AN EVALUATION OF THE MARKETING OF PACKAGED PETROLEUM PRODUCTS IN NNPC

A CASE STUDY OF KADUNA REFINING AND PETROCHEMICAL CO. (KRI'C) LTD.)

PRESENTED BY:

ENGR. IDUH AUDULKARIM ABDULLAHI

JUNE 2000

AN EVALUATION OF THE MARKETING OF PACKAGED PETROLEUM PRODUCTS IN NNPC

(A CASE STUDY OF KADUNA REFINING AND PETROCHEMICAL CO. (KRPC) LTD.)

A RESEARCH PROJECT SUBMITTED TO THE POST GRADUATE SCHOOL AHMADU HELLO UNIVERSITY ,ZARIA.

BY

ENGR. IDUH ABDULKARIM ABDULLAHI

AS A PARTIAL FULFILMENT FOR THE AWARD OF THE MASTER OF BUSINESS ADMINISTRATION (MBA) DGREE OF THE INSTITUTION.

DEPARTMENT OF BUSINESS ADMINISTRATION

FACULTY OF ADMINISTRATION

AHMADU BELLO UNIVERSITY , ZARIA - NIGERIA

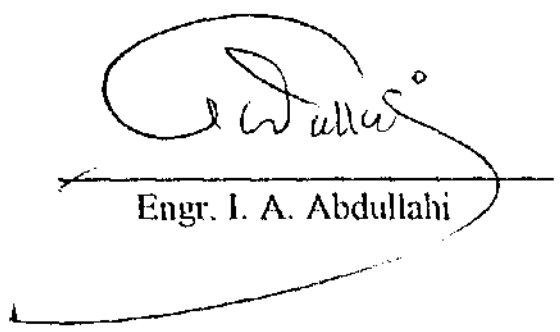
JUNE 2000

S

DECLARATION

I hereby declare that this project, a partial requirement for the award of the Master of Business Administration Degree of Ahmadu Bello University, Zaria, Nigeria is a record of my own research work. It has, to the best of my knowledge, never been presented to any postgraduate Institution for the award of a Higher Degree.

All existing literature to which references were made in the course of this exercise are indicated in the Bibliography.



Engr. I. A. Abdullahi

02 - 06 - 2000

Date

CERTIFICATION

This project entitled "AN EVALUATION OF THE MARKETING OF PACKAGED PETROLEUM PRODUCT" IN NNPC meets the requirements and regulations governing the award of the Degree of Master of Business Administration of Ahmadu Bello University, Zaria, Nigeria and is hereby approved for its contribution to knowledge and literary presentation.

M. S. Akanet (MRS) MAPharm — 9/1/2001

Name and Signature of Supervisor — Date.

Ac. Dr. A. M. Barbu — 29/9/2000

Name and Signature of External Examiner — Date.

Name and Signature of Head of Department — 2/1/01

Date.

Name and Signature of Dean
Dean Post Graduate Studies — 04/03/03

Date.

DEDICATION

To ABUBAKAR and ZAINAB (my children during the tasking course work period for this degree) and their MOTHER.

ACKNOWLEDGMENT

My sincere thanks go firstly to my supervisor in this project in person of Mrs. M. S. Akanet for squeezing time out of her usually tight schedule to attend to me each time I approached her for help. Her scholarly direction, advices and the patience to carefully go through the manuscript, offering constructive criticisms and effecting corrections are dearly appreciated.

This work will not be complete without an appreciation for advices, encouragement, prayers and cooperation of numerous friends, relations and co-workers in KRPC and elsewhere, in relation to this project.

For enduring my absence from home at weekends during the rigorous course work of the programme, my first two children: Abubakar and Zainab and their mother deserve pats on the back.

Lastly but most importantly, Praise be to the Almighty ALLAH for giving me the zeal, stamina, guidance and safety all through the programme. I wish I can ever thank HIM enough.

ABSTRACT

In this study, an evaluation of the marketing of petroleum products packaged in KRPC has been carried out. The study sought to justify the substantial foreign exchange spent annually on packaging raw materials by the organisation or suggest a possible reasonable reduction of same; by determining whether or not the company should continue products packaging.

The necessary investigation for the evaluation, initially intended to cover the 10 years period from 1986 to 1995 was actually carried out for the period 1990 to 1995 due to non availability of data for the earlier years. It was carried out in two parts. In the first part sales records for the products were obtained for the stipulated period and studied for observable trends. In the second part, personal interviews were conducted with consumers and marketers of the products aimed at finding their opinions about marketing the packaged products.

Declining sales trends were observed in the first part while in the second part consumers and marketers responses in the interviews were glaring more of disfavorable than favorable towards the packaged products.

These observations are pointers to the fact that products packaging in KRPC is no longer economical. The alternative ways of marketing the products i.e unpackaged is obviously cheaper, more convenient and more acceptable to consumers.

Keeping the manufacturing plant completely idle on grounds of the findings of this evaluation will be witless however; considering the fact that it did cost a lot to install. It is therefore recommended that packaging continues but strictly on customers request; that the Nigerian Iron and steel industry be expedited into actualising to enable local production of tin and drum sheets thus avoiding their importation and hence saving foreign exchange. And lastly, that markets for the packaged products outside the boundaries of Nigeria be explored for a possible boost of their demand; and hence a possible rise in the capacity utilisation of the plant once again.

TABLE OF CONTENTS

CHAPTER ONE

PAGE NO.

1.0.0 INTRODUCTION

1.1.0 BACKGROUND OF THE STUDY---------- 1

1.2.0 STATEMENT OF THE PROBLEM----------3

1.3.0 OBJECTIVE OF THE STUDY----------5

1.4.0 SCOPE OF THE STUDY----------5

1.5.0 METHODOLOGY OF THE STUDY----------6

1.5.1 Secondary Data----------6

1.5.2 Primary Data----------6

1.6.0 LIMITATIONS OF THE STUDY ----------7

1.7.0 SIGNIFICANCE OF THE STUDY ----------7

1.8.0 DEFINITION OF TERMS----------9

CHAPTER TWO

2.0.0 LITERATURE REVIEW

2.1.0 PACKAGING----------11

2.2.0 INCREASING TREND OF PACKAGING COST----------12

2.3.0 PACKAGING FUNCTIONS----------14

2.3.1 Protection, Promotional And Profitability----------15

2.3.2 Utility Function----------16

2.3.3 Differentiation Functions----------17

2.4.0 MANUFACTURERS/DISTRIBUTORS VERSUS CONSUMERS----------18

2.4.1 Distributor Requirements In Packaging----------18

2.4.2 Consumer Requirements In Packaging----------21

2.4.3 Conflict Resolution----------25

2.4.4 Futuristic Prospects Of Packaging In Marketing----------27

2.4.5 Social Responsibility Of Packaging In Marketing----------28

CHAPTER THREE

3.0.0 HISTORICAL BACKGROUND OF THE NNPC

3.1.0 THE DEVELOPMENT OF THE NIGERIAN PETROCHEMICAL INDUSTRY----------30

3.2.0 THE BIRTH OF THE NNPC----------31

3.3.0 ORGANIC DEVELOPMENT OF THE NNPC----------33

3.4.0 THE NEW STRUCTURE----------34

3.5.0 THE SUBSIDIARIES ---------- -35

3.6.0 HISTORY OF ESTABLISHMENT---------- -36

3.6.0 OBJECTIVE OF KRPC ----------37

3.8.0 FUNCTIONAL OPERATIONS OF KRPC----------38

3.8.1 Profile----------38

3.8.2 Off Site and Products Evacuation----------40

3.8.3 Fire Fighting And Prevention----------41

3.8.4 Staff Training and Social Amenities----------42

3.9.0 ORGANISATIONAL STRUCTURE----------42

3.10.0 ACTIVITIES OF THE MARKETING DEPARTMENT----------44

3.10.1 Distribution----------46

3.10.2 Packaging----------46

3.10.3 Selling and Merchandising----------46

3.11.0 THE MARKETING ROLE OF PACKAGING IN KRPC----------47

3.12.0 OPERATIONAL PROBLEMS OF MARKETING PACKAGED PETROLEUM PRODUCTS IN NIGERIA ----------48

3.13.0 PROSPECTS OF PACKAGED PETROLEUM PRODUCTS IN NIGERIA-49

CHAPTER FOUR

4.0.0 RESEARCH METHODOLOGY

4.1.0 TYPES OF DATA----------50

4.2.0 SAMPLING AND SAMPLING METHOD USED----------50

4.3.0 PRIMARY DATA AND METHOD OF COLLECTION----------51

4.4.0 SECONDARY DATA AND METHOD OF COLLECTION----------55

4.5.0 DATA PRESENTATION----------55

4.6.0 PROCEDURE FOR DATA ANALYSIS----------56

4.6.1 Sales Trend Observation----------56

4.6.2 Comparison of Packaged/Unpackaged Product Sales----------56

4.6.3 Total Manufacture versus Packaging Tins/Drums----------57

4.6.4 Responses in the Face-To-Face Interviews----------57

CHAPTER FIVE

5.0.0 DATA PRESENTATION, ANALYSIS AND FINDINGS

5.1.0 DATA PRESENTATION----------58

5.1.1 Secondary Data(Raw)----------58

5.1.2 Analysis of Secondary Data----------60

5.1.3 Cost of Production/Acquisition of Packages----------65

5.1.4 Primary Data and Analysis----------65

5.2.0 INTERPRETATION OF DATA----------67

5.2.1 Trends in Packaged Products Sales----------67

5.2.2 Packaged versus Unpackaged Product Sales----------69

5.2.3 Observation on Containers (Tins/Drums) Manufactured and used for packaging----------70

5.2.4 Annual Expenditure on Packaging----------71

5.2.5 Responses in the Personal Interviews----------72

5.2.6 Marketers----------74

5.3.0 FINDINGS----------74

5.3.1 Declining Demand----------74

5.3.2 Cost of Packaging----------75

5.3.3 Face-to-face Interviews Result----------75

CHAPTER SIX

6.0.0 SUMMARY, CONCLUSION AND RECOMMENDATION

6.1.0 SUMMARY----------75

6.2.0 CONCLUSION----------76

6.3.0 RECOMMENDATIONS----------78

REFERENCES----------80

APPENDIX I - INTERVIEW SHEETS

APPENDIX II - LIST OF TABLES, GRAPH & FIGURES

APPENDIX III - KEY FOR ORGANISATIONAL STRUCTURE

The ever increasing sophistication of packaging styles and materials has resulted in an equally increasing total cost of production and hence the prices of consumers have to pay for them. In fact, the current apprehension is that the cost of the pack may soon in some cases, exceed the cost of the product it contains. It is for this reason that Michael J. Baker (1979) was of the opinion that authors of introductory marketing texts should devote more attention to packaging as an element of the marketing mix; since packaging has continued to increase the cost of production in no small measure.

Some packs have after-use-values. However, majority of packs are disposable and they can constitute a nuisance. They litter our streets, may not decompose or even burn, may explode and cut (injure) unsuspecting persons; like in aerosol cans and broken bottles.

It is in view of the above facts that it becomes necessary to start reducing on the use of packs where possible. The exploitation of

developing countries like ours (Nigeria) by countries that surpass them in technological know-how makes this necessity even more serious.

In line with this philosophy this study is focused on NNPC's KRPC. Specifically, it takes a look at products (kerosene and Asphalt) packaging in tins and drums respectively, which are manufactured in the same section, and wax in cartons (which KRPC purchases from other organisations.) This is done with the aim of determining whether or not it is economical to continue product packaging in the organisation.

1.2 STATEMENT OF THE PROBLEM

In Nigeria like in other technologically backward countries of the world, the importation of machinery, their spares and expertise constitute the major way in which they part with their hard earned foreign-Exchange. Fully aware of the helpless positions in which the backward countries are, the advanced countries exploit them in no small measure in exchange for their technological superiority.

On the part of the developing nations and specifically Nigeria, it is desirous to seek ways of minimising this exploitation since it is impossible, at least for now, to eliminate it altogether. To this end, it is imperative now, to make deliberate efforts against the excessive dependence on the advanced countries.

The NNPC refineries are establishments in which such over dependence on foreign technology in very prominent. Specifically, the manufacturing section of KRPC (where raw materials for tin and drum production as well as spares and maintenance expertise for the plants are imported) is a place where concerted effort should be made to save foreign exchange.

The bulk of the Tins and Drums manufactured in KRPC are used to package kerosene and Asphalt for marketing. An evaluation of the marketing of packaged kerosene, Asphalt and wax in the organisation is therefore probably not a bad starting point towards achieving the said reduction in foreign exchange expenditure.

1.3.0 OBJECTIVE OF THE STUDY

The objective of the study is to critically look at the sales trend of the packaged products in question for the years under study(1990 - 1995). It is also intended to find out the opinions of the packaged products consumers and marketers and the reasons for their having such views.

Thereafter, the application of marketing strategies to the findings will be used to decide the next line of action concerning packaging in the organisation.

1.4.0 SCOPE OF THE STUDY

Petroleum products are transported (marketed) otherwise in Nigeria namely by road, sea and air tankers, i.e. in the unpackaged form. Similarly some petroleum products are marketed in the country in packaged forms; such as lubricants in metal and plastic containers and petrochemical products in polythene bags. This study does not consider any of these.

Rather, the study concentrates on petroleum products that are produced by NNPC and that are packaged in containers themselves manufactured by NNPC (or purchased packages like wax cartons) In other words, the study focuses on KRPC which is the only NNPC outfit that not only manufacturers packages but also physically packages some of its own petroleum products.

1.5.0 METHODOLOGY OF THE STUDY

The secondary and primary data that were utilized in this study were obtained variously as follows.

1.5.1 Secondary Data

This aspect which comprises the historical and descriptive parts of the study were obtained from the works of various authors, journals and annual reports. Various KRPC internal records were also referred to.

1.5.2 Primary Data

The technique employed for primary data collection was that of

face-to-face interview as follows.

(a) Consumers of kerosene, Asphalt and wax were in interviewed from various zones of the Kaduna metropolis.

(b) Marketing officials of the packaged products were also interviewed.

1.6.0 LIMITATIONS OF THE STUDY

The study is first limited by the availability of data from KRPC records. Packaged products sales data were available only for the period 1990 to 1995 and therefore some aspect of the secondary data is limited to that period.

A significant limitation in the primary data is the fact that the personal interviews were carried out within the Kaduna metropolis only.

1.7.0 SIGNIFICANCE OF THE STUDY

The study is significant at this point in time in many ways. Apart from the basic fact that it makes good business sense to review past activities in any business organisation, in order to plan for

better performance in future; this study is significant to the organisation's management, marketers, consumers and the general public in various ways.

To KRPC (NNPC) management, the findings of this study may provide a basis for taking important decisions necessary for a more efficient and profitable operation of the manufacturing plant. This may in turn bring about foreign exchange savings for the country.

To consumers of the products, the study may serve the purpose of providing advantages and/or disadvantages of buying petroleum products in packages that were hitherto unknown to them; and hence bring about an enhanced purchasing attitude towards the said products.

To marketers, the study may provide a basis for a more articulate marketing strategy regarding the products in question.

Finally, to the general public, the study can serve as a source of information relevant for appropriate future patronage of the organisation's products.

1.8.0 DEFINITION OF TERMS

1. PACK:-The container which holds or houses a product to give it (the product) protection etc.
2. PACKAGE:- The pack and the product together.
3. PACKAGING MATERIALS:- Raw materials used to produce the pack.
4. AFTER- USE VALUE:- The possibility of a pack being of some use after the final consumers of a product must have finished utilising the product.
5. HEAVY CRUDE:- Petroleum crude oil that is rich in heavy components like wax and base oils.
6. OFF-SITES:- The company's sites that are away from the main areas of operation.
7. FUELS SECTIONS:- The sections of KRPC that produces only fuels as finished products i.e. LPG, kerosene, Gasoline and AGO
8. LUBES SECTIONS:- The section of KRPC that produces heavy products such as wax, base oils and asphalt.
9. BASE OILS:- One of the products from heavy crude. It is

further treated to produce lubricants and greases.

10. LPG :- Liquefied petroleum Gas used for domestic cooking.

11. AGO – Automotive Gas Oil

12 HARD CURRENCY -- Foreign currencies of relatively higher value than the naira.

10. KADUNA METROPOLIS - The major dwelling and commercial areas of Kaduna town.

CHAPTER TWO

LITERATURE REVIEW

2.1.0 PACKAGING

In his publication; 'MARKETING - An introductory text', Michael J. Baker observed that only few introductory marketing texts devote significant attention to the role of packaging as an element in the marketing mix. This is attributable, he argues, to the tendency to classify the cost of packaging as a production cost, so that it is seldom isolated in the manner that advertising and promotion expenditures are. The practical functions which the pack performs is another attributable factor. This tends to shield it from public observation of the type directed at promotional expenditures whose practical importance are more easily noticeable.

In reality, Baker pointed out that packaging costs often exceed all other marketing costs, and in some instance constitute the major element of total cost of a product.

2.2.0 INCREASING TREND OF PACKAGING COST

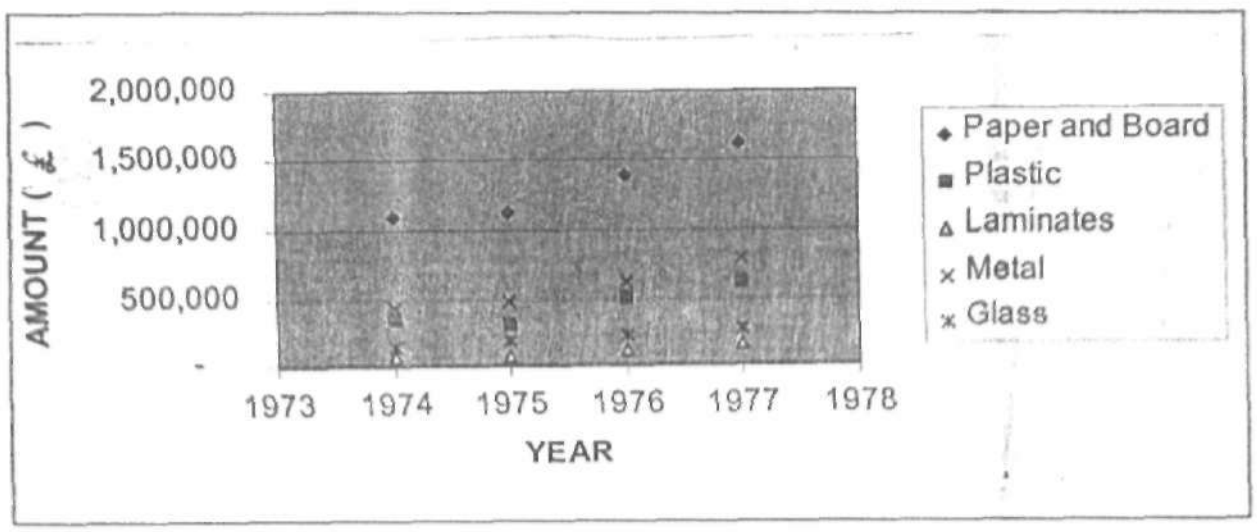
In the same publication, Baker did not fail to observe that the trend for packaging to comprise an increasing proportion of the total cost of convenience goods continues. Although more recent data are difficult to come by, Baker in his observation referred to an article – 'Retail and Distribution Management' (March/April 1974) in which reference was made to the rapidly increasing costs of packaging raw materials together with the predictive visualisation that – 'we may soon reach the situation where (for example) the cardboard wrapper around half a dozen nails costs more than the nails it contains'.

In absolute terms, Baker stated categorically; 'it is quite clear that packaging costs have increased tremendously over time', as the following table to which Baker referred shows:

S/N0	MATERIALS	YEAR/ AMOUNT (£)			
		1974	1975	1976	1977
1.	Paper and Board	1,096,919	1,119,466	1,396,347	1,613,085
2.	Plastic	349,087	314,558	504,665	623,163
3.	Laminates	74,113	71,681	117,785	159,039
4.	Metal	434,079	478,177	630,227	788,119
5.	Glass	144,082	178,118	255,076	272,023
6.	Wood etc.	75,406	70,965	72,037	89,892
7.	Canvas	10,394	10,377	10,951	11,133
	Total	**2,184,080**	**1,270,342**	**2,270,088**	**3,556,454**

Table 2.1 Increasing Trends in packaging materials costs

This increasing trend in packaging material can be better appreciated in a graphical representation as shown in graph 2.1 below.



Graph 2.1 Increasing Trends in packaging Material costs.

2.3.0 PACKAGING FUNCTIONS

Despite the fact that packaging is expensive and that this has an increasing trend as discussed above; the fact that it performs some vital functions in a product can never be over emphasized. Simply put therefore, packaging constitutes a necessary evil to producers.

Introductory marketing texts view the basic functions of Packaging from various angles. McCathy and Perreault in their 'BASIC MARKETING – A Management Approach' publication summarized the functions of packaging as follows: -

"Packaging involves protecting and promoting the product; packaging can be important to both sellers and consumers; packaging can make a product more convenient to use or store. Packaging can prevent spoiling or damage. Packaging makes a product easier to identify and promotes the brand at the point of purchase and even in use"

This summary of basic functions is considered just adequate for packaging. These functions are examined more elaborately below:

2.3.1 Protection, Promotion and Profitability

The primary and foremost function of packaging is that of physical protection of the product against hazards such as water, heat, light, mechanical shock etc. The other side of protection is against life and property. Dangerous products such as chemicals, explosives and drugs are prevented from harming life and property by packaging.

A package can and should contribute to the products selling efficiency by motivating consumers to buy it. In this sense, packaging is described today as the silent salesman in marketing. It has taken the places of millions of salesmen and by so doing has reduced cost to both manufacturers and sellers.

McCathy and Perreault agree that protective packaging is very important to manufacturers and wholesalers as they often have to bear the cost of goods damaged in shipment and on transit to consumers. Such goods damages on the other hand may also cause delay in production or even result in lost sales.

In the same publication, they (Mc.Cathy and Perveault) opined that packaging is important to retailers too. This opinion of their's agrees with the practical use of packaging in marketing a Product. Good Packaging can reduce storing costs by preventing breakage, discolouration and theft. Packages that are easy to handle can cut costs by speeding price marking, improving handling and display as well as saving space.

Mc.Cathy & Co concluded that 'good packaging sometimes gives a firm more promotion effect than it could possibly afford with advertising'. The package is seen in stores when customers are actually doing the buying.

It may be seen by many more potential customers than the company's adverts. An attractive package may speed turnover so much that total costs will drop as a percentage of sales.

2.3.2 Utility Function

Most authors of marketing texts ascertain that the utility function

of a package, which refers to the provision of convenience in usage and storage of the product, is another vital function of packaging. Modern packages indicate contents, quantity and quality of products as well as directions for use in order to get the best out of the product. Motivational statements like 'Handle with care;' 'this side up;' 'shake before use' e.t.c used mainly in international trade, greatly enhance usage and storage convenience.

Packaging contributes to a more effective/convenient use of the contents such as, ease of dispensing, re-closure etc point out authors J. O. Onah and M. J. Thomas in their publication 'Marketing Management'

2.3.3 Differentiation Function

In the prevailing situation of ever increasing competition between products, the need to make products unique in appearance strongly arises. Even from some distance customers should be able to single a particular product out of the lot. Agreeably J. O. Onah and M. J. Thomas in the same publication stated that packaging is a good strategy for keeping an edge above competitors and imitators.

2.4.0 MANUFACTURERS/ AND DISTRIBUTORS VERSUS CONSUMERS

In another observation, M.J. Baker in his earlier mentioned publication, pointed out that although there may not be any significant conflict between "The physical characteristics considered desirable by manufactures and distributors and the promotional and design elements demanded by consumers, "it will not be unimportant to discuss the requirements of the two groups separately "in order to emphasis the varying nature of their needs."

2.4.1 Distributors Requirements in Packaging

The author began his explanation by recalling that the foremost function of any pack is to protect its contents. It follows therefore according to Baker, that pack design will depend to a large extent on the nature of the product in terms of its value, physical composition and durability. The length of the distribution channel; the nature of handling which the container will be subjected and the climatic conditions which may be encountered between the point of manufacture and sale, must also be taken into consideration; argued the author.

As an example to buttress this point, Baker mentioned that bulk packaging in some form of outer container capable of withstanding the anticipated degree of rough handling is a method employed for most small items. He went on to state that it is necessary for the individual packs in such a situation to be themselves quite punishment resistant since the bulk pack can only reduce the shock of rough handling.

Baker provided another demonstration of the degree of protection necessary by making reference to the findings of the printing, packaging and Allied trade research Association:

"The Association's finding revealed that containers which one man is just capable of handling are likely to be dropped from a height of 3ft somewhere in transit. He explained that 3ft corresponds to average waist height or a lorry's tail board level. It is therefore required that such containers should be able to withstand an equivalent shock"

The Association's findings further revealed, that heavier packages tend to receive more careful handling as two or more men are needed to lift them. Further to that, mechanical methods are even more frequently used nowadays and it will always be in the best interest of the packer to determine the capacity of such equipment and consider it in designing bulk pack size and weight.

There is no doubting J. Baker in his reminder that damages in transit due to rough handling is only one aspect which needs protection. Other causes of spoilage foremost among which are: moisture, insects, rodents, fungal growth and expose to sunlight should also be protected against.

That the computation of transportation and storage costs are based on weight and/or volume thus making it imperative for manufacturers to make maximum use of a given space as stated by J. Baker is of course the obvious. At the retail level, he stressed on, this factors takes an added significance as it directly effects the number of different items which can be displayed. He

explained further that sales per square foot or per linear foot of shelve space are commonly used as measures of retail productivity. It is needless to mention therefore that retailers will rather go for pack sizes that have space economy advantages in relation to their value. The author however thought that the retailers like the manufacturer must recognize the fact that purely physical properties must be compromised for consumer preferences and also for packs with greater promotional appeal.

2.4.2 Consumer Requirements in Packaging

According to J. Baker, still in his' MARKETING - An introductory text' publication, a manufacturer is able to differentiate his product at the point of sale through the adoption of a distinctive pack and brand name.

The Manufacturer is also able to come up with new advertising and promotional strategies aimed at creating consumer preference for his product; as well as exercise grater control over the condition in which his product gets to the ultimate consumer. In this way,

dissatisfaction arising from poor storage and packaging at the retail level is greatly reduced if not eliminated.

Even though consumers are mainly interested in products rather than their packages; J. Baker, stated that instances abound where the packaging given to a product forms a significant part of the satisfaction to be derived from the product. In other words consumers are appreciative also of both technical and beauty improvement in pack designs. Many competing products are incapable of differentiation on objective criteria. In such situations, packaging and promotion often constitute the sold on distinguishing features on which the products success or failure depend; argued J. Baker.

J. Baker further pointed out that since it is possible to establish the quantity of a commodity that will be demanded at any given price, from conventional demand curves (which indicate that demand will rise with fall in price) a manufacturer can stimulate demand favourably for his product by offering them at lower prices. He

explained that this is usually achieved by offering consumers a variety of different sizes of the product. This enables the manufacturer to reach consumers with limited purchasing power, apart from favouring variation in household sizes and usage rates. It will however be unexpected of manufacturers to offer small size packs at a price proportionate to the standard size Baker cautioned; as the proportion of fixed cost incurred irrespective of unit size is high. It is not only witful Marketing but also a socially desirable activity for a manufacturer to provide non-standard pack sizes, observed Baker.

In another consideration, products that are not used up immediately the pack is opened should be given resealable packages in order to maintain product quality over the period of their consumption. Common among such resealable packs, are the screw top bottle and jar and the liver-lid can; which have largely lost ground to plastics for certain applications. The demand for package design is diverse with consumers. For example, even though ease of opening and closure is desirable, Baker explained,

today's mothers for instance want packs that are stable and child proof for the protection of young children.

Visual appeal, is no less an important consideration in pack design, especially as regards luxury and semi-luxury products. In such products, the pack itself more or less adds to the image of the product quality which the manufacturer is always seeking to promote.

Despite all that have been said in favour of packaging, critics are of the impression that elaborate and expensive packaging are used to disguise inferior products or to permit the seller to inflate the true worth of the product. Neither of these claims can however be sufficiently substantiated; for poor packaging is almost always an indication of poor product quality. A poor product cannot be disguised for long no matter how well packed. Similarly, only few consumers are prepared to pay more for a product solely on account of its packaging unless of course such packaging will add to the satisfaction they will derive from the product itself.

Finally, J. Baker pointed out that packages that carry relevant information about the product are very much appealing to consumers and that it is a statutory requirement that certain information be provided about the product such as statement of weight and composition as well as manufacture and expiry dates. Important among the information on a product which consumers appreciate J. Baker reiterated are a clearly marked price and some mention about how the product must or may be used for best results in addition to the statutory information requirement.

2.4.3 Conflict Resolution

In the publication under consideration, J. Baker came to be of the impression that any conflict that may exist between distributors and users of products is more often than not resolved in favour of the user; in line with the popular marketing philosophy where the user is of paramount importance in any business.

Diseconomies in weight/volume relationship due to the use of unsuitably shaped containers and losses due to breakages can be

largely minimized by using standardized outer containers. But manufacturer, can only afford to incur such additional cost if he has no doubt that the consumer is willing to pay a premium for the added benefits received.

As for retailers, they are more interested in turn-overs and gross margins than in the actual number of units on display. It is equally true that they will support a promotion if it can be shown that it will generate increased demand or help build store traffic, 'even though' the promotional pack may occupy twice the space of a conventional container.

That manufacturers are significantly responsive to retailers demand was rightly pointed out by J. Baker; citing the example of the food industry, where self-service has largely replaced counter-service by eliminating sales assistants; resulting in lower operating cost. This in turn has stimulated manufacturers to develop new packaging materials aimed at helping the product sell itself.

2.4.4 Futuristic Prospects of Packaging in Marketing

In the same publication, J. Baker indisputably anticipated the greater use of the package as a competitive weapon. Even-though the cost of packaging are on the increase due to increase in cost of modern packaging material, the demand for product packaging is on an increase because of the added convenience and improved performance which they offer consumers. He (Baker) stipulated that an increase in the range of products available in packages may be anticipated alongside the emergence of new improved packaging materials. The development of new containers like the aerosol can and plastic bottle are already being witnessed.

The concern over waste resulting from the vast expansion in the use of packaging material is yet another trend which has assumed increasing importance. It is obvious that consumers do not welcome the prodigal waste of resources associated with much of today's non-returnable packaging. This concern is seen in the pressure for returnable containers, or else for use of materials which may be reused through recycling.

The trends mentioned above, predict that packaging will continue

to play an increasingly important role in the marketing mix. They suggest at the same time that the marketer must be sensitive to the increasing concern for the need for conservation of scarce resources when taking packaging decisions.

2.4.5 Social Responsibility of Packaging in Marketing

E. J. Mc.Cathy and W.D.Perreault in their 'Basic Marketing' publication, lauded some consumers as saying that some packaging designs are misleading, perhaps on purpose. Others, according to the publication, feelthat the great variety of packages makes it difficult to compare values. Some others are concerned about whether the packages are biodegradable or can be recycled. It was such consumer concerns, stated the publication, that led to the passage of the Federal Fair Packaging and Labeling Act of 1966 in the USA. This Act requires that consumer goods be clearly labeled in easy to understand terms, to give consumers more information. The law also calls on government agency and industry to make deliberate efforts aimed at reducing the number of packaging sizes and make labels more useful.

Some consumers like the convenience of disposable packages; but

they can also be problematic as empty packages litter our streets. Plastic packages will not decompose even if they be in a city dump for decades. Empty aerosol cans may explode, and empty bottles often become broken glasses. All these are undisputable facts.

Therefore, in the use of packaging, steps must be taken to avoid some of the social problems that packaging, if not selected can create for both manufacturers and consumers as well as the society in general. This presently is becoming a menace in our streets in Nigeria due to the absence of a proper recycling system for pack wastes.

CHAPTER THREE

3.0.0 HISTORICAL BACKGROUND OF THE NNPC

3.1.0 THE DEVELOPMENT OF NIGERIA'S PETROLEUM INDUSTRY

Oil (petroleum) prospecting began in Nigeria as far back as 1908, when a German Company started exploration in the Araromi area, west of Nigeria. Their pioneering effort was however halted by the outbreak of the first world war (WW I) in 1914. Shell D'Arcy (the forerunner of the present Shell Petroleum Development Company of Nigeria) was awarded sole concessionary right covering the whole territory of Nigeria, and started Petroleum Prospecting in 1937. The second world war (WW II) interrupted their activities only to resume after the war in 1947. It was only in 1956 that oil was discovered in commercial quantities at Oloibiri in the Niger Delta. Oil production and export from the Oloibiri field was started by Shell in 1958.

In line with the Government's policy of increasing the pace of exploration in Nigeria, other companies such as Mobil, Agip, Elf, Texaco and Chevron had been granted permit and started exploration activities for oil in the on-shore and off-share arrears of Nigeria by 1961.

Oil production and export by Shell was at an initial rate of 5,100 barrels per day. This rate kept increasing steadily and by 1972 a 2.0 million barrels per day level had been attained; ranking the country seventh in the world among major oil producers. Presently, Nigeria is the sixth largest oil producing country in the world.

3.2.0 THE BIRTH OF THE NNPC

The role of Government in the oil industry has gradually progressed from a regulatory one to direct involvement in oil exploration. Initially, Government interest was only limited to the collection of royalties and other dues offered it by the oil companies and making rudimentary laws to regulate the activities of the industry. This was largely due to the fact that oil was very

insignificant to the economy before the late 1960's and the lack of trained indigenous personnel and expertise.

After the Nigeria civil war; precisely in 1971, oil had become very significant to the economy. To establish and strengthen Government control of the industry the Nigeria National Oil Company (NNOC) was established by decree in 1971 as an integrated oil company. It was in that same year that the country joined the Organisation of Petroleum Exploiting Countries (OPEC) as the 11th member nation. The NNOC had responsibility for both upstream and downstream activities in the industry.

These developments prompted Government into active and intensive participation in the industry's activities; believing that if Government had more say in the running of the oil industry, it could achieve its goals of rapid industrial and commercial development of the country. Today Government has 60 percent participation in Shell , Chevron, Mobil, Agip, Elf, Texaco and Pan Ocean.

It was in April 1977 that a merger between the NNOC and the Ministry of Petroleum Resources (which had *mainly a regulatory* function) created the NNPC. Since its creation the NNPC combines the functions of oil exploration, production, transportation, processing, marketing and refining of crude oil and its refined products with the regulatory functions of the former ministry of Petroleum Resources.

3.3.0 ORGANIC DEVELOPMENT OF THE NNPC.

In 1985 the NNPC was reorganized into five semi-autonomous sectors each headed by a sector co-ordinator. This re-organisation was prompted by the corporation's realization that there is the need for structural changes to reflect the realities of the situation in the organisation. The five sectors were:

1. Oil and Gas
2. Refineries
3. Petrochemical
4. Pipelines and Products Marketing

5. Petroleum Inspectorate

The Petroleum Inspectorate sector was transferred to the Ministry of petroleum Resources but still performed its regulatory functions.

3.4.0 THE NEW STRUCTURE

Presently, the NNPC is structured into six Directorates and eleven subsidiary companies charged with the responsibility of executing the corporation's objectives. The new NNPC Group is headed by a Group Managing Director and has six Group Executive Directors directly responsible for corporate services regarding Exploration and production, Refining and Petrochemicals, Engineering and Technical, Commercial and Investments and finance & Accounts.

The National Petroleum Investment Management Services (NAPIMS) in the Exploration and Production Directorate, overseas the Federation's Investments in exploration and production companies. It is therefore responsible for supervising the joint venture activities, markets the Federations's accruable crude and engages in direct exploration activities in the Chad Basin.

This structure was designed to place the NNPC in a firm position to compete favourably in the international business environment, in line with its new commercial posture. The NNPC is geared towards efficiency, profitability and financial autonomy in all its operations.

3.5.0 THE SUBSIDIARIES

As already stated, the NNPC presently has eleven subsidiary companies, under six Directorates. The subsidiary companies perform various functions towards achieving the cooperation's set objectives. They are:

i. Nigerian Petroleum Development Comapny Limited(NPDC)
ii. Integrated Data Services Limited (IDSL)
iii. Warri Refinery and Petrochemical Company Limted(WRPC)
iv. Kaduna Refinery and Petrochemical Company Limited(KRPC)
v. Port Harcourt Refining Company(PHRC) Limited.
vi. Petroleum Products Marketing Company(PPMC) Limited
vii. Nigeria Gas Company (NGC) Limited
viii. Element Petrochemical Company Limited

ix National Engineering and Technical Company(NETCO)

x. Nigeria LNG Limited(NLNG)

xi. Hyson (Nigeria)/Calson (Barmuda) Limited

3.6.0 KRPC HISTORY OF ESTABLISHMENT

The Kaduna Refining and Petrochemical Company (KRPC) Limited is one of NNPC's four petroleum processing organisations in

Nigeria. It is located at kilometer 16 along Kaduna-Kachia Road and occupies an area of 2.89 square kilometers.

The decision to construct the refinery was taken way back in 1974. Construction work did not start in earnest however until 1977 after the contract was awarded to CHIYODA CHEMICAL ENGINEERING AND CONSTRUCTION COMPANY LIMITED, at a cost of N468m. Construction work was completed and the refinery commissioned in 1980, with an initial capacity of 50,000 BPSD. De-bottle-necking exercises prompted by the ever increasing demand for petroleum products raised the capacity to the present 100,000 BPSD.

3.7.0 OBJECTIVES OF KRPC

Nigeria is rated one of the major crude petroleum producers of the world. Local management and utilisation of petroleum products have however been deficient due to the fact that until recently, most of the country's petroleum products requirement are satisfied from outside sources. Infact until 1975 when NNPC-'Warri refinery went into operation; over 90% of petroleum products used in this country were imported. Even with the Port-Harcourt and Warri refineries in operation at full capacities, a substantial quatity of petroleum products used in the country was still imported. Transportation problems also hampered the efficient internal distribution of such imported products especially fuels.

From the foregoing, the need for self sufficiency in the provision of petroleum products locally was evident. Also as a solution to the distribution problems encountered in the pasts, a wider geographical spread of petroleum refining centres in the country became necessary. The siting of a refinery somewhere in the northern part of the country, and for obvious commercial,

industrial and logistic reasons in Kaduna was therefore a worthy step towards solving the logistic problems associated with the importation and distribution of petroleum products in the country.

3.8.0 FUNCTIONAL OPERATIONS OF KRPC

3.8.1 Profile

The Kaduna Refinery was originally designed to process two types of crude oil: the Nigerian Light crude and the imported heavy crude; either of which is processed in separate sections of the refinery. It is in this regard, that the Kaduna Refinery can be referred to as a two-in-one refinery, since either of the sections could have existed separately in different locations.

The fuels section processes the Nigerian Indigenous crude which is naphthenic to obtain finished products like Gasoline, LPG, Kerosene Fuel oil and Gas oil. On its part, the Lubes section processes the imported heavy crude which is paraffinic to obtain finished products like Lubricating oils, Wax and Asphalt. Light Arabian crude from Saudi Arabia is currently the heavy crude used.

The Linear Alkyl Benzene (L.A.B) plant of KRPC was commissioned in 1987. It uses Naphtha and Kerosene as feed stock to produce Benzene, Kero solvent etc, which are important chemicals used in the detergent industry and elsewhere.

The KRPC manufacturing section which was commissioned along with the main refinery in 1980 is made up of the following sub-sections:-

a) **Drum Plant:** The drum plant manufactures 200 litres capacity drums at the rate of 8,800 drums a day; using imported steel sheets as major raw material. The drum plant also has facilities for drumming some of the asphalt produced in the lubricating oil plant of KRPC.

b) **Tin Plant:** The Tin Plant manufactures 18-litre capacity tins at the rate of 2,400 tins per hour. It uses imported coated tin sheets as the major raw material. The plant also has facilities for filling some of the tins with some of the kerosene produced in the fuels section.

c) **Wax Moulding:** Wax produced in the lubricating oil plant is moulded in the wax moulding plant into wax slabs of 5.0kg each, in which form the wax is sold out to distributors.

KRPC was designed to guarantee self sufficiency in all its utility requirements. A 42-mega watt power plant serves the complex. Raw water is taken from the Kaduna river into two large tanks (75,000m3 each) located at the KRPC premises, from where the water in treated and used for various purposes. Other significant facilities are an Administrative Building, a 2,500m^2 workshop, a 4100m^2 warehouse, a waste water treatment plant, and a medical centre.

3.8.2 Off-Site and Products Evacuation

There are modern electronically controlled off-site facilities for crude oil and petroleum products storage. These tanks are connected through a piping network to the crude oil supply pipe line, the process units and the products dispatching facilities.

Liquid petroleum products may be evacuated from the refinery in three ways: by road tankers; by rail tankers and by underground pipelines linking the refinery with NNPC Depots scattered all over the North part of Nigeria. The solid products i.e. wax, Tins, Drums and packaged products are evacuated by road and rails trucks only.

3.8.3 Fire Fighting and Prevention

Adequate fire fighting and prevention facilities are provided in KRPC, namely 3 fire trucks, fire hydrants, carbon dioxide cartridges e.t.c. Every operations staff must be subjected to an initial two weeks training in safety and fire prevention and fighting. This task is ensured by the well trained and experienced fire and safety Department staff. All vehicles permitted to enter the operations area must have their exhausts covered by spark arrestors as a prevention against fire outbreaks from it.

Law enforcement agents patrol the perimeter of the complex on a 24-hour basis. The organisations security personnel take care of internal security.

3.8.4 Staff Training and Social Amenities

In order to adequately man the operations of the complex, fifteen engineers of various background were trained in Japan as part of the construction contract. In addition, various categories of operators, engineers, technicians and chemists were also trained in Japan under the direct supervision of the contractor.

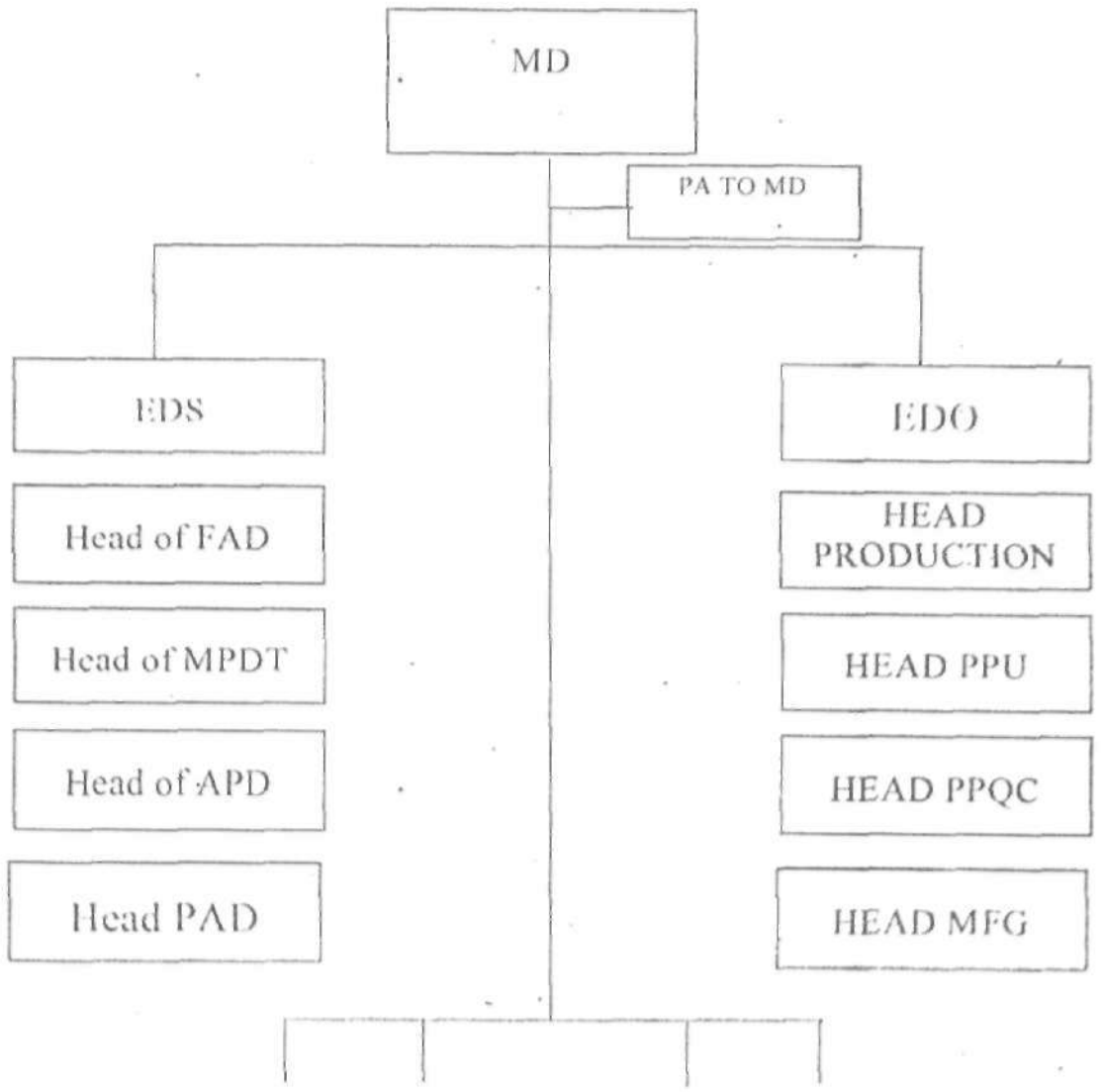
The Port-Harcourt and Warri refineries have rendered invaluable help in providing manpower to the Kaduna refinery either through on-the-job training or staff transfer. There is a housing complex located very rear KRPC to accommodate the staff. The housing complex is provided with recreational facilities, a shopping center, a hospital, a primary school and worship centres. The complex obtains it water and electricity supplies from the refinery.

3.9.0 ORGANIZATIONAL STRUCTURE

KRPC has a Chief Executive designated the Managing Director. An Executive Director (Operations) reports to him and takes charge of all technical matters in the organisation including Production, Maintenance, Technical Services, Fire & Safety, Power and

Utilities and Material Management. An executive Director (services) also reports to the Managing Director on services matters such as: Personnel and Administration, Finance and Accounts etc. Heads of Department report to the Executive Directors respectively, while officers-in-charge report to the Heads of Department. The rank and file report to superintendents who in turn report to the officers-in-charge.

The company secretariat, Petrochemical sales, Business Planning and marketing, and audit report direct to the Managing Director.



KRPC ORGANISATIONAL STRUCTURE (See Appendix for Key)

3.10.0 ACTIVITIES OF THE MARKETING DEPARTMENT

KRPC does not have a marketing department as such. Rather, another subsidiaries of the NNPC - the pipelines and product

marketing company (PPMC) Ltd, has the sole responsibility of marketing the corporations petroleum products. PPMC Kaduna branch may therefore be referred to as KRPC's marketing section.

The marketing of KRPC's products is confined to distribution, packaging, selling & merchandising activities.

The marketing activities is reduced to only the above mainly because of the monopoly enjoyed by NNPC as the sole provider of petroleum products in the country.

For this reason, the demand for the products is ever so high that the corporation has never succeeded in satisfying fully. This situation has made it such that little or no marketing activities are required in the wise of marketing research, advertisement & sales promotion and after-sales-services. The Federal Government of Nigeria decides the prices of the products. The products have been developed right from the construction stage. Products developments and pricing therefore do not have to be bothered about. This limits the marketing activities of KRPC to

distribution, packaging and sales & merchandising only as already stated.

3.10.1 Distribution:

The distribution activities effected on KRPC products is through underground piping network and through road and rail tankers. Especially, gasoline and kerosene are pumped underground to depots scattered throughout the entire Northern region. The depots include:- Kano, Minna Gusau, Sokoto, Maiduguri, Jos and Kaduna itself. The distribution of these products thereafter is the responsibility of Major and Independent Marketers, who provide tankers to be loaded at the depots. This Marketers are not part of the NNPC.

3.10.2 Packaging

Kerosene, Asphalt and wax are packaged in various forms as mentioned severally already in this write-up.

3.10.3 Selling And Merchandising

The products are sold by NNPC (PPMC) to product marketers who

mediate between the NNPC and consumers of the products. Usually the selling and merchandising are done on cash-and-carry basis; but due to high demand and occasional technical problems resulting in production down times, customers pay in advance for products and await evacuation during availability.

3.11.0 THE MARKETING ROLE OF PACKAGING IN KRPC

Packaging in KRPC mainly plays the role of aiding the transportation function of distribution. The significance of this role cannot be over emphasized as it enables the products to be transferred by trailers (rail or road) to various destinations in addition to transportation by tankers. In this way a greater accessibility of the products to their consumers is achieved.

The prevailing limited roads and rail networks in the country further emphasis the significant role packaging can play. The products can be moved in smaller bits to remote destinations inaccessible to large trucks; by using other forms of transportation like the two wheeled truck, wheel barrows, canoes and bicycles. Certainly, transportation of these products by these other means is

aided by packaging.

Less significant but worth mentioning roles of packaging in KRPC include providing purchasing and usage conveniences. The divisibility factor which results from packaging enables small consumers to purchase the products according to their needs and purchasing power, and this goes a long way in enhancing he company's patronage.

3.12.0 OPERATIONAL PROBLEMS OF MARKETING PACKAGED PETROLEUM PRODUCTS IN NIGERIA

Problems of marketing packaged petroleum products in an outfit like the KRPC where about 90% of packaging materials are imported as well as machinery spares and maintenance expertise includes long and frequent down-times. This can result from long delays in arrival of raw materials and experts since they are far fetched. Importation protocols also add to this problem.

Additional costs are bound to be incurred in providing pallets and fork lifts for the movement of packages from one place to another

and for loading and off loading. The direct loading of the liquid product from tanks to road or rail tankers is certainly more convenient and less expensive.

3.13.0 PROSPECTS OF PACKAGED PETROLEUM PRODUCTS IN NIGERIA

The packaging of petroleum products generally will continue to flourish in Nigerian especially considering the rapid development of the plastic industry. However, petroleum products packaging as peculiar to KRPC may gradually decline with time considering the problems already enumerated above; and the fast improving road network within the country, also already mentioned.

CHAPTER FOUR

4.0.0 THE RESEARCH METHODOLOGY

4.1.0 TYPES OF DATA

In this study, both primary and secondary day were used primary data being those expressly collected for the specific purpose of the research topic, while secondary data are those that might have been collected for some other purposes but found useful for the research topic in question.

4.2.0 SAMPLING AND SAMPLING METHOD USED

Since this is a survey research as distinct from a predictive one, it is opined that a non-probability sampling method suffices. Specifically, the JUDGEMENT sampling method is chosen for use in this survey, in preference to the other non-probability methods namely; CONVENIENCE sampling and QUOTA sampling. The choice of the Judgement sampling method is because respondents are selected, on the basis of the interviewers subjective opinion, that they constitute a representative cross section of the population

to be investigated. The population investigated here is made up of consumers and marketers of the packaged petroleum products in question across the country.

Based on the above, the selected samples for this research work are as follows:

a. Ten(10) kerosene consumers - two (2) each from five chosen zones of the Kaduna metropolis namely: Sabon Tasha, Kakuri, Tudun Wada, Kawo and Ungwan Rimi.

b. One official each from two major asphalt consuming companies within the Kaduna metropolis.

c. Four (4) consumers of wax within the metropolis.

d. Two (2) products marketing officials in KRPC-NNPC.

The total sample size is therefore eighteen (18)

4.3.0 PRIMARY DATA AND METHOD OF COLLECTION

The primary data for this investigation was obtained from the responses of consumers and marketers of the packaged petroleum products to structured questions in face-to-face interviews with them; aimed at finding out their opinions about the products.

Ready questions were verbally and face-to-face asked the

respondents as contained in already prepared questionnaires. Their responses were recorded instantly in spaces provided on the questionnaires by the interviewer who happened to be the researchers.

The structured questions ask are as follows:

The questions were started as follows:

A. ***For The Kerosene Consumers:***

1. Do you use Kerosene for domestic purposes?
2. What is the quantity of kerosene you use in a month approximately?
3. How do you purchase the kerosene that you use?
4. Are you aware that Kerosene is packaged in tins of 18litres capacity?
5. If yes for question 4, have you ever purchased the commodity in the ready 18 litre tin pack?
6. If no for question 5, why not?
7. Do you see any advantage at all with Kerosene packaging in tins?
8. If yes for question 7, what are the advantages?

9. Do you think that Kerosene packaging in smaller tin containers will be a welcome idea?

10. What is your advice to the NNPC on Kerosene packaging?

B. *For Asphalt Consumers*

1. Do you use asphalt in your construction business?

2. Between 1990 and 1995 most of the asphalt you used was from KRPC. True or false.

3. In what form or how do you purchase asphalt from KRPC?

4. What percentage approximately of your total asphalt demand did you purchase in ready pack drums?

5. Are ready pack asphalt of any particular advantage?

6. If yes for question 5, what are the advantages?

7. If No for question 5 what are the disadvantages?

8. Finally what is your advice to the NNPC on asphalt drumming?

C. *For Wax Consumers*

1. What do you use wax for?

2. Between 1990 and 1995 did you purchase any wax you used

from KRPC?

3. Did you ever purchase wax slabs in carton packs from KRPC?

4. Do you prefer the wax in carton packs?

5. If No for question 4, why not?

6. What is your advice to NNPC on wax packaging?

D. ***For Product Marketers***

1. For how long have you been in the products marketing business?

2. Do you have experience in the marketing of kerosene, Asphalt and wax both in the packaged and unpackaged forms?

3. Approximately what percentage of the products on the average are sold in packaged form?

4. If Yes for question (2) what in your observation are customer attitude towards un-packaged products relative to packaged products?

5. Why the preference in question 4.?

6. From your experience, what is your advice to the NNPC management on products packaging?

4.4.0 SECONDARY DATA AND METHOD OF COLLECTION

The secondary data in this survey, was obtained from KRPC's internal records. Records of Tins and Drum manufactured as well as quantities of kerosene, asphalt and wax sold in packaged form for the period 1990 - 1995 were obtained from the Production Planning and Control (PP&C) section of the organisation. The accounts section of the organisation provided records of raw materials cost for the same period; while the manufacturing section provided records of raw material consumption for the period.

4.5.0 DATA PRESENTATION

The secondary data is categorised into Raw data and Modified data. The raw data is secondary data as obtained from internal records. For better comparism, the need might arise for some or all the raw data to be subjected to one form of calculation or the other, the result of which is the modified data. Both forms of secondary data are presented in tabular forms in this research work.

The primary data is presented as responses to the face-to face

interviews on the questions; the summary of which is presented finally in a tabular form.

4. 6.0 PROCEDURES FOR DATA ANALYSIS

The procedures used for data analysis in this survey involved the following.

4.6.1 Sales Trend Observation

The trends in the sales of the packaged products is observed for the period under consideration. The sales data are even plotted on a graph for better trends observation, from which useful conclusions can be drown. Where trends appear abnormal, possible reasons for such abnormalities are examined to clear ambiguities.

4.6.2 Comparison of Packaged/unpackaged Products Sales

The sales of packaged products for the period in question is compared with those of unpackaged products. The data are plotted on bar charts for kerosene and asphalt for clearer comparism, and hence better assisting in the drawing of logical conclusions.

4.6.3 Total Manufacture Versus Packaging Tins/drums

The percentages of total Tins/Drums manufactured annually for the period concerned that were used for products packaging is observed. A dwindling or increasing percentage trend will certainly help in the drawing of conclusions.

4.6.4 Responses in the Face-to-face Interviews

The responses of the face-to-face interviews are collated and carefully studied. The responses for and against petroleum products packaging are weighed against each other as a major basis for conclusions drawing.

5.0.0 DATA PRESENTATION, ANALYSIS AND FINDINGS

5.1.0 DATA PRESENTATION

The data for this survey is presented below categorised under secondary and primary data. The procedure for the collection of the data is as outline in chapter four.

5.1.1 Secondary data (raw)

a. ***Tin Kerosene, Drum Asphalt and Empty Tins and Drums sold.***

Numbers of tin kerosene, Drum asphalt as well as empty tins and drums sold for the period under review, as obtained from internal company records; are presented in table 5.1a below.

YEAR	TINNED KERO (TINS)	EMPTY TINS	DRUMMED ASPHALT	EMPTY DRUMS
1990	499,305	874,203	165,204	166,244
1991	529,022	1,065,088	47,253	46,656
1992	549,187	884,574	37,185	33,444
1993	225,167	760,885	5,926	38,158
1994	394,196	639,284	29,712	41,707
1995	165,394	355,269	5,946	7,194

Table 5. 1a: Tinned Kero, Drummed Alphalt as well as empties sold for various years.

b. ***Quantities of Kerosene, Asphalt and wax produced (sold)***

The quantities of kerosene, Asphalt and wax produced (sold) for the period under consideration; as obtained from internal records are presented in table 5.1b below.

YEAR	KEROSENE (MT)	ASPHALT (MT)	WAX (MT)
1990	505,852	180,134	7,662
1991	473,454	181,099	2,277
1992	364,195	99,304	3,027
1993	288,604	130,007	250
1994	295,197	98,669	3,776
1995	302,359	19,635	892

Table 5.1b: Quantities of Kerosene, Asphalt and Wax produced (sold) for various years .

c. ***Cost of Tin, Drum and Wax Carton.***

In a recent costing exercise conducted in KRPC commercial Department, the cost information obtained is presented in Table 5.1c.

ITEMS	**APPROXIMATE COST (N)**
TIN	220.00
DRUM	2,000.00
CARTON	120.00

Table 5.1c: Unit cost of Tin, Drum and Wax Carton

5.1.2 Analysis of Secondary Data

a. *Actual Quantities of packaged products sold.*

The quantities of products sold packaged (i.e tinned or drummed) shown in table 5.1a need to be converted to the actual masses of the commodities, for better comparisons as follows:

CALCULATIONS (1)

i For Kerosene:

The specific gravity of Kerosene is 0.8098 kg/ltr. Each tin contains 18.litrs of the commodity. Therefore each tin has:

18.0 litres x 0.8098kg/ltrs

i.e. 14.6kg or 0.146mt of kerosene.

For the year 1990 therefore, the quality of Kerosene sold packaged is:

0.0146mt x 499, 305

i.e 7,289.9mt.

YASHIN

ii. *For Asphalt :*

The average specific gravity of asphalt is 1.01kg/litre. Each drum of asphalt contains 185 litres of the commodity. Therefore each drum contains:

185 litres x 1.01kg/ltrs.

i.e 187 kg or 0.187mt of the commodity.

And for the year 1990 the quantity of asphalt sold packaged is:

0.187mt x 165,204

i.e 30, 893mt.

Calculated in like manners, the quantities of Kerosene and asphalt sold in packages for the years under focus are shown in table 5.2 below.

YEAR	KEROSENE (MT)	ASPHALT
1990	7,290.00	30,8893.00
1991	7,734.0	8,836.3
1992	8,018.4	6,953.6
1993	3,287.4	1,108.2
1994	5,755.3	5,556.1
1995	2,414.8	1,112.0

Table 5.2 Quantities of Kerosene and Asphalt sold in packaged form

b. Percentages of Total Product That Were Sold in Packages

The percentages of Total kerosene and Asphalt sales that were made in packages can be obtained by calculation as follows:

CALCULATIONS (II)

i. *Kerosene*

In the year 1990, total kerosene sold was 505,852mt

But only 7289.9mt was in packages

The percentage sold in tins is therefore:

$$\frac{7290}{505852} \times 100$$

i.e 1.44%

ii. *Asphalt*

In the year 1990, total asphalt sales was 165,204mt

The quantity sold in drums was 30,893mt

The percentage sold in drums is:

$$\frac{30,893}{165,204} \times 100$$

i.e 18.7%

calculated in the like manners; the result for the years in focus are shown in table 5.3 below:

Table 5.3: below shows the percentages of total Kerosene & Asphalt sold packaged for various years

YEARS	KEROSENE (MT)	ASPHALT (MT)
1990	1.44	18.70
1991	1.63	4.88
1992	2.20	7.00
1993	1.14	0.85
1994	1.95	5.63
1995	0.80	5.66

Table 5.3: Percentage of total Kerosene/Asphalt sales, sold in packages.

c. *Percentages of Total Tins/Drums Manufactured that were used for packaging*

The percentages of total tins and drums produced that were used for products packaging can be obtained by calculation as follows: -

CALCULATIONS; (III)

i. *Kerosene:*

From table 5.1a, we have the number of tinned kero sold as 499,305 while the number of empty tins sold was 874,203 for the year 1990. The percentage of total tins manufactured for that year

that was used for packaging is obtainable as:

$$\frac{499{,}305}{499{,}305 + 874{,}203} \times 100$$

i.e 36.35%

ii. *Asphalt:*

Also from table 5.1a, we have the number of drummed Asphalt sold as 166,244 while the number of empty drums sold was 166,244 for the year 1990. The percentage of total drums manufactured for that year that was used for packaging is obtainable as:

$$\frac{165{,}204}{165{,}204 + 166{,}244} \times 100$$

i.e 49.84%

Calculated in like manners, the percentage of total tins and drums manufacture that were use for product packaging for the years in focus are as shown in table 5.4 below:-

YEAR	TINS(%)	DRUMS(%)
1990	36.35	49.84
1991	33.20	50.32
1992	38.20	52.65
1993	22.84	13.44
1994	38.14	41.60
1995	31.77	45.25

Table 5.4: Percentage of total tins/Drums manufactured that were used for packaging.

5.1.3 Cost Of Production/Acquisition of Packages

Table 5.1c used in conjunction with Tables 5.1a and 5.1b will produce the cost of tins, drums and cartons used for packaging in the period under observation as shown in table 5.5 below:

Year	Tin (₦000,000)	Drums (₦000,000)	Cartons (₦000,000)
1990	109.847	330.408	36.777
1991	166.385	94.506	10.929
1992	120.821	74.370	14.529
1993	49.537	11.852	1.200
1994	86.723	59.424	18.125
19905	36.387	11.892	4.282

Table 5.5: Material cost of products packaging

5.1.4 Primary Data and Analysis

Face-to-face interviews were conducted with consumers of Kerosene, Asphalt and Wax in various parts of Kaduna metropolis and with products marketing officials in KRPC.

As can be seen from the interview sheets (see appendix), ten kerosene consumers were interviewed in all; two from each of five chosen zones of the metropolis. Namely: Sabon Tehsa, Kakuri, Tudun Wada, Kawo and Ungwan Rimi. One official each from two major asphalt consuming construction companies also in Kaduna Messrs Borini Prono and PW were also interviewed.

Next to be interviewed were four wax consuming individuals also within the Kaduna metropolis. Lastly, two product marketing officials of KRPC were interviewed.

In response to the questions which were designed to directly or by implication determine consumers/marketers preference or otherwise for the packaged petroleum products and ultimately to find out their opinions as to whether petroleum products packaging be continued or discontinued by the organisation; the responses can be summarised as shown in table 5.6 below.

PRODUCTS	NUMBER OF CONSUMERS INTERVIEWED	RESPONSES	
		CONTINUE PACKAGING	DISCONTINUE PACKAGING
Kerosene	10	2	8
Asphalt	2	1	1
Wax	4	0	4
Marketing Officials	2	0	2

Table 5.6: Responses in the face-to-face interviews conducted.

The percentage response in the face-to-face interviews in favour/against packaging of the products is shown in table 5.7 below.

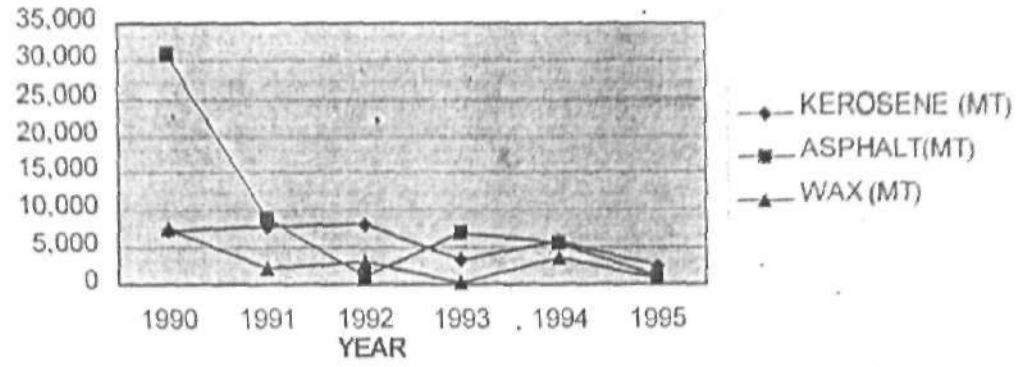
RESPONSES	PRODUCTS/MARKETER			
	KEROSENE	ASPHALT	WAX	MARKETERS
Continue Packaging(%)	20	50	0	0
Discontinue Packaging(%)	80	50	100	100

Table 5.7: Face-to-face interviews responses summary

5.2.0 INTERPRETATION OF DATA

5.2.1 Trends in Packaged Products Sales

A careful study of table 5.2, which is derived from Table 5.1a shows a gradual decline in the quantities of packaged products evacuated (ie sold) for the period considered. The declining trends are better noticeable in graph 5.1 below.



Graph 5.1: Trends in packaged products sales

The trends would have been better noticeable were it not for factors like:

a. Production Problems

Occasional technical problems resulting in production interruption in turn resulted in unavailability of products for evacuation at certain times even though they had been paid for. Pseudo increases in sales are noticed when increased products evacuation result following the resumption of production at a rate aimed at clearing the backlog of supplies that are already paid for. Such occurrence explains the situations for 1991, 1992 and 1994 for kerosene; 1994 for drummed asphalt and 1992 and 1994 for wax in graph 5.1 above.

b. Advance Payment for Products.

Many consumers/dealers pay for products in advance even when the production plant is on a planned shutdown. The result of this is accumulated backlog of supplies; which has same effect as in (a) above.

c. Delay in Evacuation.

Some consumers/dealers fail to respond promptly regarding the removal of their allocated products even when such products are available. When eventually-such customers evacuate after so much

delay, the effect is a pseudo increase in evacuation (sales) as already explained in (a) above.

5.2.2 Packaged Versus Unpackaged Products Sales

Table 5.2 shows the quantities of kerosene and asphalt sold in packages in the period considered; while Table 5.1b shows the total quantities of products sold. Table 5.3 shows the percentages of total products sold in packages.

For kerosene, the percentage sold in tins is so small that it can almost be assumed that all the kerosene produced were sold unpackaged. The situation was a little better in the case of asphalt. The comparisms are a lot more glaring when observed on histograms as shown below in figure 5.1 and 5.2 for kerosene and asphalt respectively.

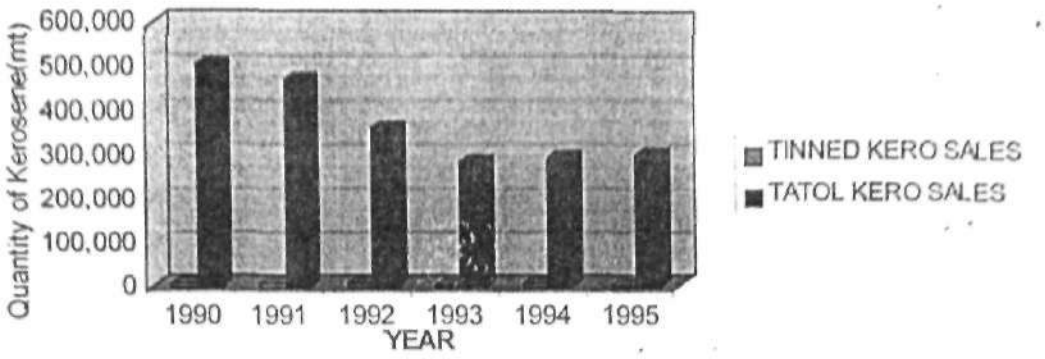


Fig. 5.1: Tinned Kerosene sales relative to total Kerosene sales

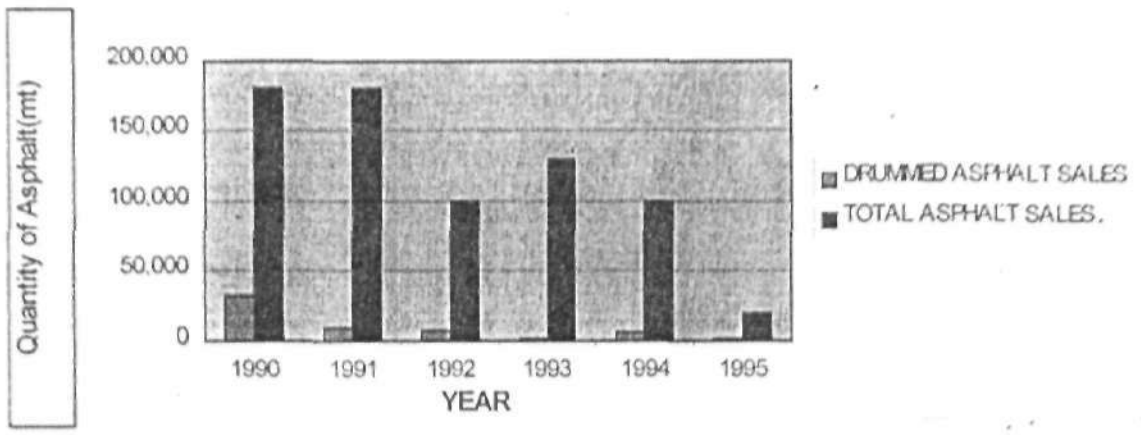


Fig. 5.2: Drummed Asphalt sales relative to total asphalt sales.

For wax, the total quantity of the commodity produced during the period under observation was sold in carton packages.

5.2.3 Observation on Containers (Tins And Drums) Manufactured and used for Packaging

A look at the percentages of total tins and drums manufactured that were used for product packaging for the years under consideration

(see Table 5.4) does not show any particular trend in either cases. This does not mean that such trends are absent. As noted earlier on such trends are rendered unobservable as a result of their having been dampened by irregular products evacuation.

However, it can be observed from the table (5.4) that the percentages of tins and drums manufactured that were used for product packaging are quite substantial for the period under study. The ranges are about 23.0 to 38.5% and 14.0 to 53.0% respectively. On the average, 33.4% of the tins and 42.2% of the drums manufactured for the period were used for products packaging.

5.2.4 Annual Expenditure on Packaging

From table 5.5 it can also be deduced that averages of ₦86.617m, ₦97.075m and ₦14.307m were spent for packaging kerosene, Asphalt and wax respectively per year for the period under consideration. This amounted to a total of ₦197.999m or approximately ₦198m per year.

Now, subjecting this figure to 10% inflation factor per year yields a current annual expenditure for packaging in KRPC of approximately N290m. This figure does not include cost of maintenance of the packaging plant.

5.2.5 Responses in the Face-To-Face Interviews

A careful study of the responses in the face-to face interviews reveals the following.

a. ***Kerosene***

Almost all the ordinary consumers purchased the commodity in plastic or metal containers (Jerry cans) of various sizes from petroleum products outlet stations or retailers as against purchasing the ready 18litre packs. There is little wonder therefore why the direct response is so much in favour of a discontinuation as shown in table 5.5.

b. **Asphalt**

For asphalt, the table shows that there is no edge over the

other between continuing and discontinuing asphalt packaging. The relatively few number of interviews conducted in this regard (which is in line with relatively few construction companies available that use the commodity) makes the determination quite ambiguous, However, factors like encouraging hoarding (which is a prohibited act and which commodity packaging is likely to tempt); improved reach by road tankers and the inevitable increasing difficulty in acquiring drums raw materials and machinery spares for the ageing plant speak in favour of a discontinuation of asphalt packaging.

c. **Wax**

The packaging of wax into cartons came into being only in the year 1990. Until then, the commodity was supplied to consumers as naked 5kg slabs; a situation which the consumers did not have any quarrels with. Then came the introduction of cartons containers; which brought along with it additional cost for the commodity which the final

consumers have to bear. It is needless to mention that consumers will welcome the removal of this additional cost burden on them as evidenced in table 5.5

5.2.6 Marketers

The few products marketers interviewed responded in the light of their observations of consumer attitudes towards packaged products over the years. Here again, the relatively few number of marketer interviewed cast some element of ambiguity over the situation. The responses of the consumers themselves in the interview however makes the representation in table 5.5 more or less unquestionable.

5.3.0 FINDINGS

The findings in this study are as follows:-

5.3.1 Declining Demand

There was a general decline in the demand for the packaged products under consideration for the period in focus (see Graph5.1)

5.3.2 Cost of Packaging

About N290m was spent for products packaging in the year 1999. This amount which does not include the cost of maintaining the plants is subject to 10% inflation rate annually.

5.3.3 Face-To-Face Interview Result

The face-to-face interviews revealed that 80%, 50%, 100% and 100% of consumers of Kerosene, Asphalt and Wax and marketing officials respectively would prefer a discontinuation of products packaging in NNPC (KRPC).

CHAPTER SIX

6.0.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1.0 SUMMARY

This piece of work, like its title indicates was aimed at evaluating the marketing of packaged petroleum products in KRPC (NNPC). The choice of the topic was prompted not only by the ever increasing need to be prudent in our foreign exchange expenditure, but also to minimize as much as possible our dependance on the technologically advanced countries; who take too much undue advantage of us (since the raw material for the packages production and maintenance expertise are imported). In carrying out the exercise production and sales records from KRPC technical reports and a costing excersise report as well as 'MARKETING- An Introductory Text' by M. J. Baker (1979) among others constitute the sources of secondary data used in this study. Personal interviews of consumers of the products in question and their marketers within the Kaduna metropolis produced the primary data.

An objective analysis of the data produced the following findings:-

1. The demand for the packaged petroleum products is in a gradual but steady decline.
2. It cost the NNPC about N290 M to package petroleum products in the year 1999 at an annual 10% inflation rate.
3. 80%, 50%, 100% and 100%of consumers of kerosene, Asphalt, wax and marketing officials respectively interviewed face-to-face were in favour of a discontinuation of products packaging in KRPC.

6.2.0 CONCLUSION

This evaluation exercise has been carried out as systematically and as objectively as possible; so much so that the findings can be said to be reliable to a large extent.

The observed declining trends in the demand for the packaged products is not surprising as it has been explained by factors like: improving road net works in the country; the development of the plastic industry; the problem of impossibility to dispose empties properly and safety and the burden of additional cost imposed on the final consumer of the products.

Improving road net work in the country has made it possible for road tankers and lorries carrying unpackaged products to have a better reach at consumers in the hinterland without requiring that they be packaged in small bits. The development of the plastic industry has also made available plastic containers of various sizes and shapes, thus giving the kerosene tin a though competition for example. The difficulty of disposing empties properly after product usage is yet another consideration from hygienic and convenience angles. Most of these empties do not decompose. They therefore continue to litter the streets or accumulate in incinerators with continued usage of the products in packs. Lastly it is needless to mention that consumers will prefer an option where they evade the additional cost burden which packaging imposes on them.

The approximately ₦290M it cost the NNPC to package these products in 1990 alone is no doubt a staggering amount. Even then, this amount does not include the cost of maintaining the packaging plant, aside of its being subject to a 10% rise annually due to inflation.

Any possibility of saving this amount (mainly in hard currency) annually will no doubt be an appreciable development in the organization.

The result of the face-to-face interviews are rather unquestionable since they are the direct responses of the consumers/marketers of the products. They clearly indicate a preference for the products in their unpackaged form.

On the basis of all the above facts therefor it can be concluded that *consumers, the satisfaction of whom modern product decisions must favour* are in this particular case by and large in preference of NNPC's Kerosene, Asphalt and Wax unpackaged.

6.3.0 RECOMMENDATIONS

The installation of the packaging plant in KRPC certainly did cost NNPC a substantial amount of money. It will therefore be unwise to abandon it altogether because of the findings of this evaluation. Based on this fact the following submission are made:

1. The first appropriate recommendation here therefore is for KRPC to package the products in question strictly on customer requests rather than as a routine schedule. In this way, the plant will not be kept completely idle. The aforementioned cost of packaging will be drastically reduced in this way; so also the plants wear and tear.

2. The Nigerian Government should make concerted efforts at accomplishing the anticipated coming to reality of our Iron and Steel industry. Steel sheets and other raw materials for Tin and Drum manufacture will then be produced locally, hence saving hard currency. It is therefore recommended that the NNPC renders support where possible to the iron and steel project to enable it actualise in the very near future.

3. This evaluation has been carried out on the local market for the products in question. The possibility exits that markets abound in the neighboring Africa countries and beyond. In this regard, it is also recommended that NNPC makes deliberate efforts at discovering markets for its packaged kerosene, Asphalt, and Wax outside Nigeria. A gradual increase in the demand for these products will be the result of these efforts, and hence a gradual increase in the use of the packaging plant once again.

REFERENCES

1. `MARKETING- AN INTRODUCTORY TEXT (5TH EDITION)

   BY: MICHAEL J. BAKER (Macmillan Press)

2. MARKETING MANAGER (Paufic Publishers)

   By J.O Onah (Prof) And M.J. Thomas (Prof)

3. DO YOUR OWN MARKET RESEARCH (Kogan Palie Ltd)

   By Paul N. Hague and Peter Jackson

4. INTRODUCTION TO RESEARCH METHODOLOGY (3rd Edition)

5. KRPC DRUM AND TIN PLANTS OPERATING MANUALS

6. KRPC TECHNICAL REPORTS AND MASS BALANCE

APPENDIX I

Interview sheetS

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

1. NAME: ~~Mr. Mrs.~~ Mrs. MONICA LAWAL - SABO TESHA, KADUNA

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre
b. 10 litres
c. Less than 10 litres ✓
d. Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready parkages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosins is parkaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin park?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such parks
b. It is more convinient buying in plactic/metal container of various sizes.
c. The 18litre park is not in the interest of consumers buying in small bits.
d. ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes No ✓

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. .....
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. It should be continued
b. The package size should be reduced
c. ✓ It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

2. NAME: Mr. ~~Mrs.~~ ~~Mrs.~~ JONATHAN IPAV - SABON TESHA, KADUNA

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre
b. 10 litres ✓
c. Less than 10 litres
d. Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready parkages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosine is parkaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin park?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such packs
b. It is more convinient buying in plactic/metal cotainer of various sizes.
c. The 18litre park is not in the interest of consumers buying in small bits.
d ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes ✓ No

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. Consumers in the rural areas will find the ready packs suitable
b. The empty tins can be of use at home afterwards.
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. ✓ It should be continued
b. The package size should be reduced
c. It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

3. NAME: ~~Mr.~~ Mal. ~~Mrs~~ SANI BABA - KAKURI, KADUNA

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre ✓
b. 10 litres
c. Less than 10 litres
d. Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready parkages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d. ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosine is parkaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin park?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity in more expennive in such packs
b. It in more convinient buying in plastic/metal container of various sizes.
c. The 18litre pack in not in the interest of consumers buying in small bits.
d. ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes ✓ No

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. The empty tins can be put to other uses.
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. ✓ It should be continued
b. The package size should be reduced
c. It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

4. NAME: Mr. ~~Mrs.~~ ~~Miss~~ AUTA BITRUS :- KAKURI, KADUNA

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre
b. 10 litres
c. ✓ Less than 10 litres
d. Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready parkages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d. ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosins is parkaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin park?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such packs
b. It is more convinient buying in plactic/metal container of various sizes.
c. The 18litre pack is not in the interest of consumers buying in small bits.
d. ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes No ✓

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. .....
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. It should be continued
b. The package size should be reduced
c. ✓ It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

5 NAME: ~~Mr.~~ Mal. ~~Mrs~~ GARBA ALI - TUDUN WADA, KADUNA

Question: 1

Do you use kerosine for domestic purpose?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre
b. 10 litres
c. Less than 10 litres
d. ✓ Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready packages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d. ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosine is packaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin pack?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such packs
b. It is more convinient buying in plactic/metal cotainer of various sizes.
c. The 18litre pack is not in the interest of consumers buying in small bits.
d. ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes ✓ No

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. The empty tin can be used otherwise.
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. It should be continued
b. The package size should be reduced
c. ✓ It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

6. NAME: Mr. ~~Mrs.~~ ~~Mrs.~~ INALEGWU ADA - TUDUN WADA, KADUNA.

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre
b. 10 litres
c. ✓ Less than 10 litres
d. Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready packages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d. ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosine is packaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin pack?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such packs
b. It is more convinient buying in plactic/metal container of various sizes.
c. The 18litre pack is not in the interest of consumers buying in small bits.
d. ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes No ✓

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. .....
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. It should be continued
b. The package size should be reduced
c. ✓ It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

7 NAME: Mr. ~~Mrt. Mrt~~ LINUS ABUMALA – KAWO, KADUNA

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre
b. 10 litres
c. Less than 10 litres
d ✓ Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready parkages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosine is parkaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin park?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such parks
b. It is more convinient buying in plastic/metal container of various sizes.
c. The 18litre park is not in the interest of consumers buying in small bits.
d ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes No ✓

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. .....
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. It should be continued
b. The package size should be reduced
c. ✓ It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

8. NAME: Mr. ~~Mrs.~~ ~~Mrs~~ Amos Aboki - KAWO, KADUNA

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre
b. ✓ 10 litres
c. Less than 10 litres
d. Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready package of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d. ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosine is packaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin pack?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such packs
b. It is more convinient buying in plactic/metal cotainer of verious sizes.
c. The 18litre pack is not in the interest of consumers buying in small bits.
d ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes No ✓

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. .....
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. It should be continued
b. The package size should be reduced
c ✓ It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

9. NAME: Mr. ~~Mr. Mr~~ EZE OKONKWO - UNGUAN RIMI, KADUNA

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. 5 litre
b. 10 litres
c. ✓ Less than 10 litres
d. Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready parkages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d. ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosine is parkaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin park?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such parks
b. It is more convinient buying in plastic/metal container of various sizes.
c. The 18litre park is not in the interest of consumers buying in small bits.
d. ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes No ✓

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. .....
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. It should be continued
b. The package size should be reduced
c ✓ It should be discontinued

FACE-TO-FACE INTERVIEW WITH CONSUMERS:

A. KEROSINE

10. NAME: Mr. ~~Mal.~~ ~~Mrs.~~ JOB PAM - UNGAN RIMI, KADUNA

Question: 1

Do you use kerosine for domestic purposes?

Answer: Yes ✓ No

Question: 2

What is the quantity of kerosine you use in a month approximately?

Answer:

a. ✓ 5 litre
b. 10 litres
c. Less than 10 litres
d. Above 10 litres

Question: 3

How do you purchase the kerosine that you use?

Answer:

a. In ready packages of 10 litre capacity
b. In metal drums
c. In platic or metal Jerycans from the refinery
d. ✓ In plastic or metal Jerycans from filling station and/ or retailers.

Question: 4

Are you aware that kerosine is packaged in Tins of 18-liters capacity?

Answer:

Yes ✓ No

Question: 5

If yes for Q4, have you ever purchased the commodity in the ready 18-litre tin pack?

Answer:

Yes No ✓

Question: 6

If No for Q5, why?

Answer:

a. The commodity is more expensive in such packs
b. It is more convinient buying in plactic/metal cotainer of various sizes.
c. The 18litre pack is not in the interest of consumers buying in small bits.
d. ✓ All of the above

Question: 7

Do you see any advantage at all with kerosine packaging in tins?

Answer:

Yes ✓ No

Question: 8

If yes for Q7, what are the advantages?

Answer:

a. The empty tins can be used otherwise.
b. .....
c. .....
d. .....

Question: 9

Do you think that kerosine packaging in smaller tin containers will be a welcome idea?

Answer:

Yes No ✓

Question: 10

What is your advice to the NNPC on kerosine packaging

Answer:

a. It should be continued
b. The package size should be reduced
c. ✓ It should be discontinued

B. ASPHALT.

1. Name: Mr./Mrs. WILLIAM BABALOLA - TECHNICIAN, BORING/PROVO - KAL

Question: 1

Do you use Asphalt in your construction business?

Answer:

Yes ✓ No

Question: 2

Between 1986 and 1995 most of the asphalt you used was from KRPC, True or False?

Answer:

True ✓ False

Question: 3

In what form or how do you purchase asphalt from KRPC?

Answer:

a. In road/rail trucks

b. In ready pack drums

c. ✓ Both a & b

Question: 4

What percentage approximately of your total asphalt demand annually do you purchase in ready pack drums?

Answer:

a. 40%

b. ✓ less than 40%

c. Over 40%

Question: 5

Are ready pack asphalt of any particular advantages?

Answer:

Yes ✓ No

Question: 6

If you for Q5 what are the advantages?

Answer:

a. Useful for long time storage of the commodity.

b. Convinient for transportation to remote work sites.

c. .....

Question: 7

If No for Q5, What are the disadvantages?

Answer:

a. .....

b. .....

c. .....

Question: 8

Finally what is your advice to the NNPC on asphalt druming?

Answer:

a. Asphalt druming should be stopped up

b. Asphalt druming should be reduced

c. Asphalt druming should be stopped entirely

d ✓ Asphalt druming should continue at the present rate

B. ASPHALT.

2. Name: Mr./Mrs. JOHN ABRAHAM - TECHNICIAN, PW(NIG.) LTD, KAD.

Question: 1

Do you use Asphalt in your construction business?

Answer:

Yes ✓ No

Question: 2

Between 1986 and 1995 most of the asphalt you used was from KRPC, True or False?

Answer:

True ✓ False

Question: 3

In what form or how do you purchase asphalt from KRPC?

Answer:

a. In road/rail trucks

b. In ready pack drums

c. ✓ Both a & b

Question: 4

What percentage approximately of your total asphalt demand annually do you purchase in ready pack drums?

Answer:

a. 40%

b. ✓ less than 40%

c. Over 40%

Question: 5

Are ready pack asphalt of any particular advantages?

Answer:

Yes No ✓

Question: 6

If yes for Q5 what are the advantages?

Answer:

a. .....

b. .....

c. .....

Question: 7

If No for Q5, What are the disadvantages?

Answer:

a. It encourages hoarding of the commodity.
b. It brings about higher price for the commodity.
c. .....

Question: 8

Finally what is your advice to the NNPC on asphalt druming?

Answer:

a. Asphalt druming should be stopped up
b. Asphalt druming should be reduced
c. ✓ Asphalt druming should be stopped entirely
d. Asphalt druming should continue at the present rate

C. WAX

1. Name: ~~Mr.~~ Mrs. ~~Miss~~ ELIZABETH ABAM – KADUNA

Question: 1 What do you use wax for?

Answer:

a. Candle making
b. Fromado making
c. Pharmaceuticals
d. Textiles
e✓ Others

Question: 2

Between 1986 and 1995 did you purchase any of the wax you used from KRPC?

Answer:

Yes ✓ No

Question: 3

Did you ever purchase wax slabs in carton packs from KRPC?

Answer:

Yes ✓ No

Question: 4

Do you prefer the wax in carton packs?

Answer:

Yes No ✓

Question: 5

If No for Q4 Why?

Answer:

a. The pack is of no use
b. The pack brings about additional cost
c. The Packs constitute a disposal problem after the wax in removed
d✓ All of the above

Question: 6

What is your advice to NNPC on wax packaging?

Answer:

a. Wax packaging should continue
b✓ Wax packaging should discontinue

C. WAX

2 Name: Mr. ~~Mrs.~~ ~~Mrs~~: MICHAEL ANDERSON – KADUNA.

Question: 1 What do you use wax for?

Answer:

a✓ Candle making

b. Promade making

c. Phamaceuticals

d. Textiles

e. Others

Question: 2

Between 1986 and 1995 did you purchase any of the wax you used from KRPC?

Answer:

Yes ✓ No

Question: 3

Did you ever purchase wax slabs in carton packs from KRPC?

Answer:

Yes ✓ No

Question: 4

Do you prefer the wax in carton packs?

Answer:

Yes No ✓

Question: 5

If No for Q4 Why?

Answer:

a. The pack is of no use

b. The pack brings about additional cost

c. The Packs constitute a disposal problem after the wax in removed

d✓ All of the above

Question: 6

What is your advice to NNPC on wax packaging?

Answer:

a. Wax packaging should continue

b✓ Wax packaging should discontinue

C. WAX

3 Name: Mr. ~~Mrs.~~ ~~Mrs~~: DANLADI AMA – KADUNA

Question: 1 What do you use wax for?

Answer:

a. Candle making
b. ✓ Promade making
c. Pharmaceuticals
d. Textiles
e. Others

Question: 2
Between 1986 and 1995 did you purchase any of the wax you used from KRPC?

Answer:
Yes ✓ No

Question: 3
Did you ever purchase wax slabs in carton packs from KRPC?
Answer:
Yes ✓ No

Question: 4
Do you prefer the wax in carton packs?

Answer:
Yes No ✓

Question: 5
If No for Q4 Why?

Answer:
a. The pack is of no use
b. The pack brings about additional cost
c. The Packs constitute a disposal problem after the wax in removed
d. ✓ All of the above

Question: 6
What is your advice to KRPC on wax packaging?

Answer:
a. Wax packaging should continue
b. ✓ Wax packaging should discontinue

C. WAX

4. Name: Mr. ~~Mrs. Miss~~ ALAO LATEEF — KADUNA

Question: 1 What do you use wax for?

Answer:

a. ✓ Candle making
b. Fromade making
c. Pharmaceuticals
d. Textiles
e. Others

Question: 2

Between 1986 and 1995 did you purchase any of the wax you used from KRPC?

Answer:

Yes ✓ No

Question: 3

Did you ever purchase wax slabs in carton packs from KRPC?

Answer:

Yes ✓ No

Question: 4

Do you prefer the wax in carton packs?

Answer:

Yes No ✓

Question: 5

If No for Q4 Why?

Answer:

a. The pack is of no use
b. The pack brings about additional cost
c. The Packs constitute a disposal problem after the wax is removed
d. ✓ All of the above

Question: 6

What is your advice to NNPC on wax packaging?

Answer:

a. Wax packaging should continue
b ✓ Wax packaging should discontinue

FACE-TO-FACE INTERVIEWS WITH PRODUCT MARKETERS

NAME: Mr. Mrs. Mal: A. RUFAI

Question: 1

For how long have you been in the product marketing business?

Answer:

a. 5 years .....

b. Less than 5 years .....

c. ✓ Over than 5 years .....

Question: 2

Do you have experience on the marketing of kerosine,

Asphalt and wax (both in the packaged and unpackaged form)?

Answer:

Yes ✓ No

Question: 3

Approximately what percentage of the products on the average are sold in packaged form?

Answer:

a. ✓ About 5%

b. About 10%

c. About 40%

d. About 50%

Question: 4

If yes for Q2, what in your observation are customers attitude toward packaged products relative to unpackaged ones?

Answer:

a. They like both equally

b. They prefer packaged products

c. ✓ They prefer unpackaged products

Question: 5

Why the preference in question 4?

Answer:

a. Unpackaged products are cheaper in unit prices
b. There are no empties to dispose of after product usage
c. There is relatively less delay in clearance
d. ✓ All of the above.

Question: 6

From your experiences, what is your advice to NNPC management on products packaging?

Answer:

1. The rate of products packaging should be reduced
2. Product packaging should continue at the present rate
3. ✓ Products packaging should be discontinued entirely
4. The rate of products packaging should be increased

FACE-TO-FACE INTERVIEWS WITH PRODUCT MARKETERS

2. NAME: ~~Mr.~~ ~~Mrs.~~ Miss: B. ABBA

Question: 1

For how long have you been in the product marketing business?

Answer:

a. 5 years .....

b. Less than 5 years .....

c. ✓ Over than 5 years .....

Question: 2

Do you have experience on the marketing of kerosine,

Asphalt and wax (both in the packaged and unpackaged form)?

Answer:

Yes ✓ No

Question: 3

Approximately what percentage of the products on the average are sold in packaged form?

Answer:

a. ✓ About 5%

b. About 10%

c. About 40%

d. About 50%

Question: 4

If yes for Q2, what in your observation are customers attitude toward packaged products relative to unpackaged ones?

Answer:

a. They like both equally

b. They prefer packaged products

c. ✓ They prefer unpackaged products

Question: 5

Why the preference in question 4?

Answer:

a. Unpackaged products are cheaper in unit prices
b. There are no emption to dispose of after product usage
c. There is relatively less delay in clearance
d✓ All of the above.

Question: 6

From your experiences, what is your advice to NNPC management on products packaging?

Answer:

1. The rate of products packaging should be reduced
2. Product packaging should continue at the present rate
3.✓ Products packaging should be discontinued entirely
4. The rate of products packaging should be increased

APPENDIX II

List of tables, Graphs & Figures

A TABLES

2. 1- Increasing trends in Packaging Materials Cost

5.1a -Tinned Kero, Drummed Asphalt and Empties sold for various years

5. 1b -Quantities of Kerosene, Asphalt and Wax produced for various years

5. 1c -Unit Cost of tin, Drum and wax carton

5.2 -Quantities of Kerosene and Asphalt sold in Packaged form

5.3 -Percentages of Total Kerosene Asphalt sales in Packages.

5.4 -Percentages of Total Tins/Drums manufactured that were used for Packaging

5.5- Material Cost of Products Packaging for various years.

5.6 -Response in the interviews conducted.

5.7 -Interview Responses Summary

B. GRAPHS.

2.1- Increasing trends in Packaging Material Cost

5.1 -Trends in Packaged Products sales.

C. FIGURES

5.1 - Tinned Kerosene sales relative to Total Kerosene Sales

5.2 Drummed Asphalt Relative to Total Asphalt Sales.

APPENDIX III

Key For Organisational Structure

KEY FOR KRPC ORGANISATIONAL STRUCTURE

MD - Managing Director

PAD - Public Affairs Department

PA - Personal Assistant

PPU - Power Plant & Utilities

EDO - Executive Director, Operations

ETSD - Engr. Technical Service Department

EDS - Executive Director, Services

PPQC -Production Planning & Quality cont.

FAD - Finance & Accounts Department

MFGD - Manufacturing Department

MPDT - Manpower Development/Training

C/S - Company seretenate

APD - Admin & Personnel Department

PBMD -Business Planning & Marketing Department