performance improvement strategies that have not been studied in the African context. The available literature is full of case studies from the west, which as pointed out by Aosa (1992) cannot be replicated without amendments in the companies operating in Africa. We have our own peculiar characteristics manifested in the level of developments i.e. literacy level, infrastructure, legal requirements etc.

The significance of this study is that it would help in highlighting areas in the order/delivery process in which the local companies can develop competencies and capabilities leading to competitive advantage. It is also hoped that this study will help in recognising the fact that local environment constraints, though a limiting factor as far as attaining world class performance is concerned, should not hinder the application of benchmarking as an improvement strategy in the local environment context.

2 CHAPTER TWO

LITERATURE REVIEW

2.1 OVERVIEW

In the context of a competitive environment continuous improvement plays a key role in ensuring that a firm remains competitive. Implementation of benchmarking as a continuous improvement strategy becomes a key success factor.

Kotler (2000) explains that firms are in competition with each other when they try to sell identical products and services to the same group of customers or try to employ the factors from the same group of suppliers. This is the scenario in the Kenyan petroleum industry, where the products are largely undifferentiated or are close substitutes. These firms source their factors of production from the same group of suppliers ie transport services, maintenance services, supplies of equipments and parts etc. Guiltan and Paul (1994) observes that environmental forces largely influence competition within an industry, especially those related to legal and regulatory actions, technology, economic forces, demographics, social and cultural values. Specifically both the identity of competitors in terms of their characteristics and the type of strategic focus they take may change because of the entry of new firms, deregulation, changing economic conditions or changing social cultural values or technology, etc.

2.2 DEFINITION OF TERMS:

2.2.1 Benchmarking

Benchmarking is the practice of establishing internal standards of performance by looking to how world class companies run their businesses. Benchmarking can somewhat philosophically be defined as follows (APQC, 1992):

Benchmarking is the practice of being humble enough to admit that someone else is better at something, and being wise enough to learn how to match them and even surpass them at it.

This definition captures the essence of benchmarking, namely learning from others. The core of the current interpretation of benchmarking is the *measurement* of own and the benchmarking

partner's performance level both for comparison and for registering improvement, *comparison* of performance levels, processes, practices etc., *learning* from the benchmarking partners to introduce improvements in your own organisation and, *improvement which* is the ultimate objective of any benchmarking study.

Benchmarking is thus the process of continuously measuring and comparing one's business processes against comparable processes in leading organisations to obtain information that will help the organisation identify and implement improvements (Andersen and Pettersen, 1995).

2.2.2 Performance measurement

This is the process of quantifying action, where measurement means the process of quantification and the performance of the operation is assumed to derive from actions taken by its managers (Nigel and Robert, 2001)

2.2.3 Continuous Improvement

Continuous improvement as the name implies, adopts an approach to improving performance which assumes more and smaller incremental improvement steps (Nigel et al 2001)

2.3 THE CONCEPT OF PHYSICAL DISTRIBUTION

Various authors have described physical distribution in various forms. Nevertheless the meaning remains the same: to get goods to customers in an economic way while ensuring customer satisfaction (Odondi, 2001). Bert (1987) describes physical distribution as the flow of finished goods from point of production to points of intermediate and final use. It is the vehicle for viewing marketing organisation in its external aspects, and for bridging the physical and non-physical gaps that exist in moving goods from producers to consumers through the exchange process. Ballou (1973) offers the same view by stipulating that physical distribution entails a broad range of activities concerned with efficient movement of finished products from the end of the production line to the consumer, for the purpose of providing a sufficient level of customer service (and the associated revenues) consistent with the costs incurred. McKinnon (1989) expounds on this description pointing out that the physical distribution activities consist

of a series of inter-related functions of transport, stockholding, storage, goods handling and order processing. These are the main activities in the order delivery process for any company. Best (1987) says that a decision regarding any of these parts affects all the others. The location of a warehouse influences the selection of transportation methods and carriers; the decision on carriers influences the optimum size of shipments; and so on. Kottler (2000) observes that physical distribution commences at the factory, whereby managers choose stockholding points or warehouses and transportation carriers that will deliver the goods to final destination in the desired time at the lowest cost. Thus physical distribution provides the necessary support of markets by availing the right quantity of goods at the right time (Marks and Taylor, 1967).

From the above it can be inferred that physical distribution, being the process of getting goods to consumers encompasses a series of linkages and relationships between a company and its customers. This physical transfer may be done directly or via intermediaries, with the sole purpose of having the right goods at the right places at the right time. A company's distribution efficiency is seen in terms of how well its physical distribution linkages work (Odoni,2001).

2.4 THE STRATEGIC USE OF PHYSICAL DISTRIBUTION

Best says that the strategic use of physical distribution may enable a company to strengthen its competitive position by providing more customer satisfaction and/or by reducing operating costs. Any company in distribution who intends to develop distinctive competencies in order delivery process needs to continuously improve its physical distribution system. He adds that the management of physical distribution can also affect a firm's marketing mix - particularly product planning, pricing and distribution channels. He points out that key here is for executives to:-

- (a) Understand what their organisation is trying to do and then,
- (b) Design an appropriate physical distribution system that will help, and not hinder the organisation in achieving its goals.

Best highlights the following four opportunities: -

- **Improve customer service:** A well-run logistics can improve the service a firm provides its customers - whether they are intermediaries or ultimate users. Furthermore, the level of customer service directly affects demand. This is true especially in marketing undifferentiated products (such as chemicals and most building materials etc) where effective service may be a company's only differential advantage. To ensure reliable customer service management should set standards of performance for each subsystem of order delivery process. These standards should be quantitatively measurable.
- **Reduce Distribution costs:** Best says that avenues to cost reductions may be opened by effective physical distribution management. For example, eliminating unneeded warehouses will lower costs, inventories and their attendant carrying costs and capital investment.
- **Stabilise prices:** Careful management of warehousing and transportation can help stabilise prices for an individual firm or for an entire industry. If a market is temporarily glutted with a product, sellers can store it until supply and demand conditions are better balanced. Such use of warehousing facilities is common in the market of agricultural products and other seasonally produced goods.
- **Create time and place utilities:** According to Ballou (1973), physical distribution activities are consequences of the distance and time gap between production's location and the point of consumption and of the inability or undesirability of having production output to respond instantaneously to the needs of the market place. According to Best, physical distribution creates time and place utility. He observes that Storage, which is part of warehousing, creates *time utility*. Storage is essential to correct imbalances in the timing of production and consumption. An imbalance can occur when there is *year-round consumption* but only *seasonal production*, as in the case of agricultural products. For instance, time utility is created and value is added when bananas are picked green and allowed to ripen in storage. He observes that skilful use of warehousing allows a producer to store a seasonal surplus so that it can be marketed long after the harvest has ended. In other instances, warehousing helps adjust *year round production* to *seasonal consumption*. A manufacturer may produce lawn mowers on a year round basis; during the autumn and winter the mowers are stored for

sale in the spring and summer. Transportation adds value to products by creating *place utility*. A fine suit hanging on a manufacturer's rack in a Sydney suburb has less value than an identical suit displayed in a retailer's store in David Jones. Transporting the suit from the suburbs to the CBD creates place utility and adds value to it (Douglas et al).

2.5 PHYSICAL DISTRIBUTION FUNCTION

Physical distribution, being the successive transfer of ownership along a marketing channel composed of producers, Wholesalers and retailers, or in terms of the physical movement of the goods from the factories through warehouses to shops, bridges the gap between production and consumption by fulfilling certain basic functions (Murage, 2001). Kottler (2000) refers to these functions as market logistics decision areas. They include:

- (a) How should orders be handled? (order processing)
- (b) Where should stocks be located? (warehousing/storage)
- (c) How much stock should be held? (inventory)
- (d) How should goods be shipped/transported? (Transportation)

Continuous improvement of each of these activities through benchmarking would lead to development of competencies in order delivery process. This would afford an organisation a competitive advantage over its competitors.

Order processing: Kottler (2000) explains order processing as one that includes order transmission by sales person, order entry and customer credit check, inventory and production scheduling, order and invoice shipment, and receipt payment. Today many companies are trying to shorten the order-to remittance cycle, i.e. the elapsed time between an order's receipt, delivery and payment, via use of an integrated order processing system. This is because the longer this cycle takes the lower the customer's satisfaction and the lower the company's profit. There has been various computer-based advances in order processing, with names such as *electronic data interchange* (EDI) and *Automatic replenishment* (Douglas et al). Under EDI orders, invoices and perhaps other business information as well are transmitted by computer rather than by *mail*. As such, EDI speeds up the process and literally reduces the associated paper work. Under automatic replenishment a retail store's computer knows when a product has been sold and, in turn, notifies the supplier's computer that a replacement is needed .

UNIVERSITY OF NAIROBI
LOWER KABETE LIBRARY

- **Transportation;** A major part of the physical distribution system in many companies involves the shipping of products to customers. Management must decide on both the form of transportation to use and the particular carriers (Douglas et al).
- **Inventory location and warehousing:** According to Miller and Layton the name of the game in physical distribution is inventory management. One important consideration is “warehousing “, which embraces a range of functions, such as assembling, dividing (bulk-breaking) and storing products and preparing them for reshipping. Management must also consider the size, location and transporting of inventories. These four areas are inter-related. The number and locations of inventory sites for example, influence inventory size and transportation methods. These inter-relationships are often quite complex, (Miller and Layton).

2.6 TOTAL SYSTEMS APPROACH TO PHYSICAL DISTRIBUTION

Douglas et al (1987) says that marketing is a total system of business action, and not a fragmented series of operations. They add that nowhere is this idea seen more clearly than in the matter of physical distribution. But it has not always been this way. Traditionally and unfortunately, this is still true in many firms - activities involved in physical distribution have been fragmented. Managerial responsibility for these activities has been delegated to various units that often have conflicting and even diametrically opposite goals (Miller and Layton). The production department, for instance, sets the production schedule. This group is interested in long production runs to minimise unit-manufacturing costs even though the result may be abnormally high inventory costs. The shipping departments look at the freight rates rather than the total cost of physical distribution. Thus carriers with low tonne-kilometre charges are often selected, and even though this may mean undue time spent in transit and requires large inventories to fill the long pipelines. The accountants want a minimum of funds to be tied up with inventories. At the same time the sales department wants to have a wide assortment of products available at locations near the customers. Under such conditions, it is impossible to optimise the flow of products. However, the total system approach to physical distribution can cut through the problem and result in the effective co-ordination of these activities (Douglas et al).

In physical distribution, management must deal with a large number of readily measurable variables (Best). Such problems lend themselves nicely to solutions by statistical and mathematical techniques. For instance, operations research, a technique involving the use of statistical models and methods is a particularly helpful tool. It has been used in determining the number and location of warehouses, the optimum size of inventories and the best transportation routes and methods. Computers are used to rapidly process the large quantities of data needed in these analyses (Douglas et al).

Marks and Taylor (1967) concludes that there are two notable constraints common with physical distribution: cost and service. In a firm's effort to supply the right quantity of goods, service considerations dictate large supplies, but cost requires small quantities in the interest of reduced inventory cost. When considering the strategies to employ to ensure goods are delivered at the right place a firm soon finds out that in terms of service there is need for several stock points to be located adjacent to the customers. However cost constraints dictate that the number of such stock points be reduced in the interest of reduced warehousing costs. In an effort to deliver goods to customers at the right time, a firm may desire to employ a strategy that ensures scheduling is accomplished via use of the fastest and safe means of transport. But transport costs dictate use of slower modes of transportation like road and rail carriers (Odoni, 2001).

Therefore in view of these constraints a proper application of physical distribution strategies requires a constant balance between the need of revenue-producing policies as reflected in customer service requirements), and cost-reducing aspects which adversely affect service and therefore overall performance.

2.7 PERFORMANCE INDICATORS

A central element in benchmarking is measurement and comparison (Eero and Stev,1995). Companies must measure the performance of their business processes and practices to be able to compare themselves to others and to identify benchmark partners who are better than

themselves. Furthermore, in order to recognise improvements based on benchmarking, the benchmarking company must be able to track performance over time. Therefore good performance indicators are an essential ingredient for successful benchmarking. Eero and Steve (1995) provided the following checklist which can help in choosing the right performance indicators to benchmark for continuous improvement.

2.7.1 Performance indicators to be measured

Eero and Steve say that one way to think about what is useful to measure is to consider three groups of indicators: performance; practice/process; and, enablers. Performance is the result of work practices and processes, which in turn are influenced by enablers such as leadership style, information technology, infrastructure, human resource policies etc. While more difficult to quantify, what separates average from world class companies is often the enabling elements. Benchmarking as a tool for taking action to improve performance, must therefore consider all these three types of data. For any given company, what to measure in each category depends on the company's business strategy and the areas most in need of improvement.

2.7.2 Units of measurement

Given that what to measure depends on a company's business strategy, the right units of measure will also be company specific. In deciding on the right performance indicators to benchmark one must therefore take into account the business strategy. For example if the business strategy is to achieve customer satisfaction then the performance indicator must be able to capture this. One must also develop a tool for measuring the performance indicator. Since it is important that everyone in the company help implement the strategy, the measure should apply to everyone. It is useful to adopt a few global measures which everyone can buy into, and help put into practice and use to drive improvement.

They observe that one of the key criteria for selecting a performance indicator for a large organisation is that the measure be easy to aggregate by level and department on a regular basis.

2.7.3 Responsibilities for measuring

The most successful benchmarking efforts are strategically driven with support from the top of the organisation, and involvement in benchmarking and performance improvement throughout the company. Eero and Stev suggest that senior management should determine the strategic goal. The core business processes should be selected by senior and middle managers, while

those closest to the processes in question should collect and monitor the process data.

2.8 OBJECTIVES OF BENCHMARKING:

Benchmarking is partly concerned with being able to judge how well an operation is doing. It can be seen, therefore, as one approach to setting realistic performance standards (Nahmias, 2000). It is also concerned with searching out new ideas and practices which might be able to be copied or adapted. For example a bank might learn some things from a supermarket about how it could cope with demand fluctuations during the day (Nigel and Robert, 2000). The success of benchmarking, however, is largely due to more than its ability to set performance standards and enable organisations to copy one another. Benchmarking is essentially about stimulating creativity and providing a stimulus, which enables operations to better understand how they should be serving their customers (Cartin, 2000). Many organisations find that it is the process itself of looking at different parts of their own company or looking at external companies which allows them to understand the connection between the external market needs which an operation is trying to satisfy and the internal operation practices it is using to try to satisfy them. In other words benchmarking can help to reinforce the idea of the direct contribution that an operation has to the competitiveness of its organisation (Nigel and Robert, 2000).

2.9 TYPES OF BENCHMARKING

The five general types of benchmarking are:-

- **Problem-based:-** In this case benchmarking is used as a tool to solve specific problems proving difficult to solve by other improvement techniques. This can provide not only “ a solution” but a major improvement (Cartin, 2000).
- **Product benchmarking:-** This refers to the practice of tearing down a competitor’s product to see what can be learned from its design and construction. It is said that when Toyota initiated its program to produce the Lexus to compete with cars such as Mercedes and BMW, it carefully examined the competitor’s products to determine how and where welds were placed, and how the cars were put together to achieve the look and feel of exceptional quality (Cartin, 2000).

- **Functional Benchmarking:-** According to Steven this means focusing on the process rather than on the product. Typically processes might be order entry, assembly, testing product development, and shipping etc. Functional benchmarking is possible only when companies are willing to co-operate and share information. It has the same goal as product benchmarking to improve the process and ultimately the resultant product.
- **Best Practice benchmarking:-** This is similar to functional benchmarking except that it focuses on management practices rather than on specific processes. Best practices might consider factors such as work environment and salary incentives for employees in firms with exceptional performance (Vic, 2000). General Electric is a strong advocate of best practices benchmarking (fortune, 1991)
- **Strategic benchmarking:-** The goal of strategic benchmarking is to consider the results of other benchmarking comparisons in light of the strategic focus of the firm. Specifically, what is the overall business strategy that has been articulated by the CEO, and are the results of other benchmarking studies consistent with this strategy? (Nahmias, 2000).

Ultimately, what is the purpose of benchmarking? It is to ensure continuous improvement, and is only one of the means of achieving this. Continuous improvement in product and process is the ultimate goal of any quality program. Competitive benchmarking provides a means of learning from one's competitors. Although benchmarking can be a useful tool, it is not a substitute for a clearly articulated business strategy and a vision for the firm (Vic, 2000).

2.10 SOURCES OF INFORMATION ABOUT OTHER ORGANIZATIONS

A common concern when initiating benchmarking is where and how the information about other organisation processes is obtained. Cartin identifies the following possible sources of information about outside organisations.

- (a) **Libraries:** Access to a good business library with the capability to use the voluminous data available is a major asset and the place to begin. Business organisations publish a great deal of useful information.

- (b) **Direct contact:** The orientation in benchmarking is process performance measurement and methodology. Companies in competition are traditionally fearful of providing data, but the issue can be made of interest to both parties if it is presented on a process information sharing/exchange basis. That is the reason it is necessary to define and measure the key processes first. Only then do you have something of interest to exchange. Exchanges with non-competitors who have similar process are usually much easier. Upper management should make the initial contact between competitors of interest.
- (c) **Data Centres:** These are voluntary groups of like businesses formed to share benchmark information. There are independent centres at some universities and there are consultant business process information to sell.
- (d) **Trade and professional associations:** Members can find books on benchmark contacts

2.11 CHALLENGES AND SUCCESSES OF BENCHMARKING

According to Cartin benchmarking is a simple concept but can be quite complex in application. Not all benchmarking attempt have been successful because management did not understand the need for a disciplined, planned approach, or the resources needed (Cartin, 2000). Management authorises it and then sits back to wait for results. Or upper managers scream when they see the costs the process is accruing.

Bjorn et al (1998) conducted a benchmarking activity in the project SMArTMAN SME. The objective of using benchmarking in the SMArTMAN SME project was to increase the knowledge about the supply chain management process and to enable the industrial partners to learn from the best practice. This was done through identification and study of other enterprises in Europe and their processes. Very briefly, the main conclusion is that the benchmarking studies took longer than expected and presented some unexpected challenges. However, in the end they produced many useful findings and helped gain a better understanding of the best practices in this area. These challenges, possible remedies, and success factors are discussed below.

2.11.1 CHALLENGES OF BENCHMARKING

- (a) *Finding benchmarking partners willing to participate in the benchmarking studies:* This was by far the single most difficult of all tasks, which is quite usual in benchmarking. Identifying companies that seem to be comparable in terms of size, market conditions, industry, etc., that is believed to be sufficiently better to have something to teach others, and at the same time are willing to share their best practice information, is difficult. The normal way to overcome this obstacle is to run company searches through many different channels, e.g., the company's own network, industry associations, area experts, etc.
- (b) *Getting acceptance for the use of both quantitative and qualitative benchmarking information:* The information sought in benchmarking normally consists of two parts; quantitative performance data used to determine the difference in performance levels among companies comparing and qualitative business process descriptions used to create learning among them. Since the numerical performance data often involves financial information, the willingness among the consortium and benchmarking partners to surrender this type of information was rather low.
- (c) *Lack of business process understanding:* Although the term business process has been known in academic circles for a few years, it is not widespread in industry. While some of the benchmarking partners had modelled their business processes and could give them flow charts depicting these, many of them did not. Thus, it required much more work to establish the flow of goods and information and model the processes.
- (d) *Limited duration of each interview:* They reported that during interviews, they were limited by time. In order to go in depth of each individual process it would have required more time, both during the interview and for the preparation. They said that If they had been able to perform longer and more specific interviews they would have been able to get a deeper understanding of the processes and their performance.
- (e) *Comparability of companies and processes:* Their report indicated that the benchmarking partners were all chosen because they had a similarity to or relationship with the industrial partner. This did not, however, ensure comparability of their processes. However they reported that even though not all information was comparable the visit could still generate new ideas for the industrial partners.

They warned that these are all pitfalls and challenges prospective future benchmarkers should be aware of and try to counteract.

2.11.2 SUCCESSES OF BENCHMARKING

On the other hand they report that the following parts of the benchmarking approach were successful and should be repeated in future studies:

- (a) The extensive work done in the first task of the SMARtMAN SME project in assessing the current status of the industrial partners was of invaluable help in the preparations for the benchmarking. From this work, flow charts, key performance measures, and a general awareness of how things were done were already in place. This saved much work that truly needs to be done before starting to undertake benchmarking visits.
- (b) The use a generic benchmarking questionnaire. By using a questionnaire during the visit, they report that it both guided the interviews, helped to make sure important information was not left out, and contributed in structuring the individual benchmarking reports.
- (c) Performing benchmarking visit in teams. They reported that such teams ensured people that complimented each other in terms of skills and interests and contributed to creating ownership in the companies.
- (d) Benchmarking necessitates a need for understanding of own processes. In order to understand someone else's processes, the company must analyse and understand their own processes. They reported that this process of analysing and gaining a deeper understanding of ones own processes have led to improvement for the industrial partners in SMARtMAN SME.

2.12 SUPPLY CHAIN PLANNING AND CONTROL

Historically, Operations Managers have seen their main responsibility lying within their own operations (Nigel and Robert, 2000). However, increasingly they now have to look beyond this traditional internal view if they want to manager their operations effectively. For example, in many industries, operations are becoming more focused on a narrower set of tasks. Consequently, they need to purchase more of their services and materials from outside suppliers. This, in turn, means that the way in which businesses manage the supply of products

and services to their operations greatly increases in importance. Similarly, at the demand side of the business, the way in which the distribution chain which transports goods and services to customers is managed contributes to an operation's ability to serve its customers. Just as important, it can impact on total costs. This flow of materials and information through a business from the purchasing activity, through the operations and out to customers, by way of distribution or service delivery activity can be described as 'immediate' supply network or supply chain. Even beyond the immediate supply chain, there are often strategic benefits to be gained in managing the flow between customer's customers and supplier's suppliers. Inter-company operations management of this nature is now commonly termed 'supply chain Management.' *Supply chain management is concerned with managing flow of materials and information between the operations, which form the strands, or 'chains' of a supply network* (Douglas et al, 2000).

2.13 LOGISTICS INFORMATION SYSTEM

Information technology has been utilised to support logistics for many years. It grew rapidly with the introduction of microcomputers in the early 1980's (Norman, 2000). Information technology is seen as the key factor that will affect the growth and developments of logistics. The order processing system is the nerve centre of the logistics system. A customer order serves as the communication message that sets the logistics process in motion. The speed and quality of the information flows have a direct impact on the cost and efficiency of the entire operation. Slow and erratic communications can lead to lost customers or excessive transportation, inventory and warehousing costs, as well as possible manufacturing inefficiencies caused by frequent production line changes. The order processing and information systems form the foundation for the logistics and corporate management information systems. It is an area that offers considerable potential for improving logistics performance (Douglas et al, 2000)

Organisations of all types are utilising computers to support logistics activities. This is especially true for companies thought to be on the *leading edge*, that is, leaders in their industry (Ray, 2000). Such firms are heavy users of computers in order entry, order processing, finished goods inventory control, performance measurements, freight audit/payments, and warehousing.

A recent study of world-class logistics practices cited logistics information systems as a key to competitiveness. Going beyond *transaction processing and tracking* decisions support systems (DSSs) are computer - based and support the executive decision making process (Nigel and Robert, 2000). The DSS is an integrative system of subsystems that has the purpose of providing information to aid decision maker in making better choices than would otherwise be possible. To support time-based competition, organisations are increasingly using information technologies as a source of competitive advantage - systems such as quick response (QR), Just-in-time (JIT) and efficient consumer response (ECR) are integrating a number of information-based technologies in an effort to reduce order cycle times, speed responsiveness and lower supply chain inventory (Jay and Barry, 2000). In addition, more sophisticated applications of information technology such as decision support systems, artificial intelligence, and expert systems are being used directly to support decision making in logistics (Vic, 2000).

UNIVERSITY OF NAIROBI
LOWER KABETE LIBRARY

3 CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Type of study

Cross-sectional survey method was used in this research. The method of gathering information and data was through interviews using a questionnaire. Initial contacts by phone or personal calls were made before the questionnaire was sent to the respondents. The questions were designed to elicit answers pertinent to the research problems.

Given the few number of oil companies currently operating in Kenya a census method was justified in this case. With this approach data was to be obtained from all the units in the population. This would enhance confidence in the findings and the conclusions and recommendations arrived at.

3.2 Population

The population was made up of the oil companies operating in the Kenyan market (see appendix I). These companies are registered with the ministry of energy (Chepkwony, 2001).

3.3 Data collection

Primary data was collected through a structured questionnaire having both closed and open-ended questions. The questionnaires were delivered to the respondents either by hand or by mail. The closed-ended questions enabled collection of quantitative data for statistical analysis. The open-ended questions were used to elicit qualitative responses on the respondents' view on the use of benchmarking by the company. Our target respondents were the operations managers or their equivalents in the companies because they are the ones incharge of the depots and distribution of products, and deliveries to customers.

3.4 Data analysis

The data collected was edited for accuracy, uniformity, consistency, and completeness and arranged to enable coding and tabulation before final analysis. The data were then coded and

cross tabulation done to enable the responses to be statistically analysed. Descriptive statistics was used to analyse data by way of percentage/proportions and frequency distributions. These were appropriate because of the qualitative nature of such variables (see also similar study by Maina (2001) where Kendall's tau was used to test for correlation between factors). Mean scores were calculated from the responses that were rated on a 5-point Likert scale.

4 CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter will deal with data analysis and findings of the research. The data is summarised and presented in the form of proportions, means, tables and standard deviations. It documents the extent to which Kenyan Oil Companies use benchmarking, whether those companies using benchmarking have registered improved performance and the challenges facing the Kenyan firms in benchmarking of order delivery process. Data was collected from the eight firms in the population of interest. These are BP/Shell, Total Kenya Limited, Caltex Oil (K) Ltd, NOCK, Fuelex, Engen, Jovenna and Kenol/Kobil.

4.2 General Overview of Companies characteristics

This section presents a general overview of all the eight firms in the population of interest.

4.2.1 Organisation of Operations Function

The respondents were asked to indicate the position to which they report. This question was meant to help in identifying the importance attached to the operations function in the organisation. Their responses are summarised in table 4.1 below: -

Table 4.1: Reporting position of operations function

| Reporting Position | Frequency | Percentage |
|------------------------------|------------------|-------------------|
| Managing Director / CEO | 3 | 38% |
| Any other | 3 | 37% |
| General Manager – Operations | 2 | 25% |
| TOTAL | 8 | 100 |

All respondents indicated that they report directly to the chief executive or to a position just below the CEO. This shows that Kenyan oil companies consider the operations function to be of high importance.

4.2.2 Responsibilities of the Operations function

There are various activities within the order delivery process. These activities transcend the various functions within an organisation. Respondents were therefore required to indicate the activities for which they are responsible. The results are as shown below: -

Table 4.2: Responsibilities of operations function

| Responsibility | Frequency | Percentage (%) |
|----------------------------------|------------------|-----------------------|
| Transport scheduling | 5 | 63 |
| Shipping/Transport to customers | 5 | 63 |
| Shipping/loading documentation | 4 | 50 |
| Warehousing/withdrawals | 4 | 50 |
| Order Receiving | 3 | 38 |
| Credit Checks | 3 | 38 |
| Invoicing | 3 | 38 |
| Customer delivery/offloading | 3 | 38 |
| Inventory file handling | 2 | 25 |
| Order processing | 2 | 25 |
| Global implementation of quality | 1 | 13 |

Ranking of the activities of those in charge of the operations functions indicates that the two activities of transport scheduling and shipping/transport to customers received the highest selection as shown in table 4.2. This was followed by shipping/loading documentation and warehousing/withdrawals. The lowest ranked activities were those of inventory file handling, order processing and global implementation of quality. It is therefore indicative that in general, the responsibilities of those interviewed revolve around the top four activities with the highest selection of at least 50%. These are:

- Transport scheduling
- Shipping/Transport to customers
- Warehousing/Withdrawals and
- Shipping/Loading documentation

4.2.3 Company Ownership

The Management structure of an organisation would normally vary depending on the ownership of the organisation. Respondents were therefore asked to indicate whether their firms are locally-owned or foreign-owned or both. Table 4.3 below indicates the ownership of the eight companies.

Table 4.3: Company ownership

| Form of ownership | Frequency | Percentage |
|--------------------------|------------------|-------------------|
| Foreign | 6 | 75 |
| Local | 2 | 25 |
| Total | 8 | 100% |

From table 4.3 above, 75% of the firms surveyed were foreign firms while 25% were local firms. This indicates that the oil industry in Kenya is highly dominated by foreign firms.

4.3 Participation in preparation of operations procedures

Order delivery process is made up of several activities. There is a procedure to be followed in carrying out each of these activities. These procedures could be developed from elsewhere and approved for use by the local company or affiliate or could be developed by the local company or affiliate itself. To establish the origin of these procedures, respondents were required to indicate to what extent they are involved in preparation of their operations procedures. The table below shows the responses.

Table 4.4: Extent of involvement in preparation of procedures

| Involvement | Frequency | Percentage (%) |
|--------------------------|------------------|-----------------------|
| Very involved | 4 | 50 |
| Fully involved | 3 | 38 |
| Involved in about 50% | 1 | 12 |
| Not involved | 0 | 0 |
| Rarely involved (< 50%) | 0 | 0 |
| TOTAL | 8 | 100 |

It is important to note that 88% of those interviewed indicated that they were very much involved in the preparation of their operations procedures. This means that these procedures, to some extent, takes into account the local business environment. Procedures developed elsewhere for implementation in the local Kenyan market may not take into account the Kenyan business environment e.g. infrastructure, legal framework etc.

4.4 Performance Standards used by Kenyan Oil Companies

Any organisation would normally prepare approved operations procedures that would ensure that it attains the performance standards required. Thus the procedures clearly define the performance indicators and key success factors . The organisation can therefore either develop its own standards, adopt the standards approved by its corporate headquarters (in the case of multinationals affiliates) or any other standard or best practice developed by another organisation.

Regarding the standards used by the various oil companies, respondents were asked to identify which standards they use in the order delivery process. This study assumed that companies can use a combination of different standards depending on the specific activities they are engaged in. Their responses are as presented in the table shown below:-

Table 4.5: Standards used by Kenyan Oil Companies

| Type of standard | Frequency | Percentage (%) |
|---------------------------------------|------------------|-----------------------|
| Corporate | 4 | 50 |
| Company | 3 | 38 |
| Best Practice world-wide | 3 | 38 |
| Best practice within local industries | 3 | 38 |
| Best Local standard | 0 | 0 |

It is important to note that all the respondents were allowed more than one choice in this section (table 4.5). Therefore the percentages show the frequencies of the various standards used. However, the choices are not mutually exclusive. From the table, 50% of the firms used

corporate standards; 38% used company standards; best practices world-wide and best practices within the industry. Best local standards received no selection at all.

4.5 Constraints Hindering Achievement of Set Objectives

Operations function, just like marketing or any other function, is expected to contribute towards the achievement of the overall business objective. Each function will have its own set objective which when achieved separately, contribute towards the overall business objective.

However operations of any organisation will be affected by the nature of the environment in which it operates. The environment would present challenges and constraints to the organisation. Respondents were therefore asked to indicate the constraints they encounter in the order delivery process and the specific objectives affected by such constraints.

All of the respondents surveyed indicated that there are certain constraints hindering the achievement of set objectives. The table below shows the responses on the various constraints.

Table 4.6: Constraints hindering achievement of set standards

| Constraint | Frequency | Percentage (%) |
|------------------------|------------------|-----------------------|
| Infrastructure | 7 | 88 |
| Government Legislation | 6 | 75 |
| Literacy Level | 5 | 63 |
| Financial Constraint | 4 | 50 |
| Other | 2 | 25 |

88% of the interviewees considered infrastructure to be constraints hampering the following objectives:

- Timely deliveries.
- Safe deliveries.
- Loading facilities (i.e. lack of common loading facility in Nairobi until recently).
- Minimisation of transportation rates.
- Minimisation of maintenance costs.

75% considered legislative structure to be a hindrance to the objectives such as:

- Fair competition.
- Increased throughput.
- Fair profit margins.
- Vehicle standardisation.

In addition, 63 % considered low literacy levels to be a constraint. 50% also considered that financial constraints also affected the achievement of set objectives.

This shows that environmental factors provide serious challenge to the oil companies in as far as achievement of set standards is concerned. These factors or constraints define the limit of performance level achievable.

4.6 Performance measures used in the order delivery process

Regarding performance measures, respondents were asked to indicate which performance measures they use in their order/delivery process. It is through performance measures that they would establish whether they are registering continuous improvement. Table 4.7 presents these findings: -

Table 4.7: Performance measures used in the order delivery process

| Performance Measure | Frequency | Percentage (%) |
|---|------------------|-----------------------|
| Number of stockouts at customer sites | 6 | 75 |
| Transit time: Depot to Customer | 6 | 75 |
| Order cycle time | 6 | 75 |
| Number of customer complaints | 6 | 75 |
| Number of breakages and contamination | 6 | 75 |
| Number of stockouts at company Warehouses | 5 | 63 |
| Unit Shipment cost | 5 | 63 |
| Transit time: Depot to Depot | 4 | 50 |
| Stock turn-around | 3 | 38 |
| Number of late deliveries | 3 | 38 |
| Other | 1 | 13 |

Out of the ten performance measures, five are used by at least 75% of the firms. These performance measures are:

- Number of stockouts at customer sites.
- Transit time: Depot to Customer.
- Order cycle time.
- Number of customer complaints.
- Number of breakages and contaminations during transit.

This shows the importance oil companies attach to these performance measures. These measures reflect the competitiveness of the company. Customer satisfaction is directly determined by how well the company performs in these areas. Therefore those companies who build distinctive competencies in these areas are likely to attract and retain customers.

4.7 Awareness of performance measures used by other companies

Benchmarking is about being aware of the performance achieved by other organisations or other functions within the organisation. After establishing the performance measures used by the companies, the respondents were asked whether they are aware of other companies who use the same performance measures. Table 4.8 below presents these findings.

Table 4.8: Awareness of performance measures used by other companies.

| Aware | Frequency | Percentage (%) |
|--------------|------------------|-----------------------|
| No | 5 | 63 |
| Yes | 3 | 37 |
| Total | 8 | 100 |

63% of those interviewed are not aware of the performance measures used by other firms. 37 % of them indicated that they are aware. It should however be noted that those who were not aware suspected that other firms maybe using the same performance measures. This reflects lack of established procedure for benchmarking activities in the Kenyan oil industry. This could also be because of the unwillingness on the part of the Kenyan oil companies to reveal information about their operations to other companies.

4.8 Causes for review of procedures

In any organisation, there is always the need to review the procedures from time to time. During such reviews there is need to establish new benchmarks. Respondents were required to indicate the factors that trigger the review of their procedures in the order delivery process. Table 4.9 below indicates the nature of these triggers.

Table 4.9: Triggers for review of procedures

| Trigger | Frequency | Percentage (%) |
|-----------------------|------------------|-----------------------|
| Competition | 6 | 75 |
| Customer Complaints | 6 | 75 |
| Environment | 5 | 63 |
| Other | 5 | 63 |
| Corporate head office | 4 | 50 |

All the triggers received at least a 50% positive response from the firms interviewed thereby showing the extent of distribution of the triggers in assisting in the review of procedures. From table 4.9 above a majority of the firms (75%) used competition and customer complaints as triggers. Other triggers mentioned by 63% of the firms are:

- Problems encountered.
- Fraud.
- Internal planning.
- Customer delivery needs.
- Technology changes.

4.9 Scanning the business environment

For an organisation to successfully use benchmarking as a continuous improvement tool, it needs to continuously scan the environment for new benchmarks. Important trends detected need to be monitored continuously so as to be able to establish not just the direction and trend, but even the rate of change. Respondents were therefore, asked to indicate how often they scan the business environment for new benchmarks. Table 4.10 below presents these findings.

Table 4.10 - Frequency of assessment of business environment

| | Frequency | Percentage (%) |
|------------|------------------|-----------------------|
| Constantly | 4 | 50 |
| Sometimes | 3 | 38 |
| Frequently | 1 | 12 |
| Never | 0 | 0 |
| Rarely | 0 | 0 |
| Total | 8 | 100 |

All the respondents indicated that their firms carry out an assessment of the business environment in order to identify the best performance standards achieved by other competitor companies in various processes in order to assist the firms set new benchmarks for their own processes. 50% of the firms constantly assess the business environment.

4.9.1 Sources used to establish new performance standards

Having established the frequency at which these companies look for new benchmarks respondents were probed further to indicate the industries in which they look for new performance standards. The results are shown in table 4.11 below: -

Table 4.11: Companies in which local oil companies look for new benchmarks

| Location | Frequency | Percentage (%) |
|----------------------|------------------|-----------------------|
| Within the Industry | 6 | 75 |
| Both | 2 | 25 |
| Outside the Industry | 0 | 0 |
| Total | 8 | 100 |

It was noted, as reflected in table 11 above, that 75% of the firms searched for the performance measures from within the oil industry while 25% of them searched from both within the oil industry and from other industries. There were no firms who were dependent on performance measures from outside the industry only. This means that most of the companies will have their

performance level limited to the best standards existing in the industry. They would therefore not benefit from the other industries who could probably be having standards that are better than that of the oil industry.

4.9.2 Review of Performance Standards

All the firms indicated that they reviewed their performance measures accordingly when they recognised a new performance benchmark either from the industry or from outside the industry.

4.10 Impact of benchmarking on performance

For those companies who review their activities accordingly whenever they recognise new performance benchmarks respondents were required to indicate on a 5-Point Likert scale the impact on their performance with respect to each of the performance measures they use in the order delivery process. Their responses are as presented in table 4.12 below. It should however be noted that the responses do not imply that there was a cause and effect relationship between benchmarking and the level of performance achieved.

Table 4.12: Impact of benchmarking on performance

| Description of benchmark | Mean score |
|---|-------------------|
| Number of stockouts at company warehouse | 4.13 |
| Transit time between customer and depot | 4.13 |
| Number of customer complaints | 4.13 |
| Number of Stockouts at customer sites | 4.13 |
| Unit transport/shipment cost | 4.00 |
| Order cycle time | 4.00 |
| Stock turn-around | 4.00 |
| Number of late deliveries | 4.00 |
| Number of short deliveries per week | 3.88 |
| Number of breakages and contaminations while in transit/storage | 3.87 |
| Transit time between depot to depot | 3.75 |

From table 4.12 above, it is noticeable that when the various benchmarks are ranked based on their means, the following emerges:

- The benchmarks with the highest impact on performance had a mean score of 4.13 indicating that these benchmarks had resulted in an improvement in performance which was greater than the level of the other competitor companies.
- The second highest impact on performance of a mean score of 4.00 indicated that these benchmarks had resulted into an improvement in performance to the level of other competitor companies.
- Mean score of less than 4.00 indicated that these benchmarks had an impact which resulted in a slight improvement in performance but which was still lower than the other competitor companies.

In overall benchmarking has resulted into some performance improvement by the Kenyan oil companies. However these performance improvement have been limited by the benchmark information used. Many of the companies look for benchmarks only within the industry yet it is possible that other industries could have achieved higher level of performance than the oil industry. Moreover because of unwillingness by the Kenyan oil companies to share information about their operations with other companies the benchmarks are based on information that might not necessarily be accurate.

4.11 Company policy on benchmarking

Respondents were asked to highlight the policy of their organisations on the use of benchmarking as a continuous improvement tool. While benchmarking was not explicitly mentioned in their policies, six of their respondents indicated that they have some policies with respect to continuous improvement of their order delivery performance. Listed below are responses: -

- Performance reviews every quarter and major changes annually.
- Gap analysis company performance and international standards.
- Focus on customer innovations.

- Be the best in operations with respect to competition.
- Department heads to document customer and staff key performance indicators.
- At least match competitors.

4.12 Familiarity and use of different types of benchmarking

Respondents were asked to rate on a 5-point Likert scale their level of familiarity with the different types of benchmarking. The results of these ratings are as presented in table 4.13 below.

Table 4.13: Level of familiarity with various types of benchmarking

| Types of benchmarking | Mean score on level of familiarity |
|-----------------------------------|------------------------------------|
| Product benchmarking | 4.00 |
| Best practice benchmarking | 3.75 |
| Functional (process) benchmarking | 3.63 |
| Strategic benchmarking | 3.25 |
| Problem-based benchmarking | 3.00 |

From table 4.13, the following are noticeable:

- Most of the firms are more familiar with product benchmarking (with a mean score of 4 on the Likert scale) than with the other types of benchmarking.
- Problem-based benchmarking received the lowest mean score of 3.00 indicating that the respondents were not very familiar with this type benchmarking.

Oil companies can only be able to use benchmarking effectively if they understand the various types of benchmarking. There is need therefore for these companies to invest in training so that their staff gain useful knowledge about the various types of benchmarking. The result indicates that the level of knowledge and familiarity about the various types of benchmarking can still be improved further so as to tap the full benefits of benchmarking activities.

UNIVERSITY OF NAIROBI
LOWER KABETE LIBRARY

4.13 Difficulties encountered by Kenyan Oil Companies when planning or implementing benchmarking

Respondents were asked to give a descriptive response on any difficulties they have encountered when they are planning or carrying out benchmarking of their performances in the order delivery process. Listed below are some of the difficulties highlighted by the respondents.

- Lack of information on competitor practices.
- Lack of consistency in implementation.
- Problem-based benchmarking are difficult to carry out since some customer complaints are not balanced.
- Resistance to change by shareholders.
- Inaccuracy of data.
- Lack of trained personnel.

5 CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussions

The first objective of the study was to determine the extent to which Kenyan Oil Companies use benchmarking as a tool for continuous performance improvement of order delivery process. The second objective was to establish whether there has been improved performance of Kenyan Oil companies who have used benchmarking as a strategy for continuous performance improvement of order delivery process. The third objective was to document the challenges facing the Kenyan oil companies in benchmarking of order delivery process to achieve continuous performance improvement.

5.1.1 Extent of use of benchmarking by Kenyan Oil companies as a tool for continuous improvement .

On the extent of use of benchmarking by the Kenyan Oil Companies, the study looked at whether these companies are involved in the preparation of their order delivery process procedures, the performance standards and the performance measures they use and to what extent they are aware of other companies using similar performance measures. The study revealed that at least 88% of the companies are involved in preparation of at least 50% of their procedures. The study further reveals that none of these companies use the best local standard outside the industry. What this means is that it is possible that another industry within the Kenyan market could be having a better performance outcome in one or more processes in their order delivery process and the local oil companies could benefit by adopting similar processes with the aim of even surpassing it.

Benchmarking is the practice of establishing internal standards of performance by looking to how world class companies run their business. The study therefore aimed at establishing the degree of awareness on the part of Kenyan Oil companies of other companies who could be

using similar performance measures. The study revealed that only a few companies are aware of the performance measures used by other companies. This means that these companies may not be able to benchmark against the best practices achieved in other local industries operating in the same business environment.

5.1.2 Has there been improved performance of those companies which have used benchmarking as a tool for continuous improvement?

Ultimately, the purpose of benchmarking is to ensure continuous improvement, and is only one of the means of achieving this. Continuous improvement in product and processes is the ultimate goal of any quality programme. Competitive benchmarking provides a means of learning from one's competitors.

In this study the respondents were asked to indicate whether they review their procedures whenever they recognise new performance benchmarks. They were probed further to indicate on a 5-point Likert scale the impact of such reviews on their performance level for each of the performance measures. This study reveals that oil companies who have used benchmarking have registered some positive impact on their performance. This was despite the fact that the benchmarks they used were not necessarily the highest standards achieved so far by local firms. This is because most of the companies look for new benchmarks only within the oil industry.

5.1.3 Challenges facing the Kenyan Oil companies in benchmarking order delivery process

The study looked at the challenges which Kenyan Oil companies face when they try to benchmark their performance against the best standards existing in the local market. Respondents were asked to indicate the standards they use in their order delivery processes. The study reveals that 50% of the companies are currently using corporate standards. These are standards set by their corporate headquarters outside Africa. They were also asked to indicate any constraints hindering them from achieving the standards. They were probed further to highlight the specific performance objectives affected by these constraints. The study reveals

that these standards do not take into account the local business environment. This is reflected in some of the constraints the oil companies face when they try to implement these corporate standards. These constraints include the infrastructure (i.e. road, communication etc), legislative structure, literacy level and financial constraints).

The study also revealed that these companies encounter some difficulties when planning or implementing new benchmarks. The major difficulties are:-

- Lack of information on competitor practices: Competitors are very secretive and are unwilling to reveal any information about their operations to other companies.
- Lack of consistency in implementation: Most of the companies do not have clear policies on the use of benchmarking for continuous improvement.
- Problem – based benchmarking is difficult to implement because some customer complaints are not balanced. Some customers could complain for one thing e.g. late deliveries when what they want to be reviewed are the prices.
- Resistance to change by shareholders: Some share holders resist any review of order delivery processes especially when they have a direct interest in that particular process. This results into sub optimisation.
- Inaccuracy of data: Because of the secrecy of some companies benchmarks are based more on data whose accuracy cannot be guaranteed.
- Lack of resources: The benchmarking activity requires resources e.g. the time of people to investigate, evaluate and implement competitive processes. Providing funding and resources is management's most visible and tangible evidence of support. The Kenyan Oil Companies therefore need to train its personnel on benchmarking, invest in data collection and information gathering so that they base their benchmarking on accurate information.

5.2 Conclusions

Benchmarking represents a tool, methodology and policy for continuous improvement. Therefore it requires involvement and support by upper management. In addition, since implementing benchmarking findings requires acceptance and change by the people in the

organisation affected, those people must be convinced that management actively supports it. The study has revealed that Kenyan Oil Companies have not used benchmarking fully as a tool for continuous improvement. There has been inconsistency in its application and the companies have not developed clear procedures to follow in the implementation of benchmarking. Further, the study reveals that Kenyan Oil Companies have no clear policies on benchmarking. Given the stiff competition in the market, Kenyan Oil Companies would gain competitive advantage if they can build competencies in the use of benchmarking.

Assigning their most experienced and knowledgeable people to the benchmark team is one of the most difficult resource decisions which management must make. Such people are the best equipped to recognise the valuable processes, practices and methods to copy. They will provide the biggest return on the effort.

On the development and implementation of operations standards, Kenyan Oil companies have encountered certain constraints. These constraints include infrastructure, government legislation, literacy level and financial constraint not only on the part of the customers and suppliers, but also on the companies themselves. It is therefore important that when operational standards are being formulated they should take into account the environment in which they will be implemented. The study revealed that 50% of the companies use standards set by their corporate headquarters outside Kenya. As pointed out by Aosa (1992) we have our own peculiar characteristics manifested in the level of developments, i.e. literacy level, infrastructure, legal requirements etc. These standards cannot be replicated without amendments in the companies operating in Africa.

From a broad perspective, benchmarking can be depicted as a continuous improvement process. There is need for continuous scanning of various industries for new benchmarks. This study found that Kenyan Oil Companies scan mainly within the industry. Moreover such scanning are not done constantly by some companies. Therefore, the benchmarks they use in their performance measures are not necessarily the best. This observation is supported by the low level of awareness of the performance measures used by other companies.

5.3 Recommendations

It is clear that Kenyan Oil Industry has not utilised fully benchmarking as a continuous improvement tool. The oil companies need to develop clear policies in benchmarking. They should benchmark their performance not only within the industry but also against performance levels achieved by companies operating in other local industries.

Additionally, Kenyan Oil Companies need to invest more in benchmarking activities. They should develop effective methods of data collection and information gathering. They should organise for their employees to attend benchmarking training programs and seminars. Level of order delivery process performance can be improved a great deal if the oil companies can develop clear policies on benchmarking.

Finally, it would be very useful if Kenyan Oil Companies can form data centres to share benchmarking information. Universities in Kenya could also consider forming centres that can be collecting information on business processes. The Universities can provide such business process information to the Kenyan companies on consultancy basis at a fee. This would help in solving the problem of lack of information on competitor practices and the accuracy of data. It would also help in sorting out the issue of confidentiality of the benchmark information.

5.4 Limitation of the study

Due to the nature of this study, it was intended to gather information and data through interviews using a questionnaire from the eleven companies. Gathering of more underlying information was to be done when collecting the questionnaire, and any issues were to be clarified at the same time. This was possible with only eight companies. Three companies did not agree to fill the questionnaire. This limited the gathering of more information from the industry as whole.

5.5 Suggestions for further research

This study documents the use of benchmarking as a continuous improvement tool by Kenyan Oil companies. It was based on only the oil companies that were registered by the Ministry of energy. Benchmarking as a continuous improvement tool is applicable in all industries. The researcher recommends a study to be conducted to determine to what extent other companies outside the oil industry use benchmarking as a continuous improvement tool. Such a study will help in highlighting challenges facing the Kenyan companies in the implementation of benchmarking. This might shed some light as to why Kenyan companies have not been able to reach world class status in their operations. Policy makers would then be able to initiate appropriate reforms based on these challenges.

REFERENCES

- Andersen, B. and Pettersen, P.: *The Benchmarking Handbook: Step-by-step Instructions*, Chapman &Hall, 1995, London, England.
- Andersen,B. and Randmael, S.: *Queastionnaire for the Benchmarking Visits: SMARtMAN* SME Document, 1997, Trondheim, Norway.
- Andersen,B.: *The Results of Benchmarking and a Benchmarking Process Model.*: A Ph. D. Dissertation, Norwegian Institute Of Technology, 1995, Trondheim, Norway.
- Ansoff, H.I and McDonnel,J.: *Implanting Strategic Management*: Prentice Hall 2nd Edition 1990.
- Aosa E. (1992) *An empirical investigation of aspects of strategy formulation and implementation within large private manufacturing companies in kenya*; Unpublished PhD Thesis University of Strathclyde,UK.
- APQC,American Productivity & Quality Centre: *Basics of Benchmarking*: 1993 ,Houdton, Texas.
- Ballou, R.H.:*Basic Business Logistics*; Prentice Hall Englewood Cliffs. Edition, 1978.
- Bemowski K. "*The benchmarking Bandwagon.*" ASQ *Quality Progress* (January 1991).
- Bernard J. L. and James M. M., "*The 1996 Ohio State University: Survey of Career patterns in Logistics*", Proceedings of the Annual Conference of the council of Logistics Management (October 20-23 , 1996), pp. 115-38.
- Bert .R; *Marketing Channels: A Management View: The* Dryden Press U.S.A, 1987.
- Best R. and Camp, R.C *Global Cases in Benchmarking: Best Practices from Organisations Around the world.* Milwaukee: ASQ Quality Press, 1989.
- Best R. Fifth edition. *Marketing Channels. A Management View.*
- Bett. J.; *Impact Of The Economic Reforms On The Dairy Industry In Kenya*; Unpublished MBA Project Paper University Of Nairobi, 2001.
- Bjorn A., Tom F. and Stine R.: *Benchmarking Supply Chain. Management: Finding Best Practices* (1998).
- Bureau of Business Practices. *Benchmarking: Action Plans and Legal Issues* Waterford, C.T: Simon and Schuster,1997.

Camp R.C; *Benchmarking: The search for industry Best Practices That Lead to Superior Performance*: (Milwaukee: ASQC Quality Press 1989).

Camp, R. C. *Business Process Benchmarking: Finding and implementing Best Practices* (Milwaukee: ASQC Quality Press, 1995).

Camp, R.C. ; *Benchmarking: The search for best Practices Which Lead to Superior Performance*- Parts 1 to 5 ,
Quality Progress, Jan – May 1989.

Cartin T.J.: *Principles and Practices of Organisational Performance excellence*. (2000).

Chepkwony J. K.: *Strategic Response of Petroleum Firms in Kenya to Challenges of Increased Competition in the Industry* : Unpublished MBA project paper, University of Nairobi,2001.

Codling,S.(1992) *Best Practice Benchmarking*, Industrial Newsletter.

Cooke, J.A. *“Software Takes Babel out of Vendor Managed Inventory.”* Logistics Management & Distribution Report 38, no. 2, February 1999, p. 87.

Copacino, W.C. *Supply Chain Management: The Basics and Beyond*. Boca Raton, FL: St. Lucie Press, 1997.

Coyle, R.G. *“Assessing the Controllability of a Production Raw Material System”* IEEE Transactions, SMC-12,Vol 6 (1982).

DeTONI, A. and Tonchia, S. :*Lean Organisation. Managing by Process and Performance Measurement*, International Journal of operations and Production Management, Vol. 16, No 2, 1962.

Detoro, I. *“The 10 Pitfalls of Benchmarking”* ASQ Quality Progress (January 1995).

Douglas M. L., James M. S. and Lisa M. E.: *Fundamentals of Logistics Management*. (2000).

Drucker, P; *The Economy Dark Continent*: Fortune, Vol. 72 April, 1962.

Eero E., Chairman, Stev C., Co-Chairman: *Benchmarking: Performance Indicators*: Group Work of IFIP W.G.5.7., (1995).

Fagerhaug, T., Randmael, S., and Andersen, B.: *Final Report from the Benchmarking Activity*: SMARtMAN SME Document, 1998, Trondheim, Norway.

Global Logistics Research Team, Michigan state University, *World Class Logistics. The challenge of managing continuous change* (Oak Brook, IL Council of Logistics Management, 1995) pp 137-64.

- Guiltnan, J.P and Paul G.W: Marketing Mangement. Strategies and Programs; McGrawHill, 1994.
- Handfield, R.B., and E.L.Nicholas Jr. Introduction to Supply Chain Management. Upper Saddle River, NJ: Prentice Hall, 1999.
- Harrington, H.J. The Complete Benchmarking Implementation Guide: Total Benchmarking Management. Milwaukee:ASQC Quality Press/Ernst and Young L.L.P.,1996.
- Hofer, C.W and Schendel, D :Strategy Formulation. Analysed Concepts; St. Paul: West, Published 1978.
- Jay H. and Barry R.:Production and Operations Management Fourth Edition, (2000).
- Kotler, P.: Marketing Management; The Millenium Edition, Prentice Hall India, 2001.
- Leibfried, K.H.J and McNaire, C. J. (1992) Benchmarking: A Tool for Continuous Improvement, HarperCollins.
- Maina W; Evaluation Of Kenya Industry Through Have Wheelwright Frame Work; Unpublished MBA Project Paper, University of Nairobi,2001.
- Marks N.E and Taylor R.M.: Marketing Logistics; John Willey and Sons Inc.,1967.
- Mbeche, I.M: The Management of Kenyan Industrial Firms In a Liberalised Economy; Contemporary Management Journal, University of Nairobi, 1997.
- Mckinnon A.C:Physical Distribution Systems; First Edition, Routeledge Publishers, 1989.
- Micklewright, M. J. “Competitive Benchmarking: Large Gains for Small Companies.” ASQ Quality Progress (June 1993).
- Miller and Layton, Fourth Edition: Fundamentals of Marketing (Chapter 15).
- Miller, J.G.; Meyer A.D; and Nakane J. Benchmarking Global Manufacturing. New York: McGraw-Hill/Irwin,1992.
- Muchai E.; All Is Unfair in Oil and Competition: The Executive, October 1999, pages 3 to 6.
- Murage S. N; Competitive Strategies adopted by members of the Kenya Independent Petroleum Dealers Association: Unpublished MBA Project Paper, 2001.
- Nahmias, S: Production and Operations Analysis. Fourth Edition ,pp 691, (2000).
- Nigel S., Robert J., Third Edition Chapter 13 Page 412-415: Operations Management,(2000).

- Norman G., Seventh Edition: *Productions and Operations Management*, (2000).
- Nyamwange S. O. (2001): *Operations Strategy applied for the competitiveness of kenyan large manufacturing firms*: Unpublished MBA Thesis University of Nairobi.
- Odoni R. K.; *Physical Distribution And Sales Performance: A Case of Dairy Processing Firms In Nairobi*: Unpublished MBA Project Paper, University of Nairobi, 2001.
- Ray W.: *Production and Operations Management*. Fifth Edition, (2000).
- Stev C., Gerard L. and Edward H.: *Benchmarking: Supply Chain Management*: DRAFT July 5, 1995.
- Vaziri,H.K. "*Using Competitive Benchmarking to Set Goals*." ASQ Quality Progress (October 1992).
- Vic G.: *Operations and management of Change*. (2000).
- Wamathu, S. K.; Strategic *Postures and Action Evaluation In The Kenyan Oil Industry*: Unpublished MBA Project Paper, United States International University, 2001.

APPENDIX I

OIL COMPANIES REGISTERED WITH THE MINISTRY OF ENERGY (2001)

1. Caltex
2. Mobil
3. Kenol/Kobil
4. Shell/BP Malindi
5. Total
6. Mafuta
7. Jovenna
8. Engen
9. Fuelex
10. Galana
11. National

Source: GOK; Ministry of Energy

UNIVERSITY OF NAIROBI
LIBRARY KARENDALE

APPENDIX II
QUESTIONNAIRE

DECLARATION

This is a research aimed at understanding how your company and other companies use benchmarking as an improvement tool in the order delivery process. There are no wrong or right answers and the results are confidential and strictly for academic use. Your honest participation in this survey will be highly appreciated.

PART A

COMPANY NAME

POSITION HELD

DEPARTMENT/SECTION

Q1: What position do you report to? (Tick)

- (a) General Manager-Operations
- (b) Operations Director
- (c) Managing Director
- (d) Any other (specify).....

Q2: For which of the following activities are you in-charge? (Tick)

- (a) Order receiving
- (b) Credit checks
- (c) Inventory file handling
- (d) Order processing
- (e) Invoicing
- (f) Shipping/loading documentation
- (g) Transport scheduling
- (h) Warehousing/withdrawals
- (i) Shipping/Transport to customers
- (j) Customer delivery/offloading
- (k) Others (state).....

- Q3. Company ownership
- (a) Local (more than 50% local ownership)
 - (b) Foreign(more than 50% foreign ownership)
 - (c) Other (Specify).....
-

PART B

Q1: To what extent are you involved in the preparation of your procedures? (Tick)

- (1) Not involved at all.
- (2) Rarely involved (in less than half of the procedures).
- (3)Involved in about half of the procedures.
- (4)Very involved (in most of the procedures).
- (5) Fully involved (in all my work procedure).

Please indicate the standards used by your company

- Corporate standards Best local standard
- Company standards Best practice within local industry
- Best practice world-wide Others (Specify).....

Q2: Are there constraints hindering the achievement of your set objectives?

YES NO

If yes please indicate these objectives against each constraint below:-

| <u>CONSTRAINT</u> | <u>OBJECTIVE AFFECTED</u> |
|--|---------------------------|
| (1) Infrastructure (road , communication etc.) | |
| (2)Government legislation | |
| (3) Literacy level | |
| (4) Financial constraint | |
| (5) Any Other (Specify)..... | |

Q3: What performance measures do you use in your order/delivery process? (Tick)

- (i) No of stockouts at the warehouses.
- (ii) No of stockouts at customer sites.
- (iii) Transit time between depot and customer.
- (iv) Transit time between depot to depot.
- (v) Unit shipment cost.
- (vi) Order cycle time (time from receiving an order and product delivery).
- (vii) Stock turn-round (i.e. Total monthly sale to average inventory level).
- (viii) No of late deliveries.
- (ix) No of customer complaints.
- (x) No of breakages and contaminations while in transit/in storage.
- (xi) Any other (state)

Q4. Are you aware of other companies using any of the performance measures listed in Q3 in their order/delivery process?

Yes/No.

If yes, specify the company and processes, and how their performance compare with yours:

| | COMPANY | <u>PERFORMANCE MEASURE</u> | <u>COMPARISON</u> |
|----|----------------|-----------------------------------|--------------------------|
| 1. | ----- | ----- | <input type="checkbox"/> |
| 2. | ----- | ----- | <input type="checkbox"/> |
| 3. | ----- | ----- | <input type="checkbox"/> |
| 4. | ----- | ----- | <input type="checkbox"/> |
| 5. | ----- | ----- | <input type="checkbox"/> |

For comparison use the No. 1 to 5 as follows:-

- 1. Far much worse than your company
- 2. Slightly worse than your company
- 3. The same as your company
- 4. Slightly better than your company
- 5. Far much better than your company

Q5. What triggers the need to review the procedure for a particular process? (Tick)

- (i) Competition.
- (ii) Customer complaints
- (iii) Environment (legal, financial, technological etc.)
- (iv) Corporate head office
- (v) Other (Specify).....

Please give details.....
.....

Q6. How often do you assess the business environment to identify best performance standard achieved by other companies in various processes so that you can set new benchmarks for your own processes? (Tick as appropriate)

- (1) Never (2) Rarely (3) Sometimes (4) Frequently (5) Constantly

Please give details.....
.....

In which industry do you look for such benchmarks? (Tick).

- (1) Within your industry (2) Outside your industry (3) Both .

Q7. Whenever you recognise new performance benchmarks for a specific activity, do you review yours accordingly?

YES/NO

Please give details.....
.....

If yes what has been the impact on your performance? (Indicate below)

| <u>PERFORMANCE MEASURE</u> | <u>IMPACT</u> |
|---|--------------------------|
| 1. No of stockouts at the warehouse..... | <input type="checkbox"/> |
| 2. No of stockouts at customers sites..... | <input type="checkbox"/> |
| 3. Transit time between depot and customer..... | <input type="checkbox"/> |

- 4. Transit time between depot to depot.....
- 5. Unit transport/shipment cost.....
- 6. Order cycle time (Elapsed time between order receipt and delivery)...
- 7. Stock turn-round (e.g. monthly sale to Av. inventory).....
- 8. No of late deliveries.....
- 9. No of customer complaints.....
- 10. No of breakages and contaminations while in transit/storage.....
- 11. No of short deliveries per week
- 12. Any other (state).....

Use Nos. 1-5 as follows:-

- 1. Reduction in performance
- 2. No improvement in performance
- 3. Slight improvement but lower than the other company
- 4. Improvement of performance to the level of the other company
- 5. Instant improvement to level higher than the other company.

Q(8) Please highlight the policy of your company in the use of benchmarking as a continuous improvement tool.

Q9. Are you familiar with the following types of benchmarking? Do you use them?

Please indicate a rank (from 1=not familiar, 5= Very familiar)

(A) Problem- based benchmarking

A1: Familiarity [1] [2] [3] [4] [5]

A2: Used by company [YES] [NO]

(B) Product benchmarking

B1: Familiarity [1] [2] [3] [4] [4] [5]

B2: Used by Company [YES] [NO]

(C) Functional (process) benchmarking

C1: Familiarity [1] [2] [3] [4] [5]

C2: Used by Company [YES] [NO]

(D) Best Practice Benchmarking

D1: Familiarity [1] [2] [3] [4] [5]

D2: Used by Company [YES] [NO]

(E) Strategic Benchmarking

E1: Familiarity [1] [2] [3] [4] [5]

E2: Used by company [YES] [NO]

(F) Other types of benchmarking used by your company (please indicate)

.....

Q10. Please highlight any difficulties you have encountered when planning or carrying out benchmarking.

.....
.....