

**INVENTORY MANAGEMENT OF
UNILEVER NEPAL LIMITED**

By:

Bimala Devkota

Birendra Multiple Campus

T.U. Regd. No.: 7-2-241-186-2005

Exam Roll No. 190019 (1st Year)

190003 (2nd Year)

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TRIBHUVAN UNIVERSITY
BIRENDRA MULTIPLE CAMPUS
Bharatpur, Chitwan

056 { 520253
520689
526159

Fax: 056-520253

DEPARTMENT OF MANAGEMENT

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(Ref):

Date:

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This is to certify that the thesis

Submitted by

Bimala Devkota

Entitled

INVENTORY MANAGEMENT OF UNILEVER NEPAL LIMITED

has been prepared as approved by this department in the prescribed format
of faculty of management. This thesis is forwarded for evaluation.

.....

Sushil Dahal
Thesis Supervisor

.....

Baikuntha Pd. Bhusal
Chairperson, Research Committee

.....

Sushil Dahal
Programme Incharge

.....

Dr. Keshav Bhakta Sapkota
Campus Chief

Date:



TRIBHUVAN UNIVERSITY
BIRENDRA MULTIPLE CAMPUS

Bharatpur, Chitwan

056 { 520253
520689
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Fax: 056-520253

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Date:

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We have conducted the Viva-Voce examination of the

Thesis presented by

Bimala Devkota

Entitled

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommended the thesis to be accepted as partial fulfillment of the requirement for

Master Degree in Business Studies (MBS)

VIVA-VOCE COMMITTEE

Chairperson, Research Committee:

Member (Thesis Advisor):

Member (External Expert):

Date:

DECLARATION

I hereby proclaim that the thesis work entitled "**Inventory Management of Unilever Nepal Limited**" submitted to Birendra Multiple Campus, Faculty of Management, Tribhuvan University is my original work for the partial fulfillment of the requirement for the Master's Degree of Business Studies (MBS) under the supervision of Sushil Dahal Lecturer of Birendra Multiple Campus, Bharatpur, Chitwan.

July, 2013

Bimala Devkota

Birendra Multiple Campus

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Date:

Bimala Devkota

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LIST OF ABBREVIATIONS

| | |
|----------|---|
| A.D. | Anno Domini |
| ABC | Always Better Control |
| AIC | Agriculture Input Corporation |
| CA | Current Assets |
| DRP | Distribution Requirement Planning |
| EOQ | Economic Order Quantity |
| FG | Finished Goods |
| FIFO | First in First Out |
| FNCCI | Federation of Nepalese Chamber of Commerce and Industry |
| FY | Fiscal Year |
| GDP | Gross Domestic Product |
| GIP | Good-In-Process |
| HCCL | Himal Cement Company Limited |
| HCIL | Hetauda Cement Industry Limited |
| HLL | Hindustan Lever Limited |
| i.e. | That is |
| IRT | Inventory Turnover Ratio |
| JIT | Just-In-Time |
| LIFO | Last-In-First-Out |
| MRP (I) | Material Requirement Planning |
| MRP (II) | Manufacturing Resource Planning |
| PM | Packaging Material |
| RDL | Royal Drugs Limited |
| RM | Raw Material |
| ROL | Reorder Level |
| UNL | Unilever Nepal Limited |
| VDC | Village Development Committee |
| WIP | Work-In-Progress |

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Inventory can be defined as a stock of any kind of item reserved in the store for a certain period of time constitutes the most significant components of the current assets. Inventory is stock of the product a company is manufacturing for sale and components that makes up the product. The various forms are inventory or raw material, work-in-progress and finished goods. Both excessive and inadequate inventory are dangerous for any firm. An excessive inventory increases the firms fund and decrease profit. It also increases carrying cost and therefore also may run the risk of liquidation. Inadequate level of inventory hold up production and may affect the company's ability to meet delivery commitment. An undertaking neglecting the management of inventory will be jeopardizing its long run profitability and may fail ultimately. Hence optimum level of inventory should be determined on the basis of trade off between cost and benefits associated with the level of inventory. In this competitive world, profit can be determined only by reducing cost. So cost should be minimized and production should be maximized.

Inventory management is a topic of considerable and wide spread interest. There are various scientific techniques to the solution of a variety of inventory management. Broadly speaking the inventory management problem is one of the major concerns for a given financial investment and adequate supply of something in order to meet an expected distribution or pattern of demand. Inventory management is an integral part of financial management. It is primarily concerned with minimizing the investment in inventory, maintaining a desire level of inventory and financial dimension. The real task of top management lies in the formulation of policies that will lead to optimal inventory investment for attainment of desired objectives.

Thus, management should pay adequate attention to the inventory management to reduce the cost of production. Inventory should be maintained in appropriate quantity so as to avoid both under stock and over stock. The aim of inventory management is to maintain optimum level of inventory for the smooth production and sales.

1.2 Statement of the Problems

The basic purpose in accounting for inventories is the proper determination of net income through the matching of appropriate inventory cost against revenue. Inventories present problem of considerable magnitude for both the accountant and management. Both must seriously consider such inventory problems as valuation control, safeguarding and cost allocation. All of these problems are especially critical in view of the materiality of inventories in the typical firm and the fact that inventories directly affected both the income statement and balance sheet. These factors have caused the accounting profession to give particular attention to the problems related to inventories (Khan & Jain, 2008: 155). The suitable adaptation of inventory level is crucial for an organization. It should be balanced in such a way that should neither be excessive nor inadequate. The excessive inventory results unnecessary tie up of the firm's funds and loss of liquidity whereas in-adequacy of inventory causes either product holds up or failure to meet the demand of customer.

Now questions arise whether or not the organization following inventory management tools and techniques. The study tries to answer the following research question.

- i. How inventories are managed by UNL Ltd.?
- ii. Is the inventory management policy of UNL sound?
- iii. What inventory management technique does this company use?
- iv. What are the relation between inventory and sales?
- v. What problem the company has been facing in the management of inventory?

- vi. What should be the impact of inventory management on the profitability of the company?

1.3 Objectives of the Study

The main objectives of this study to identify the problem underlying in inventory management of Unilever Nepal Ltd. and its impact on profitability. In order to meet the main objective the following specific objectives have been purposed.

- i. To examine the present inventory position of Unilever Nepal Ltd.
- ii. To examine the inventory management policy of Unilever Nepal Ltd.
- iii. To analyze the relationship of sales and inventories.
- iv. To examine the problem faced by the Unilever Nepal Ltd. for managing the inventory.
- v. To assess the impact of inventory management on profitability of Unilever Nepal Ltd.

1.4 Importance of the Study

Inventory management is one of the most important functions in an organization. Without effective and efficient inventory management, no organization can achieve its goals. A firm cannot achieve its goal unless inventories are controlled effectively and capital is allocated properly. Proper inventory management helps to increase the profit of an organization. A slight change in the cost of inventories will bring a great change in the firm's profitability. Reduction in the material cost may result in high profit.

Most of the Nepalese manufacturing organizations are suffering from poor inventory management. Unilever Nepal Ltd. has different type of product thus deal with diversified product group to meet everyday need of domestic consumers. Being a manufacturing company, it spends a lot of time, money and efforts in inventory management. Therefore, the researcher is very much interested to examine its inventory management system of UNL. So, this topic

is chosen for the study. It is hoped that the study may help to solve the problem faced by Unilever Nepal Ltd., to eliminate the obstacles presently traced in inventory management. Last but not the least, it provides relevant and pertinent literature for the future research on the area of inventory management of UNL.

1.5 Limitations of the Study

This study attempts to find out the problems and impact on the profitability of Unilever Nepal Ltd. Therefore the following will be the major limitation of the study:

- i. This study is concentrated on the area of inventory management of Unilever Nepal Ltd.
- ii. The comprehensibility and accuracy of the study are based on the data provided by the management and various published document of UNL.
- iii. This is the case study, so it is not applicable in general situation or all types of manufacturing enterprises.
- iv. This study covers a span of only 6 financial years covering from 2006/07 to 2011/12.
- v. This study is based on data provided from companies and other available resources. Hence this study is based on secondary data as well as primary data.

1.6 Organization of the Study

Chapter one: This chapter includes general background of the study. Objectives of the study, introduction of the company, limitation of the study.

Chapter two: This chapter includes review of literature. The researcher has divided in this chapter into two portion, first being theoretical framework and second is review of previous study.

Chapter three: This chapter includes research methodology research design, nature and sources of data, data gathering procedure. Presentation and analysis of technique and tools. Research methodology consist of research design and research tools. Both primary and secondary data are used in this study. But secondary data are used considerably.

Chapter four: This chapter concerned with data presentation and analysis. This is the main part of the study. Various statistical presentation are used for analyzing the collected data from different sources. Actual result are obtained after analysis of data by using financial and statistical tools and techniques. Major findings are drawn after analysis of data.

Chapter five: This is the last chapter of study and includes, summary, conclusion and recommendation. An extensive bibliography and annexes are also included at the end.

CHAPTER TWO

REVIEW OF LITERATURE

Review of literature means taking knowledge from different sources. In this chapter the researcher has reviewed various public and unpublished materials. Similarly past researcher were viewed and also books, articles, newspaper are reviewed. The previous study should be reviewed because they provide the foundation to the present study. The review of literature provides and the foundation for developing a comprehensive theoretical framework for various hypothesis can be developed for testing. "The purpose of reviewing the literature is to develop some expertise in one's area, to see what new contribution can be made and to receive some ideas for developing a research design." (Pant, 2009: 30).

There are many researcher studies in the field of Nepalese manufacturing enterprises only limited number of studies have been conducted in the field of inventory management. In this chapter attempts have been made to present the review of literature regarding inventory management. This chapter is divided into two-sub section conceptual framework (theoretical concept of inventory management) is presented in first section and review of related studies has been presented in the second section.

2.1 Conceptual Framework

2.1.1 Inventory Concept

The term inventory refers to the stockpile of the product a firm is offering for sale and the components that make up the product. In other words "an inventory is an idle resource of any kind, provided that such resources have economic value" (Hampton, 2010:65). Inventory deals with the determination of the optimum level of such an idle resource.

The dictionary meaning of inventory is stock of goods or a list of goods. Various authors have given the meaning of inventory differently. In accounting

language inventory denotes stock of finished goods. In manufacturing concern it may include raw materials, work-in-process and stores.

Inventory management involves planning of the optimum level of inventory and control of inventory cost supported by an appropriate organization structure which is staffed by trained persons and directed by top management. It involves both financial dimension as well as physical dimension and these dimensions are interrelated and cannot be looked in isolated (Agrawal, 2009: 21).

Inventory is a link between production and sale of product. The optimum level of inventories should be judged in relation to the flexibility inventories afford. In evaluating the level of inventories, management must balance the benefits of economic of products, purchasing and increase product demand against the cost of carrying the additional inventory of particular concern to the financial manger is the cost of funds invested in inventory, which is a function of risk of a specific inventories involved (Van Horne, 2008: 117).

Anything that a firm reserved meeting in future requirements of production and sales is called inventory. The basic reasons for holding inventory are to keep up the production activities unhampered. It is neither physically possible nor economically suitable to wait for the stocks to arrive at when they are actually required. Therefore keeping up inventory is a must for efficient working of a business units (Jain and Narang, 2004: 109).

2.1.2 Nature of Inventory

As an accounting category, an inventory is an asset represented by goods owned by the firm for the purpose of sale or for utilization in the manufacture of goods for sale. No other assets includes so great a variety of properties are found in the inventories of one business or another. The machinery and equipment are fixed asset of the business using them, but constituted at one time a part of inventory of the manufacturer of such equipment. Even a building until finished and turned over to a buyer by the contractor is an inventory item, a "contract in process," among the assets of the contractor.

In many firms inventories represent a significant portion of current asset or even total assets. Inventories generally represent a very active asset in that there is constant usage and replacement, since many inventory items are of small size and considerable value, the problem of safeguarding ranks next to that of safeguarding cash. The advisability of adequate stocking of items for sale, coupled with the risk of loss and cost of overstocking, creates unique management planning and control problems. Failure to control inventories properly and to account for inventory quantities and costs might well lead to business failure.

2.1.3 Classification of Inventory

Inventories are stock of product in a company manufacturing for sale and component that make up the product. There are various organizations in which inventory exists in manufacturing industries.

The combined inventories of a manufacturing concern consist of: (Glenn, Charlese and John, 2008: 156).

- Raw materials
- Goods in process
- Finished goods
- Manufacturing supplies

i. Raw materials

The tangible goods purchased or obtained from natural sources and on hand principally for direct use in the manufacture of goods for resale. Parts or subassemblies manufactured prior to use are sometimes classified as raw materials; however, a preferable treatment would report them as parts of inventory.

Raw materials are those basic inputs that are converted into finished products through the manufacturing process. These are goods that have yet to be committed to production in a manufacturing firm. "Raw materials inventories are those units which have been purchased and stored for future production" (Western and Copleland, 2009: 814).

Materials used in a factory are classified as direct material and indirect material. Direct material are generally classified to include all materials and parts that are integral part of finished product and their contribution can be directly identified. Indirect materials are generally defined as material used in manufacturing process as supported materials.

ii. Goods-in-process (GIP)

The goods partly processed and requiring further processing before sale. Goods in process inventory normally is valued at the sum of direct material, direct labour and allocated manufacturing overhead cost incurred to date of inventory. "Goods in process include such items as components that is not yet ready to be sold." (Hamptom, 2010: 241).

Work-in-process inventory is strongly influenced by the length of the production period, which is the time between placing raw materials in production and completing the finished product. Inventory turnover can be increased by decreasing the production period, one means of accomplishing this is new technique such as just-in-time (JIT) inventory management. Another means is to buy items rather than make them. (Westen and Copeland 2009, 818).

iii. Finished Goods

The manufactured articles completed and being held for sale at the sum of direct material finished goods are those completely manufactured product, which are ready for sale. In a manufacturing firm, they are final output of production process. Stock of raw materials and WIP facilitate production of finished goods. Finished goods are required for smooth marketing operation. "Therefore finished goods are completely goods a waiting for sale' (Pandey, 2010: 756).
Mainly following types of finished products are produce by UNL.

- i. Detergents,
- ii. Toilet soaps,
- iii. Personal products,
- iv. Scourers,
- v. Laundry soap etc.

iv. Manufacturing supplies

The items on hand such as lube oils for the machinery, cleaning materials, and supply items which compare an insignificant part of finished products as for example, the thread and glue used in binding this book.

Firm also maintains manufacturing supplies inventory. "It includes office and plant cleaning materials (soap, broom etc.), oil, fuel, light, bulb and like those materials that don't directly enter into production, but the necessary for the production process; usually these supplies are small part of total inventory and don't involve significant investment" (Pandey, 2010: 884).

2.1.4 Motives of Holding Inventories

The basic reason for holding inventory is to keep the production activities unhampered. It is neither physically possible nor economically justifiable to wait for the stocks to arrive at the time when they are actually required (Jain and Narrang, 2004: 32).

a. The transaction motives:

It emphasizes the need to maintain inventories to facilitate smooth production and sales operation. A company should maintain adequate stock of materials for supply to the factory for continuous production. It is not possible for a company to procure raw materials whenever it is needed. A time lag exists between demand for materials and its supply. There also exists uncertainty in processing in time at many occasions. The procurement of raw materials may be delayed because of such factor as strike transportation disruption or short supply. Therefore, the firm should maintain sufficient stock of raw materials at a given time to stream live production.

b. Precautionary Motive

It necessitates holding of inventories to guard against the risk of unpredictable change in demand and supply forces and other factors. Stock of finished goods has to be hold because production and sales are not instantaneous. A firm can't produce immediately when goods are demanded by customers. Therefore, to supply finished goods on a regular basis their stock has to be maintained. Stock of finished goods has also to be maintained for sudden demand from

customers. In case the firms sales are seasonal in nature substantial finished good inventories should be kept to meet the peak demand. Failure to supply products to customers, when we demanded, would mean loss of the firm's sales to competition. "The level of finished goods, inventories would depend upon the coordination between sales and production as well as on production time" (Pandey, 2010: 984). WIP inventory builds up because of production cycle is the time span between introduction of raw materials in production and emergence of finished product at completion of production cycle. Fill production cycle complete stock of WIP has to be maintained. Efficient firms constantly try to make production cycle smaller by improving their production techniques.

c. Speculative Motive

It influences the decision to increase or reduce inventory levels to take advantage of price fluctuations. Different factor which may necessitate, purchasing and holding of raw materials inventories quantity discount and anticipated price rise. The firm may purchase large quantities of raw materials that needed for desired production and sales level to obtain quantity discount of bulk purchasing.

2.1.5 Needs/Benefits of Holding Inventories

There are many benefits of holding inventories. By holding inventories, the firm is able to separate the process of purchasing, producing and selling. If firms were not willing to hold adequate raw materials and finished goods, purchasing would take place only when immediate production and sales were anticipated. When a customer signed a agreement, the firm would not be to after rapid delivery when the scheduled production runs, it would achieve none of the economies that longer runs provide. Inventories are used to provide cushions so that the purchasing production and sales function can proceed at their own optimum paces. "In achieving the separation of these functions, the firm realizes a number of specific benefits' (Hampton, 2000: 228).

i. Avoiding Losses of Sales

If the firm doesn't have goods available for sale, it will lose sales. Customers requiring immediate delivery will purchase their goods from the firm's competitors and others will decide that they do not need to buy goods after all, if they must wait for delivery. The ability of the firm to give quick service and to provide prompt delivery is closely tied to the proper management of inventory.

ii. Gaining quantity discounts

If the firm is willing to maintain large inventories in selected product lines, it may be able to make bulk purchase of goods at large discount. Suppliers frequently offer a greatly reduced price if the firm orders double or triple its normal requirement. By paying less for its goods, the firm can increase profits, as long as the cost of maintaining the inventories are less than the amount of discount.

iii. Reducing order costs

Every time a firm places an order, it incurs certain costs. Forms must be typed, checked, approved and mailed, when goods arrive, they must be accepted, inspected and counted. The invoice must be checked with the goods and then sent to the accounting department so that the supplier can be paid. The variable cost associated with individual orders can be reduced if the firm places a few large orders instead of numerous small orders.

iv. Achieving Efficient Production Runs

Once an assembly line or piece of machinery is prepared to receive certain raw materials and perform selected production operations, a set-up cost has been incurred. This cost must be absorbed in the subsequent production run. Inventories assist the firm in making sufficiently long runs to achieve efficient production.

2.1.6 Objectives of Inventory Management

Efficient management of inventory should ultimately result in the maximization of the owner's wealth. In order to minimize cash requirements, inventory should be turned over as quickly as possible, avoiding stock outs that might result in closing down the production line or lead to a loss of sales. It implies that while

management should try to pursue the financial objective of turning as quickly as possible. Sufficient inventories satisfy production and sales demand.

The objectives of inventory management consist of two counter balancing parts (Khan and Jain, 2010: 20.1).

- i. To minimize the firms investment.
- ii. To meet a demand for the product be efficiently organizing the firms production and sales operation.

In the context of inventory management, the firm is faced with the problem of meeting to conflicting needs.

- i. To maintain a large size of inventory for efficient and smooth production and sales operation.
- ii. To maintain a minimum investment in inventories to minimize profitability.

Both excessive and inadequate inventories are not desirable. There are two larger points within which the firm should operate. The objective of inventory management should be to determine and maintain optimum level of inventory investment. The optimum level of inventory will lie between two danger point of excessive and inadequate inventories.

The major danger points of excessive inventory are:

- i. Unnecessary tie-up of the firms funds and loss of profit.
- ii. Excessive carrying cost
- iii. Risk of liquidity

The excessive level of inventories consumes funds of their firms, which cannot be used for any other purpose, and thus, it involves or opportunity cost. the carrying cost such as cost of storage, handling, insurance, recording and inspection, also increase in proportion to the volume of inventory. These cost will impair the firm's profitability further. Excessive inventories carried for a long period increase chance of loss of liquidity.

Maintaining an inadequate level of inventories is also dangerous the consequences of under investment in inventories are:

- i. Production hold-ups

- ii. Failure to meet delivery commitments.

In adequate raw material and WIP inventories will result, in frequent production interruptions. Similarly, if finished goods, inventories are not sufficient to meet the demand of customer regularly, they may shift to competitors, which will amount to a permanent loss to the firm.

Therefore, the objective of inventory management should be to avoid excessive and inadequate level of inventories and maintain sufficient inventory for the smooth production, and sales operation. Efforts should be made to place an order at right time with the right source of acquire the right quantity and the right price and quantity. Effective inventory management objectives can be summed as follows:

- i. Ensure a continuous supply of raw materials in period of short supply and anticipate price charges.
- ii. Maintain sufficient finished goods inventory for smooth sales operation and efficient customer service.
- iii. Minimize the carrying cost and time, and
- iv. Control investment in inventories and keep it an optimum level.

2.1.7 Importance of Inventory Management

A company should maintain adequate stock of raw materials for continue supply to factory and uninterrupted production. It is non-possible for the company to procure raw material whenever it is needed. A time lag (lead time) exists between demand for material and its supply. The procurement of raw material may delayed because of such factors as strike transport, disturbance, short supply of raw material, at given time to stream like production. Other factors, which may necessitate purchasing and holding of raw material inventories are quantity discount and anticipated price rise in future. The firm may purchase large quantity of raw material then needed for desired production and sales level to obtain quantity discount of bulk purchasing. The firm would also like to accumulate raw material in anticipation in price rise in future.

The importance of inventory management and need for the coordination of inventory decision and transportation policies, has long been evident.

Unfortunately managing inventory is complex supply chain in typically difficult, and may have a significant impact on the customer service level supply chain system wide cost.

"Inventory represent the major element in the working capital of many business undertaking and accordingly requires substantial investment in inventory can be minimized, desired inventory levels can be maintained for smooth production operation and increased consumer satisfaction and total inventory cost be minimized" (Agrawal, 2010: 20).

Inventory management is the important function of an organization cover various aspect input process i.e. it deal with raw materials, procurement of machines and other equipment necessary for the production process and spare parts for the maintains of the plant. Thus in an production process inventory management can be considered as an preliminary to information process, it involves planning and programming for the procurement of material and capital goods of desire quality and specification at reasonable price and at the required time, it is also concerned with market exploration for the items be purchase to have up to date information, storage and stock control, inspection of the material received in the enterprise, transportation and material handing operation relates to materials and many other function (Goel, 2007: 294).

"The important of inventory management can be realized when it is said that purchase account for nearly 50 percent of an organizations annual expenditure. The nearly 80 percent of working capital is tied up in inventory and the carrying cost is almost 25 percent a year. That materials represent 40 to 60 percent of sales price or 60 to 80 percent of the production cost of a product and that even a saving of 50 percent in material cost will substantially increase the profit margin of an enterprise" (Nair, 2004: 240).

The above different writers view shows the importance of inventory management. Therefore, inventory are use to separate purchasing and selling with helps to avoid losses of sales, gain quantity discounts, reduce order cost and achieve the efficient production. If the organization is not paying attention

to inventory management, it will affect the efficiency and profitability of the organization.

Most of the manufacturing companies of Nepal are suffering from poor inventory management. Unilever Nepal Limited is not an exception to this problem, thus this study seeks to understand the problem faced by the UNL. Being a productive factory, it spends a lot of time, money and effort in inventory management. Thus, managing inventory is a challenging task for any manufacturing organization.

2.1.8 Techniques of Inventory Management

One of the great questions of every type of manufacturing organization is the level of inventory to minimize cost and maximize profit. The most common problem is that how much should be ordered? When should it be ordered?

"The question, how much to order, relates to the problem of determining economic order quantity, and is answered with an analysis of cost of maintaining certain levels of inventories. The second question, when to order, arises because of uncertainty and its problem of determining the re-order point" (Pandey, 2010: 902).

2.1.8.1 Economic Order Quantity (EOQ)

EOQ is an important concept in the purchase of raw materials and in the storage of finished goods and transit inventories. To determine the optimal order quantity for a particular item of inventory, given its forecasted usage, ordering cost and carrying cost. Ordering can mean either the purchase of the item or its production (Van Horne, 2003: 377).

EOQ refers to the optimal level of investment in inventory where the total cost of inventory, comprising carrying and ordering costs, will be a minimum. One of the major inventory management problems to be resolved is how many inventories should be added when inventory is replenished. If the firm is buying raw materials, it has to decide the lots in which it has to be purchased on each replenishment. If the firm is planning a production run, the issue is how much production to schedule. These problems are called order quantity

problems, and the task on the firm is to determine the optimum or economic order quantity.

Economic Order Quantity Assumption

The EOQ model relies on several assumption:

- i. There is a continuous, constant, and known demand rate.
- ii. The lead time/replenishment cycle is known and constant.
- iii. The constant purchase price is independent of the amount ordered.
- iv. Transportation costs are constant no matter the amount moved or the distant traveled.
- v. No stock outs are permitted.
- vi. There is no inventory in transit.
- vii. All inventory parts are independent of each other.
- viii. The planning horizon is infinite.
- ix. There is no limit on the amount of capital available.

These assumptions after stay far from real life. Demand is rarely continuous, constant and known, lead times, transportation costs, and prices vary, stock out happen, planning horizons are limited and volume discounts can be significant. Also, many products are independent. No inventory in transit means that the firm buys on a delivery price basis and sells. Planning horizon is limited, as is capital available. Nonetheless, EOQ is most widely used single inventory model. It is simple to use and it produces exact answers.

There are variations to basic EOQ. One variant keeps the order quantity constant, but flows the timing to vary. This is known as the fixed quantity, variable time model. Another EOQ variation is set the order time (re-order point) but vary the order quantity (variable quantity, fixed time).

Because lead times vary and forecasts miss. There is a need for safety stock. Safety protects the firm from stockouts when demand on lead times fluctuated. The next section more fully explores safely stock (Bloomberg and Hanna, 2002: 251).

Pre-requisite for EOQ

Following facts are to be considered as prerequisite for determination of EOQ.

- i. Holding cost per unit per (period) year.
- ii. Ordering cost per order.
- iii. Annual requirement or quantity required per period.
- iv. Cost per unit.

Approaches to Set EOQ

EOQ model can be determined by following methods:

- i. Mathematical or formula method.
- ii. Trial and error approach.
- iii. Graphic method.
- iv. Mathematical or formula methods.

Mathematical models are also available to calculate economic order quantity.

There are numerous model exist, as the field of inventory management and can be studied in college programs such operation research and production management. Even many mathematical model exists, the main objective of these model is to reduce, minimizes the inventory cost/total cost.

Without getting into highly refined decision models we can illustrate the concept of EOQ with a basis mathematical model. We calculate EOQ by using the following formula:

$$EOQ = \sqrt{\frac{2AO}{C}}$$

Where,

A = Annual demand/requirement/sales

O = Ordering cost per order.

C = Carrying or holding cost per unit per year

EOQ=Economic order quantity

ii. Trial and Error Approach

This is another approach to calculate economic order quantity. A firm has different alternative purchase policy of its inventory. According to this approach the carrying and ordering cost for different sizes of order to purchase inventories computed and the order size with the lowest total cost of inventory is the economic order quantity.

A tabular arrangement of data relating to items of material may allow the determination of appropriate EOQ. In this approach following points are included:

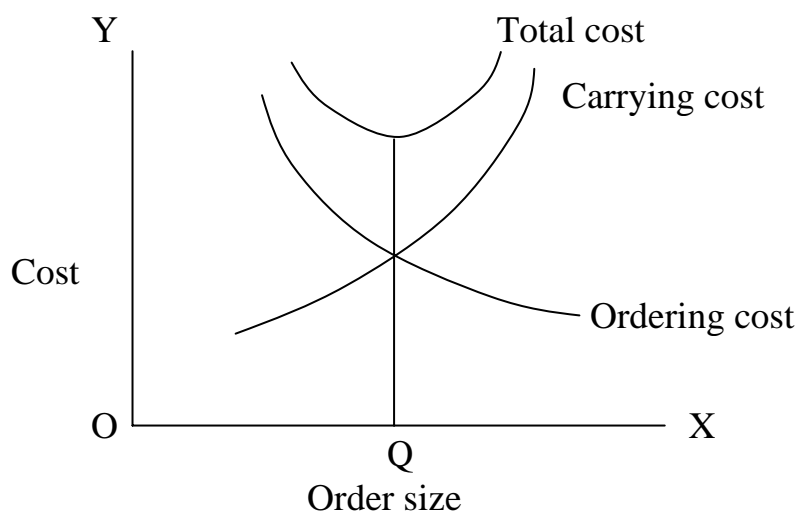
- a. No. of order = Increase no. of order decrease order size.

- b. Order size = Annual requirement divided by no. of order.
- c. Average inventory = Equal to half of order size
- d. Ordering cost = Ordering cost per order \times No. of order
- e. Carrying cost = Average inventory \times Carrying cost per unit per year
- f. Total cost = Ordering cost + Carrying cost

III. The Graphic Approach

The economic ordering quantity can also be found out graphically. Figure 2.1 given below illustrates the EOQ function. In the figure, carrying, ordering and total costs are plotted on vertical and horizontal axis. The horizontal axis is used to represent the order size. Total carrying increases as the order size increases, because, on an average, a large inventory will be maintained, and ordering cost declines with increase in order size because a large order size means a lower number of orders. The behaviour of the total cost curve is noticeable since it is a sum of two types of costs, which behave differently with order size. The total cost declines in the first instance, but they start rising when the decrease in average ordering cost is more than offset by the increase in carrying costs. The EOQ occurs at the point Q, where the total cost is minimum. Thus, the firm's operating profit is maximized at point Q.

Figure 2.1
Graphic Approach of EOQ



Source: Pandey, I. M. 2010; 888

It should be noticed that the total cost of inventory are fairly insensitive to moderate changes in order size. It may, therefore, be appropriate to say that there is an economic order range, not a point. To determine this range, the order size may be change by some percentage and impact on total cost may be studied. If the total cost do not change very significantly, the firm can change EOQ with the range without any loss (Pandey, 2010: 888).

2.1.8.2 ABC Analysis (Selective Inventory Control)

ABC analysis is the application of stock holding of Pareto's law, which shows that the majority of inventory value will be represent by relatively few items.

The first step in the inventory control process is classification of different type of inventories to determine the type and degree of control required for each. The ABC system is widely used classification technique to identify various items of inventory for purpose of inventory control. This technique is based on the assumption that a firm should not exercise the same degree of control on all items of inventory. "It should rather keep a more rigorous control on items that are the most costly and/or the slowest turning, while items that less expensive should be given less control effort" (Khan and Jain, 2004: 112).

It is very difficult to monitor and control the enormous number of stock items. As such manufacturing organization find it useful to divide inventories into three categories for the purpose of exercising selective control on inventories. ABC analysis is a control technique that divides items into sub-classification and uses different control system for each group of inventories. Under these techniques of inventory control, inventories are listed in A, B and C group in descending order based on money value of consumption as follows:

- | | |
|------------------------------|---|
| i. High price inventories | A |
| ii. Medium price inventories | B |
| iii. Low price inventories | C |

The items included in group 'A' involves largest investment and would be under tightest control by management. Therefore, inventory control should be most rigorous and intensive and the most sophisticated inventory control technique should be apply these items. The 'C' group consists of items of

inventory which involves relatively small investment although the number of items fairly large. These items deserve minimum attention. The lower level of managers may be given authority to exercise control over these items. The group 'B' stands mid way. It deserves less attention than 'A' but more than 'C'. The 'B' items fall in between these two categories and the responsibility to control these inventories may be given to middle level managers. Employing less sophisticated techniques can control it.

2.1.9 Role of Inventory in Overall profit Planning of the Organization

Profit planning and control (PPC) is an important approach developed for an effective management system mainly in profit-oriented organizations. Simply planning is the process of forecasting for a future time period. It shows the direction for the organization where to go and how to go to accomplish the certain objective made by the organization. Without making an appropriate plan, the organization can't reach its destination. A profit plan or budget is a comprehensive and coordinated plan expressed in financial terms for the operation and resources of an enterprise for some specific period in the future. Profit planning is the part of overall planning. PPC includes comprehensive, coordinated, financial terms, resources plan, time etc.

For appropriate profit planning of the organization it has to prepare different budgets like sales budget, production budget, material purchase budget, material usage/consumption budget, open to buy budget, labour hour budget, labour cost budget, overhead budget (manufacturing as well as non-manufacturing overhead), flexible expenses budget, capital expenditure budget, cash budget (cash receipt and cash disbursement budget), budgeted income statement, budgeted balance sheet, activity based budget, cost volume profit analysis (CVPA) etc.

2.1.9.1 Coordination between Sales, Production and Inventory

The manager must plan an optimum coordination between production, inventory and sales. An efficient coordination production plan is necessary for optimum production and sales. There may be high pressure from both sales and

manufacturing for high inventory level. the production budget and inventory policies provide the basis for obtaining this coordination.

Production manager must translate the quantity in the sales budget into unit production requirement for the budget period for each product while considering the management of inventory policies. An efficient plan should represent the optimum coordination between sales budget, essential inventory levels and production levels.

2.1.10 Methods of Inventory Computations

We can calculate inventory by different methods. Mainly the organization can compute inventory by following methods.

a. Average sales method:

Under this method inventory is calculated with average sales of certain time period.

$$\text{Inventory} = \frac{\text{Yearly sales/ total sales during the time period}}{\text{No. of time period or 12}} \times \text{Required stock period}$$

It is stable and suitable to basic product but it can't be used in big organization.

b. Moving Average Method

It is based on uneven no. of period mostly 3, 5 or 7. Under this method inventory can be calculated as:

$$\text{Inventory} = \frac{\text{Sales(Previous months+ Current months+ Next months)}}{\text{Total no. of period}} \times \text{Req. no. month}$$

2.1.11 Determinants of Inventory Policies

Inventory policies or levels are affected by different factors. Sometimes the organization has kept more inventories whereas in sometimes it has to kept low inventory levels. Some major determinants of inventory levels are as follows:

i. Types of market

Sales season affect inventory policies. In peak season the organization has to kept high inventory whereas in slack season it has to kept low inventory. So

organization has to keep inventory according to types of market or sales season.

ii. Types of products

For necessary product, inventory is stable or it has to kept low inventories whereas in luxurious goods, high inventory is required. So while determining inventory level, organization has to consider regarding the types of product.

iii. Life of product

If goods are perishable, low inventory is required but the durable goods the organization can kept high inventory, so the life of product affect in determining inventories policies.

iv. Processing time

If production/process time is long, high inventory should be kept otherwise organization to keep low inventory.

v. Establishment cost

If pre-production or establishment cost is high stable inventory is better otherwise organization has to keep inventory in fluctuation level.

vi. Availability of capital

If sources of capital are cheap and sufficient it can be kept high inventory. And if sources of capital are more expensive or scare, organization has to keep low inventory level.

vii. Storage facility

If the organization has it's own and ideal store, it can kept high inventory otherwise it has to keep low inventory level.

viii. Storage Risk

If loss on storage like obsolescence, season off, of fashion, loss due to fire theft mice paste, decrease in price, lifting by employee, it has to kept low inventory otherwise it can be kept high inventory.

ix. Availability of raw material

If materials are easy available in the market it can be kept low inventory otherwise it should be kept high inventory.

2.1.12 Reasons for Carrying Inventories

Inventory management is as much important as the management of receivables for the reason that investments in their two types of assets generally account for more than two third of the total investment in current assets. Business firm could make profit if they do not have to hold any inventory. Unfortunately, with the exception of some firms in the service industry, firm hardly get the blessing of running business without holding a minimum level of inventory. Manufacturing firm need to hold the inventories to assure interrupted business operation. However, many of them hold for some other purpose too. For example, raw materials stocks for the current production plan, to meet seasonal peaks, to avoid price increase, economize the ordering costs, etc (Pradhan, 2009: 181).

The fundamental reason for carrying inventories is that it is physically impossible and economically impractical for each stock item to arrive exactly where it is needed and exactly when it is needed. The manufacturer must therefore keep extra supplies of raw material inventory to use when they needed in the conversion process.

Other reasons for carrying inventories are given below:

a. Primary level

Physically impossibility of getting right amount of stock an exact time of need.
Economically impractical of getting right amount of stock and exact time of need.

b. Secondary level

Organization has to carry inventory because of following reasons:

- Return on investment and turnover
- Buffer stock
- Decoupling
- Production smoothing
- Material handling
- Bulk purchase

2.1.13 Procedures of Inventory Management

The procedures of inventory management cover the activities such as:

- Purchasing
- Receiving and storekeeping
- Issuing and pricing

2.1.13.1 Purchasing

i. Meaning of purchasing

The process of inventory management in fact being with purchasing. The need for particular materials initiates purchasing in a firm. Purchasing in narrow sense refer merely to the act of buying as items at a price and in boarder sense purchasing makes it's a management activity that goes beyond the simple act of buying and including the planning and policy activities, research and development service section. Management suggest that purchasing decision involve the weighting of alternatives possibilities and may of these alternatives involve influence on the other function on the purchase decision. A good purchasing management has played important role in manufacturing companies. We should pay more attention in the purchasing of raw materials, supplies and equipment. We should purchasing raw materials, supplies in the right quantity of the right quality from the right origin at the right time and cost.

Purchasing activities relating to purchasing materials and supplies consumed during production. The purchasing functions, which provides materials, supplies and services form outside vendors. Accordingly, "Purchasing is an important boundary function that supports operation by acquiring major resources for the conversion process" (Hamton; 2010: 228).

The purchasing in modern sense is a strategic managerial function and any negligence will ultimately result into decrease in profit.

ii. Objective of Purchasing

The objectives of purchasing should conform the overall objectives of an organizations. The objective of purchasing are like the objective of integrated logistics. The efficient acquisition of products and services requires the right

materials in right quantity, in right condition, at the right time, from the right sources, with the right services and the right price.

More explicitly is expected to accomplish nine items (Bloomberg and Hanna, 2002: 481).

- a. Provide an uninterrupted flow of materials, supplies and services required to operate the firm.
- b. Minimize inventory investment and loss.
- c. Maintain adequate quality standards
- d. Find or develop competent suppliers.
- e. Standardize, where ever and whenever possible, the items bought when ever possible.
- f. Purchased required item and services at the lower ultimate price.
- g. Improve the organizations competitive position.
- h. Work harmoniously with other department in the organization.
- i. Accomplishing the purchasing objectives at the lowest possible level of administrative costs.

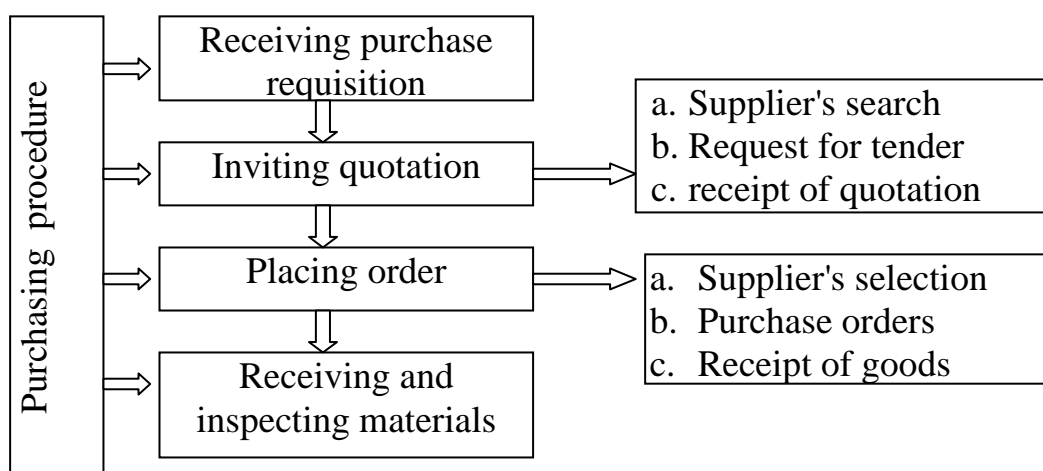
iii. Procedures of purchasing

"Effective purchasing means learning the purchase requirements identified qualified sources of supplies, minimizing the total cost of supplies and administrating the purchase" (Adam and Ronald, 2008: 221).

The main steps in purchasing procedures may be listed as follows

Figure 2.2

Procedure of Purchasing



Source :Dongol and Pradhan, 2007

2.1.13.2 Receiving and Storekeeping

After some time of placing the order, flow up process starts to get quick delivery of the items. The purchasing department at the time of delivery receives the item and received items are compared with purchase order and actual material received should be entered in goods received note. Then all items received by the purchasing department should be passed into store for protection against deterioration and pilferage. They are stored in such a way that, their location is easily identified at the time of issue. "The store function involves, both keeping and store of materials and keeping the store records, the former being physical task and the later being accounting task depending the nature and requirement of the organization the stores are classified as centralized and decentralized store. (Agrawal, 2010: 21).

The problem of storage is not solely that of safe keeping stores must be quickly and conveniently available to the consumers. The optimum location is often adjacent to there where the materials are actually used. This reduce delay and cost of handling and relieves internal traffic congestion. For this reason, decentralized storerooms are often provided near various production centers. In some cases, material on floor, immediate accessibility being more important then possibility of loss.

Storekeeping should be given due place in the organization. Otherwise mishandling of goods, wastage in storing and handling will add to the cost of production. The importance of storekeeping has not been properly recognized by the manufacturing organization so far, many organizations spend lavishly on machines and wages while storekeeping is ignored and store housed in camped quarters, ill equipped and ill ventilated. Storekeeping are also ill paid in comparison to others in similar status. All these causes are responsible for wrong or short issues, loss of stock of raw materials, unexpectedly running of stock and preparation or incorrect vouchers, all these led to theft and pilferage of stock and delay in production.

In the light of above explanation storekeeping can be described as the keeping of materials in stores in a scientific and systematic way.

i. Objectives of storekeeping

The major objectives of storekeeping may be started as follows:

- Receiving, handling, and issuing goods economically and efficiently.
- Using the storage available space and labour effectively.
- Protection of all goods in stores against all losses from fire, theft and obsolescence.
- Minimizing the investment on inventories.
- Maintaining regular supply of raw materials of all times when properly authorized.
- Facilitating ordering of required materials.
- Minimizing the inventory handling cost.

To achieve the above said objectives a firm generally uses different types of controlling devices like:

a. Bin cards

A bin card makes a record of receipt and issue of materials is kept for each item of stores carried. These cards are maintained by the storekeeper and storekeeper is answerable for any difference between the physical stock and the balance shown in the bin card. These cards are used not only but recording receipts and issues of stores but also assist the storekeeper to control the stock. For each item of stores, minimum quantity, maximum quantity and ordering quantity are stated on the card. By seeing the bin card the storekeeper can send the materials requisition for the purchase of material in time.

Sample of bin card

Bin card No.:

Bin No.:

Name of articles:

Maximum quantity:

Code No.:

Minimum quantity:

Store ledger folio:

Ordering quantity:

| Date | Receipts | | Issues | | Balance qty. | Date of checking | Remarks | Goods on order | | |
|------|------------------------------|-----|----------------------------------|-----|-----------------|---------------------|---------|-----------------------------------|-----|------------------------------|
| | Goods rec. note no. | Qty | Store requisition note no. | Qty | | | | No. and date of order | Qty | date of goods received |
| | | | | | | | | | | |

b. Store ledger

This ledger is kept in the costing department and is identical with the bin card except that receipts issues and balanced are shown with their money values. This contains an account for every time of stores and makes a record of the receipts, issues and the balances, both in quantity and value. Thus, this ledger provides the information for the pricing of materials issues and the many value at any time of each items of stores (Jain and Narang, 2004: 239).

Sample of store ledger

Name of article:

Maximum quantity:

Code No.:

Minimum quantity:

Bin No.:

Ordered quantity:

| Date | Receipts | | | | Issues | | | | Balance | | | Remarks |
|------|----------|------|------|------|--------|------|------|------|---------|------|------|---------|
| | S.N. | Qty. | Rate | Amt. | S.N. | Qty. | Rode | Amt. | Qty. | Rode | Amt. | |
| | | | | | | | | | | | | |

2.1.13.3 Issued and Pricing

Each item the inventory has some value associated with it. this value depends on the price duration of the item inside the inventory, procurement cost, storage cost etc. pricing the inventory is one of the most interesting and widely matters in accounting process. Many organizations are interested in various method of pricing inventory because it has a direct affect on the income. Inventory valuation approach is important is the aspect of income problem.

A basic function of the storekeeper is to issue materials as required. The function should embrace prompt efficient service and the accurate recording of each transaction. The vouchers that support each materials issue may include some from a requisition that specify quantity, time and place of the delivery. The requisition should indicate proper authorization and the amount or order to which material cost is to be charged.

When materials are issued form the store room on requisition, there cost is deducted from the inventory balance. Their cost is also entered in the cost accounting records of material cost of goods in process of manufacture suppliers issued for use in line or staff department are also deducted at cost from the inventory balance and are recorded as an expanses of the department.

2.1.14 Inventory Valuation

A problem arises with a corporation to evaluate the current assets held in an inventory because it affects the profit of the corporation. If we assume the market price is constant and production cost being the same there would not be any problem to establish the inventory but value of goods to be purchased and to be sold to fluctuate, it presents a difficulties in valuation the inventories. In this situation there are many methods which are based on historical cost used in determining the value of inventory are:

a. Specific Identification Method

This method requires that each unit of inventory to be identified with the particular time, it was purchased. This is the easiest when the items have serial number or are distinguishable by model, color or size because accounts must be

able to identify the particular item in order to find the date of purchase. This is suited to low volume high cost item.

b. First in first out (FIFO) method

FIFO method is based on the assumption that the material received are the first to be issued. The materials received and changed on each invoice are changed out from the inventory are the price stated on that invoice until the lot has been exhausted. Material issues are then assured to be issued from the next lot received at the invoice price of the second lot until that lot is exhausted. The units on hand at any time are assumed to be the units last purchased because all issues of materials have been made from the earlier issues. The FIFO method is used in the balance of stores records.

c. Last in First Out (LIFO) Method

As in first out method, latest consignments of material are exhausted first under this method. Therefore, closing stock is valued at the earliest lot on hand the cost of goods sold is based on the cost of recently purchased goods (Jain and Narang, 2004: 32.2).

d. Weighted Average Cost

It assumes that goods are removed from the beginning inventory and purchase group in proportion to the number of units, in these group consequently, cost of the ending inventory also represents a proportional distribution from the beginning inventory and various purchase group. "The weighted average cost computed by dividing the total cost goods available for during the period" (Laughin, 2000: 221).

$$\text{Weight Average Cost} = \frac{\text{Total cost of goods available for sale}}{\text{Total units available for sale}}$$

This method is used widely used by organization that hold item of inventory long period of time because it average out of the effects of price increase and decrease. In addition, weighted average processing is satisfactory when there are both increase and decrease in cost with the accounting period. Some organization uses this method which purchase the inventory item frequently

interval because it does not required that the ending inventory cost associated with any particular purchase group.

e. Standard Cost Method

LIFO, FIFO, and Weighted average cost methods are often awkward to work within the subsidiary records for material under perpetual inventory system. For this standard cost method may be used in a accounting for individual in terms in material inventory.

This method, changes material unit into the factory at a predetermined a budget or estimated price reflecting a normal or an expected future price. receipts and issues of material are recorded in quantities only on materials cared there by greatly sampling the record keeping. Then, there is a basis for comparing existing cost from day, which should exist under normal condition.

f. Base Stock Method

The base stock is valued at the cost prevailing at the time firm began or when the method was adopted. Any additional layers of materials in the inventory of close beyond the unit. The base may be on the basis of FIFO weighted average etc. method.

All the method has their advantage and disadvantage. However, the method chosen in significant for efficient inventory management especially in its financial dimensions.

2.2 Review of Related Studies

Gaire (1999) has studied a research work on the topic of "Inventory management: A case study of Royal Drug Ltd.". The main objective of his study is to identify the problem underlying in inventory management and control system of RDL. Other objectives of his study are:

- i. To assess the types of inventory maintained in RDL.
- ii. To examine the techniques begin employed to manage the inventory in RDL.
- iii. To suggest proper inventory model to RDL bases on analysis.
- iv. To find out inventory position of RDL.

On the basis of study conducted by Mr. Gaire the following findings. The company should define its objective and goals clearly.

- a. The company follow all the quantative techniques and model such as EOQ model, ABC analysis model so that total inventory can be reduce.
- b. Ledger cards can also be used to manage inventory in a simple way.
- c. General manager should be professional on and he should not be changed frequently due to political interference.

Basnet (1999) has conducted the research work on the topic of "Inventory Management: A case study of Himal Cement Company Limited (HCCL)". His main objectives are to find present inventory position of HCCL, to find out inventories management techniques used by HCCL and to provide optimum suggestion regarding inventory management of HCCL.

On his study he found that HCCL is not applying the different methods or technique of inventory management. There is no proper and up to date improvement in inventory management system. Further he recommended that to manage its inventory effectively a firm should use different tools and techniques like EOQ, ABC analysis, reorder level etc. In inventory management, which minimize the inventory cost consequently will result into positive profitability. So it is better to pay attention by top level management to overall management of purchasing, production, sales and financial dimension by which HCCL will run in profitability in the future.

Pradhan (2005) has conducted a study on Significance of "Inventory management of Nepalese manufacturing enterprises". He had studied the ratio of inventories to total assets computed for selected non-financial Nepalese enterprises. On the important finding was to invest on average, about 22 percent of total assets in the form of inventories in 2000/01 by Nepalese enterprises indicates that large amount of money has to be invested in the form of inventory. Hence the inventory management has greater significance.

Ghimire (2006) has studied a research work on the topic of "Inventory management: A case study of agriculture inputs corporation regarding chemical fertilizer and seeds." He stress that for, maintaining good inventory, AIC avoid the problem of overstocking of chemical fertilizer and seeds. Target should realistic, AIC is able to hold only optimum level of ending stock and locked up

capital. It is necessary to develop appropriate standard record keeping system of ending stock.

Bhandari (2007) his thesis on "Inventory Management of Gorkhapatra Corporation". He has stated some problem as inventory management was not based on scientific methods. Due to lack of sufficient models, examples and formulae etc, could not be used fully to ascertain the necessary operation of the corporation. No techniques for inventory management is possible to apply to calculate. One of the major decision because the lack of planning and on systematic methods of regarding cost.

The inventory can be managed smoothly, by classifying them according to their value i.e. ABC analysis those item that have higher use value then others have to give precise control applied overtimes having low use value. When type of classification is made, it will be easier for the corporation to know which items in inventory have higher usage value and which have no and according a precise control or the items in inventory can be applied.

Bhandari (2008) has studied a research work on the topic of "Inventory management and control: A case study of Royal Drugs Ltd.". The main objective of her study tries to focus on the need of comprehensive inventory management and control to improve the performance the identity how far they are in conformity with primary principle and concepts of RDL. Other objectives of her study are:

- i. To analyze present position of inventory management.
- ii. To examine the techniques being employed to manage the inventory by this enterprise.
- iii. To assess the types of inventory maintain and in this enterprises.

She concluded after study, if the company want to success. It was necessary to maintain a suitable level of inventory i.e. using EOQ model, for procurement and ABC analysis for inventory management. The company has not been used properly top find the necessary operation because of lack of adequate data without scientific tools and techniques.

Bhandari (2010) on the topic of "Inventory management of Bottlers Nepal (Terai) Limited". The main objective of her study tries to focus on the need of comprehensive inventory management are: to study the methods or systems

used for managing the inventory of BNTL. To analyze the inventory levels maintained by BNTL. To study the present practice of procurement policy of BNTL. To study the trend of procurement and sales of BNTL. To identify the problem faced by BNTL in the management of inventory.

The major findings of her study are as follows:

Letter of Credits used to import raw materials from foreign countries. By coefficient of variation, the annual requirement is more consistent than annual purchase. The average actual inventory cost is higher than that of the economic inventory costs. Thus the company should make economic order size to minimize the inventory cost. In an average actual purchase slightly greater than the actual sales. Value of both S.D. and C.V. signifies the consistent nature of actual sales compared to actual purchase.

2.3 Research Gap

Although there are various studies related to inventory management regarding different organizations and available in different libraries but review literature indicates that there are few studies devoted to inventory to Nepalese context. These few studies conducted earlier have now needed to carryout a study to assess the recent development in inventory management. The data used in the previous study is of five years but this study covers the data of six years from FY 2006/07 to FY 2011/12. Nobody of the earlier studies had focused on role of inventory in overall profit planning of the organization although inventory and different components of profit planning like production planning, purchase planning etc. are closely related to each other. Similarly, nobody had shown the relationship of inventory with sales, production and raw materials, although they are closely related to each other. Moreover, this study has not been done by previous researcher as separately. Thus, to fill the gap, this study has been conducted. Thus, this study will be milestone in the field of inventory management and control in Unilever Nepal Ltd. In spite of above, multiple gap among the researcher's view as well as there is time gap regarding the study of inventory management.

CHAPTER THREE

RESEARCH METHODOLOGY

Research Methodology is the process of arriving at the solution of a problem through a planned and systematic dealing with the collection, analysis and interpretation of the facts and figures. The objective of the study are to analyse the inventory management of Unilever Nepal Ltd. and it's impact on profitability.

This chapter presents research methodology adopted in achieving the objectives stated in the earlier chapter. This chapter contains nature of research nature and sources of data information, data gathering procedure.

And finally different statistical and mathematical tools were used to analyse the relevant information.

3.1 Research Design

"A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy procedure" (Kothari, 2005: 39). Research design is the plan structure and strategy of investigation conceived. So as to obtain answer to research question and to control variances to achieve of the study, description and analytical research design have been used.

This study is entitled, "Inventory Management of Unilever Nepal Ltd." This study deals with Unilever Nepal Ltd. only material collection, consumption and inventory position product groups are variables under the study. This study based on primary as well as secondary data. Some simple statistical methods such as trend line and correlation analysis have been applied to examine the facts of data.

3.2 Population and Sample

The total numbers of manufacturing industries in Nepal are the population to this study because research work is related with inventory management of manufacturing industry in Nepal. But due to the various limitations such as time, financial resource, availability of data etc. constrained the study, for this reason, only one manufacturing company Unilever Nepal Limited is randomly selected for the purpose of the research work.

3.2.1 Brief Overview of Unilever Nepal Ltd.

The study attempts to focus on Unilever Nepal Ltd. was formed as a subsidiary company of Hindustan Lever Ltd. of India. The factory is situated at Basamadi VDC-5 of Makwanpur District, 6 km. far from Hetauda of central development region of Nepal. The corporate office of the company is situated at Heritage Plaza II Kamaladi, Kathmandu, Unilever Nepal Ltd. was formed as a public ltd. company in 1993 and production started from December 1994. It was registered under company act 2053. At a growing manufacturing company UNL has main objective of expanding business by introducing new brands and categories in the domestic market and import substitution of foreign goods too.

The company received the "first FNCCI national excellence award" for its overall performance. UNL is taking a great corporate social responsibility. It has contributed in various way to social sector, UNL is proud of its role in the income and employment generation opportunities in the country. UNL is providing direct employment to over 135 Nepalese citizens while generating indirect employment by over 20 times that number through its networks of suppliers, distributors and ancillaries (annual report, 2068/69). It is already one of the largest corporate taxpayers of HMG Nepal.

3.3 Nature and Sources of Data

Information is life blood of any research. Both primary and secondary information have been used in this study. Primary information's are used on questionnaire, informal interview as well as unstructured dialogues and discussions with the officials of Unilever Nepal Ltd. The required data and information for analysis are directly collected form the annual reports of UNL, direct contact to UNL corporate offices. Supplementary data and information are collected from number of institution like Central Department of Management's Library, T.U. Central Library and documentation Section of T.U. Library, UNL corporate office etc.

Secondary data have been collected form the following sources:

- Reports and financial statement of the company.
- Published and unpublished official rewards.
- Books, articles, magazine, annual report etc.

All the data are compiled, processed and tabulated in the time series as per the need and objective. Various data and information are collected from economic journals, bulletins, magazine (Boss, the business age etc.).

3.4 Data Gathering Procedure

The secondary data are directly obtained from various sources mentioned above for the purpose of data analysis are taken from official records, websites. The researcher had to visit the head office of Unilever Nepal Ltd. and get data form the records.

For primary information, with a view of collecting and additional information, informal interviews with the officials have been taken. All the gathered data have been used according to need and requirement of the study.

3.5 Presentation and Analysis of Techniques and Tools

To analyze the collected facts and figures, various according tools are used to effectiveness of inventory management and control whatever necessary. The

techniques included the statistical tools, graphs, Karl Pearson Coefficient and Correlation and the inventory management techniques applied in this study are EOQ, different stock levels, inventory turnover ratio and ABC analysis.

To achieve the objectives of the study, various financial as well as statistical tools has been used in this study. The analysis of data will be done according to pattern of data available. Because of limited time and resources, some simple analytical statistical tools such as percentage change, coefficient of correlation and method of least square are adopted in this study. Similarly, some strong accounting tools such as ratio analysis and trend analysis have also been used for financial analysis.

3.5.1 Statistical Tools

Some important statistical tools are used to achieve the objective of the study. In this study, statistical tools such coefficient of correlation analysis, deviation have been used.

a) Coefficient of Correlation

This analysis identifies and interprets the relationship between two or more variables, in the case of highly correlated variables, the effect on one variable may have effect on other correlated variable. Under this topic, Karl Pearson's coefficient have been used to find out the relationship between the different variables. The formula for computing Pearson's correlation coefficient (r) using direct method is as follows:

$$r = \frac{N\sum xy - \sum x.\sum y}{\sqrt{N\sum x^2 - (\sum x)^2} \sqrt{N\sum y^2 - (\sum y)^2}}$$

Where,

y = Dependent variables

x = Independent variables

r = Correlation coefficient

N = No. of time period

3.5.2 Financial Tools

a) Percentage Analysis

This ratio is calculated to measure the acceleration or retardation of any variable to the company in each year. This helps the bank to identify the degree how the variable is moving in each year. It also helps the organization to take the suitable direction. It is calculated in following way:

$$\text{Annual percentage change} = \frac{\text{Amount of this year} - \text{Amount of last year}}{\text{Amount of last year}}$$

b) Major tools for analysis:

- ABC analysis
- EOQ analysis
- Different turnover ratio (Inventory turnover ratio, RM turnover ratio, FG turnover ratio etc.)
- Different statistical tools like, Mean, Standard deviation, Coefficient of correlation, Coefficient of variation, Regression Analysis etc.)

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

The main objective of this study is to examine the present practice of inventory management system in UNL. To achieve the said objective, collected data are analyzed in this chapter by applying inventory management tools and technique.

On the basis of official recorded data of UNL, the researcher has tried to explore the existing problems of inventory management and control system. The researcher had made analysis and diagnosis of the collected data to provide the suggestions and recommendations to the UNL.

4.1 Purchasing Procedure Practice in UNL

Purchasing is the first important function of inventory management in any manufacturing company. So, UNL also require different types of raw material such as oils, lauric acid, caustic soda, salt, plam, fatty acid, galay, chiury clay etc. for the production of different types of products.

UNL needs regular supply of different types of raw material an WIP materials (Soap noodles) for the continuous production operation. required raw material for the factory are purchased by using the following purchasing procedures.

4.1.1 Collection of Requisition

Purchasing manager of purchasing department of UNL collects the purchase requisition slip from the store department for all items.

4.1.2 Decision for Purchase

When the purchase requisition is received by the purchasing department, then purchasing manager decides what, when and how much to buy.

The quantity of purchasing of raw materials directly affects the investment on inventory and the cost associated with, inventory, ultimately affects the profitability rate of the company. So, the company should determine appropriate purchase quantity of raw materials to minimize the investment on inventory and cost associated with it. To cope with this situation the company

may apply the EOQ model to determine the appropriate purchase quantity of material. But EOQ model of inventory management is not in practice in UNL.

4.1.3 Selection of Suppliers

UNL is a subsidiary company of Hindustan Lever Ltd India. So the requirement of all materials are purchased from Hindustan Lever Ltd India. Therefore, UNL has adopted centralized purchasing procedure.

4.1.4 Purchase Order

In the case of centralized purchasing, UNL purchasing department prepare order and sends to the HLL to supply a specific quantity and quality of materials at the stipulated terms at the time and place mentioned.

4.1.5 Receiving and Inspection of Materials

When materials are arrived then they are received and checked by receiving clerk for each the order placed by the purchasing department. After proper checking, materials are delivered to the store department for checking, if the discrepancy is found regarding the quality and quantity, it is immediately send to purchasing department to adjust the discrepancy. Since the company is purchasing raw materials from HLL, there are no discrepancy regarding quality and quantity.

4.2 Store Control Device

The raw materials are received by the purchasing department then all items received by the purchasing department should be passed onto store for protection against deterioration and pilferage. To minimize the cost of holding material in store all companies generally use different types of controlling devices like Bin cards and store ledger. But the UNL uses bin card. A bin card makes a record of a receipt and issues of materials.. A bin card is kept for each item store carries. These cards are maintained by the storekeeping and storekeeper is accountable for any difference between the physical stock and balance shown in bin card. these cards are used not only for recording receipts and issues of stores but also for assist the storekeeper to control the stock.

For each items of store, minimum quantity, maximum quantity and ordering quantity are stated on the card. By seeing the bin card the storekeeper can send the material requisition for the purchase of material in time.

4.3 Issuing and Pricing

The pricing of the issues can be determined by the values as per weighted average method at the lower cost or market price.

4.4 Present Inventory Position of UNL

4.4.1 Relation between Inventory and Current Assets

Table 4.1

Relation between Inventory and Current Assets (Rs in million)

| FY | Inventory | Current assets | Ratio (%) |
|----------------|------------------|-----------------------|------------------|
| 2006/07 | 132.40 | 451.88 | 29.30 |
| 2007/08 | 293.93 | 567.58 | 51.79 |
| 2008/09 | 144.46 | 399.14 | 36.19 |
| 2009/10 | 126.11 | 589.88 | 21.38 |
| 2010/11 | 184.22 | 724.42 | 25.43 |
| 2011/12 | 229.76 | 891.41 | 25.77 |
| Average | 185.15 | 604.05 | 31.64 |

Source: Annual report of UNL

Note: % of inventory on current assets = $\frac{\text{Inventory}}{\text{Current assets}}$

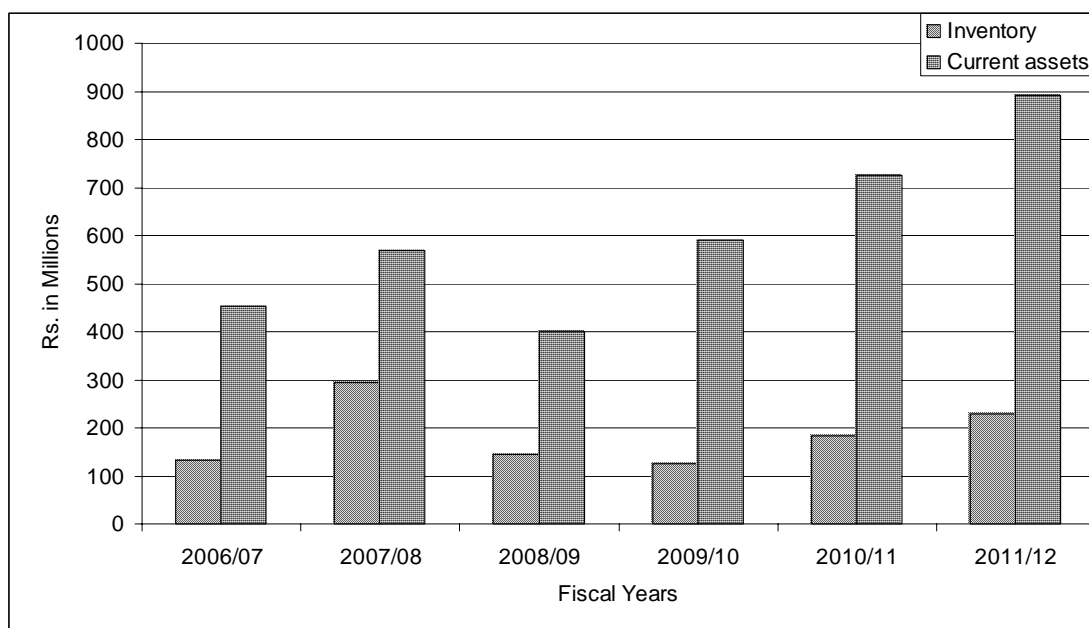
Average = $\frac{\text{Sum of the figure of overall study period}}{\text{No. of the period}}$

From the above table, it is observed that the inventory to current assets ratio during the study period is 29.30 percent in the FY 2006/07, 51.79 percent in the FY 2007/08, 36.19 percent in the FY 2008/09, 21.38 percent in the FY 2009/10, 25.43 percent in the FY 2010/11, 25.77 percent in the FY 2011/12.

Similarly, average inventory in an overall study period is Rs. 185.15 million, average current assets in an overall study period Rs. 604.05 million and average percentage of inventory in an overall study period has been 31.64 percent. The result shows that the inventory and current assets ratio is fluctuating over the study period.

The graphic presentation of level of inventory and current assets is as follows:

Figure 4.1
Level of Inventory and Current Assets



Source: Table No. 4.1

From above presentation (table as well as graphic presentation), it is observed that the share of inventory on total current assets is highest in the FY 2007/08 i.e. 51 percent and lowest in FY 2009/10 i.e. 21.34 percent. The result shows that the company has not been adopting an appropriate inventory policy because inventory level is not stable.

4.4.2 Proportion of Raw Materials on Total Inventory

Table 4.2
Proportion of Raw Materials on Total Inventory (*Rs in Million*)

| FY | Raw Materials | Inventory | Ratio (%) |
|----------------|---------------|---------------|--------------|
| 2006/07 | 60.70 | 132.40 | 45.85 |
| 2007/08 | 134.70 | 293.93 | 45.83 |
| 2008/09 | 64.06 | 144.46 | 44.34 |
| 2009/10 | 59.2 | 126.11 | 46.94 |
| 2010/11 | 95.28 | 184.22 | 51.72 |
| 2011/12 | 124.53 | 229.76 | 54.20 |
| Average | 89.75 | 185.15 | 48.15 |

Source: Annual Report of UNL

Note: Percentage of raw materials to inventory = $\frac{\text{Raw Materials}}{\text{Inventory}}$

Average.: $\frac{\text{Sum of the figure of overall study period}}{\text{No. of the period}}$

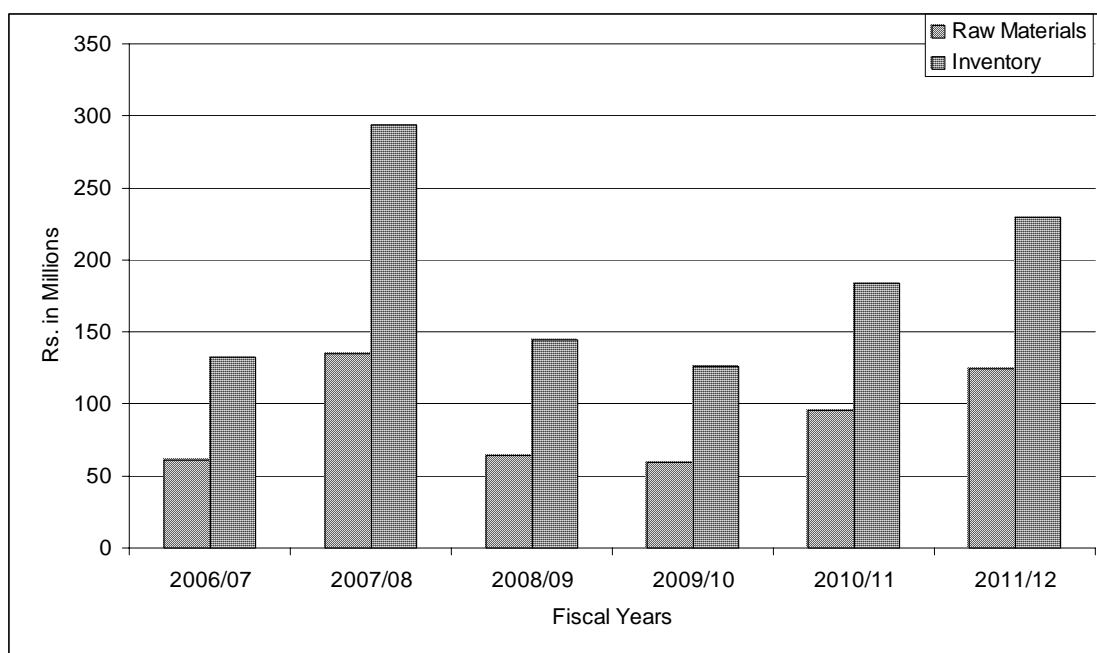
UNL has been using different type of chemicals and perfumes: that constitute the major portion of raw material on total inventory in UNL.

From the above table, it is observed that, the raw material on total inventory during the study period is 45.85 percent in the FY 2006/07, 45.83 percent FY 2007/08, 44.34 percent in the FY 2008/09, 46.94 percent in the FY 2009/10, 51.72 percent in the FY 2010/11, 54.20 percent in the FY 2011/12.

Similarly, average inventory in overall study period is Rs. 185.15 million. Average inventory of raw materials is overall study period is 89.75 million and average percentage of raw materials in total inventory in overall study period is 48.15 percent.

The graphic preparation of level of raw material on total inventory is as follows:

Figure 4.2
Proportion of Raw Materials to Total Inventory



Source: Table No. 4.2

From the above analysis, it is observed that raw material consumption in the company is erratic. The fluctuation in stock of raw material during the study period is very high. Defective purchasing policy and poor planning of raw material may be responsible factor for such fluctuation.

4.4.3 Proportion of Packaging Material on Total Inventory

Table 4.3

Proportion of Packaging Material on Total Inventory (Rs in million)

| FY | Packaging Material | Inventory | Ratio (%) |
|----------------|---------------------------|------------------|------------------|
| 2006/07 | 26.8 | 132.40 | 20.24 |
| 2007/08 | 42.2 | 293.93 | 14.36 |
| 2008/09 | 21.3 | 144.46 | 14.74 |
| 2009/10 | 11.5 | 126.11 | 9.12 |
| 2010/11 | 21.76 | 184.22 | 11.81 |
| 2011/12 | 23.4 | 229.76 | 10.18 |
| Average | 24.49 | 185.15 | 13.41 |

Source: Annual Report of UNL

Note: Percentage of packaging material to inventory = $\frac{\text{Packaging Material}}{\text{Inventory}}$

Average = $\frac{\text{Sum of the figure of overall study period}}{\text{No. of the period}}$

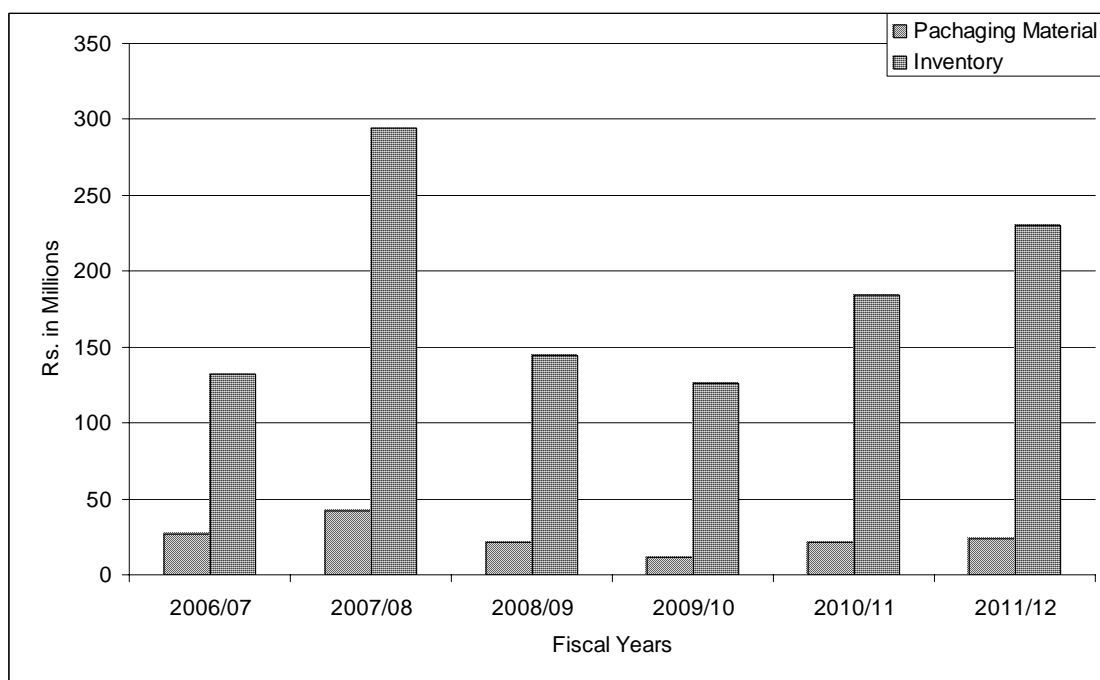
Form the above table, it is observed that share of packaging material on total inventory during the study period is 20.24 percent, in the FY 2006/07, 14.36 percent in the FY 2007/08, 14.74 percent in the FY 2008/09, 9.12 percent in the FY 2009/10, 11.81 percent in the FY 2010/11 and 10.18 percent in the FY 2011/12.

Whereas the average percentage of packaging material in total inventory in overall study period is 13.41 percent. Similarly, average inventory in overall study period is 185.15 million, average inventory of packaging materials in overall study period is Rs. 24.49 million.

The graphic presentation of level of packaging materials. The total inventory is as follows:

Figure 4.3

Level of Packaging Material on Total Inventory



Source: Table No. 4.3

From the above analysis, it is observed that the share of packaging material in the company is erratic. This result show that there is no fixed policy of purchasing of packaging material. It is because that the company might have forecasted higher level of sales volume by looking at the gradually increasing trend of sales volume in previous year.

4.4.4 Proportion of Work In Progress Materials to Total Inventory

Table No. 4.4

Proportion of WIP Materials to Total Inventory (Rs. in Million)

| FY | WIP Materials | Inventory | Ratio (%) |
|----------------|---------------|---------------|-------------|
| 2006/07 | 8.2 | 132.40 | 6.19 |
| 2007/08 | 12.4 | 293.93 | 4.22 |
| 2008/09 | 6.3 | 144.46 | 4.36 |
| 2009/10 | 4.02 | 126.11 | 3.19 |
| 2010/11 | 5.52 | 184.22 | 3.00 |
| 2011/12 | 3.50 | 229.76 | 1.52 |
| Average | 6.66 | 185.15 | 3.75 |

Source: Annual Report of UNL

Note: Percentage of work in progress to inventory = $\frac{\text{Work in Progress Inventory}}{\text{Total Inventory}}$

Average = $\frac{\text{Sum of the figure of overall study period}}{\text{No. of the period}}$

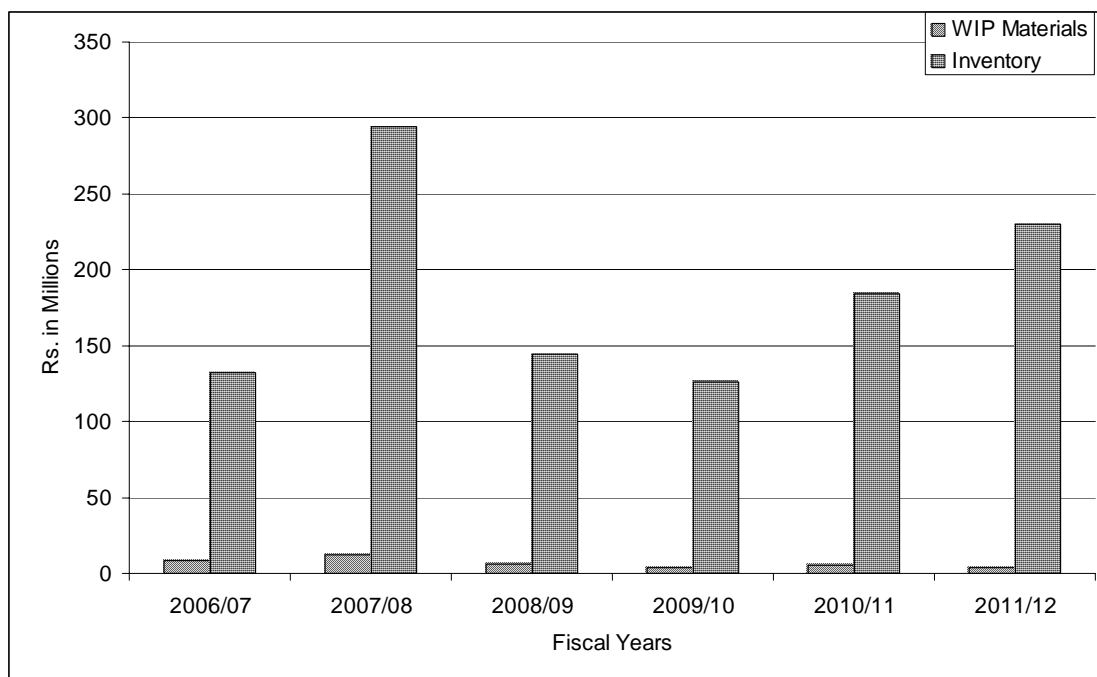
UNL has been using soap noodles to produce the final product. The smaller portion of WIP on total inventory is used by the company.

From the above table, it is observed that the portion of WIP material total inventory during the study period 6.19 percent in the FY 2006/07, 4.22 percent in the FY 2007/08, 4.36 percent in the FY 2008/09, 3.19 percent in the FY 2009/10, 3 percent in the FY 2010/11, 1.52 percent in the FY 2011/12.

Whereas the average percentage of WIP materials in total inventory in overall study period is 3.75 percent. Similarly, average inventory in overall study period is Rs. 185.15 million, average inventory of WIP materials in overall study period is Rs. 6.66 million.

The graphic presentation of level of WIP material on total inventory is as follows:

Figure 4.4
Level of Work in Progress Materials to Total Inventory



Source: Table No. 4.4

From above analysis, it is observed that WIP materials of the company is fluctuating during the study period. Such fluctuating in inventory position is not considered as good from the point of view of inventory management. Fluctuation in demand and sales of company products, lack of appropriate inventory policy and ineffective demand forecast are the main reasons of such fluctuation.

4.4.5 Proportion of Finished Goods on Total Inventory

Table 4.5
Proportion of Finished Goods on Total Inventory (Rs. in million)

| FY | Finished Goods | Inventory | Ratio (%) |
|----------------|-----------------------|------------------|------------------|
| 2006/07 | 20.7 | 132.40 | 15.6 |
| 2007/08 | 87.6 | 293.93 | 29.8 |
| 2008/09 | 41.3 | 144.46 | 28.6 |
| 2009/10 | 44.5 | 126.11 | 35.3 |
| 2010/11 | 55.50 | 184.22 | 30.13 |
| 2011/12 | 73.83 | 229.76 | 32.13 |
| Average | 53.91 | 185.15 | 28.6 |

Source: Annual Report of UNL

Note: Percentage of finished goods to inventory = $\frac{\text{Finished Goods Inventory}}{\text{Total Inventory}}$

Average = $\frac{\text{Sum of the figure of overall study period}}{\text{No. of the period}}$

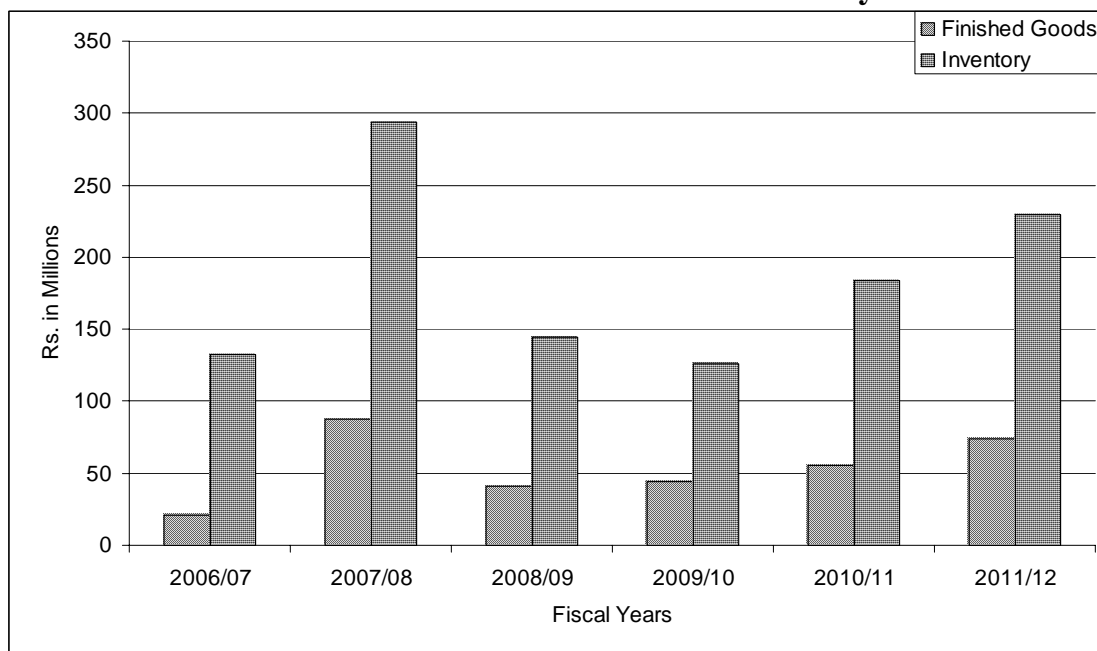
UNL has been producing different kinds of products and product groups namely, detergents, toilet soaps, oral care, sources, skin creams, laundry soaps, hair care etc.

From above table, it is observed that the portion of finished goods on total inventory during the study period is 15.6 percent in the FY 2006/07, 29.8 percent in the FY 2007/08, 28.6 percent in the FY 2008/09, 35.3 percent in the FY 2009/10, 30.13 percent in the FY 2010/11, 32.13 percent in the FY 2011/12.

Whereas the average percentage of finished goods inventory in total inventory in overall study period is 28.6 percent. Similarly, average inventory is overall

study period is Rs. 185.15 million, average inventory of finished goods in overall study period is Rs. 53.91 million.

Figure 4.5
Level of Finished Goods to Total Inventory



Source: Table No. 4.5

From above analysis, it is observed that the production rate was high i.e. greater than average production in FY 2007/08, FY 2010/11, FY 2011/12. In this FY Raw Material and Packaging Material was also high. Fluctuation of demand and sales of the company are main reasons.

4.4.6 Proportion of Store and Spare Parts on Total Inventory

Table 4.6
Proportion of Store and Spare Parts on Total Inventory (Rs. in million)

| FY | Store and Spare Parts | Total inventory | Ratio (%) |
|----------------|-----------------------|-----------------|-------------|
| 2006/07 | 16.07 | 132.40 | 12.14 |
| 2007/08 | 16.98 | 293.93 | 5.78 |
| 2008/09 | 11.50 | 144.46 | 7.96 |
| 2009/10 | 6.9 | 126.11 | 5.47 |
| 2010/11 | 6.15 | 184.22 | 3.34 |
| 2011/12 | 4.52 | 229.76 | 1.97 |
| Average | 10.35 | 185.15 | 6.11 |

Source: Annual Report of UNL

Note: Percentage of store and spare parts to inventory = $\frac{\text{Store and spare parts}}{\text{Total inventory}}$

Average = $\frac{\text{Sum of the figure of overall study period}}{\text{No. of the period}}$

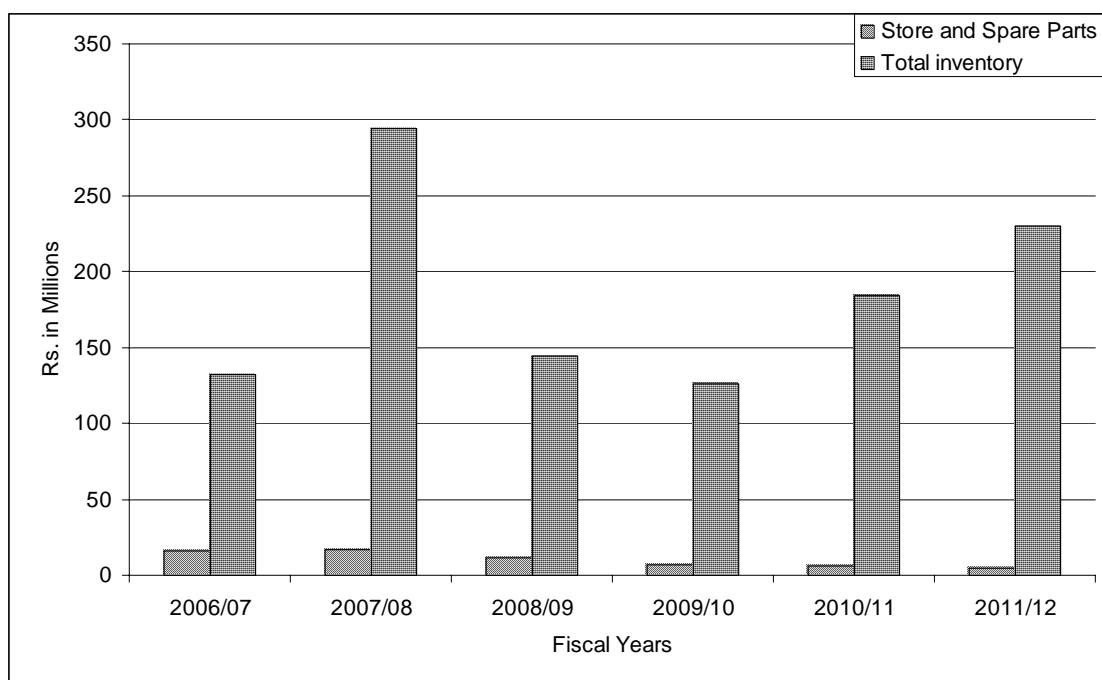
Store and spare parts are not directly entered into production and it facilitates the smooth production process. Store and spare parts comparatively less and don't required significant investment.

From above table, it is observed that the portion of store and spare parts on total inventory during the study period is 12.14 percent in the FY 2006/07, 5.78 percent in FY 2007/08, 7.96 percent in the FY 2008/09, 5.47 percent in the FY 2009/10, 3.34 percent, in the FY 2010/11, 1.97 percent in the FY 2011/12.

Whereas the average percentage of store and spare parts in total inventory in the overall study period is 6.11 percent. Similarly, average inventory in overall study period is Rs. 185.15 million. Average inventory of store and spare parts in overall study period is Rs. 10.35 million.

The graphical, presentation of level of stores and spare parts on total inventory is as follows:

Figure 4.6
Level of Store and Spare Parts on Total Inventory



Source: Table No. 4.6

4.4.7 Relation between Inventory and Net Profit

Table 4.7

Relation between Inventory and Net Profit (Rs in million)

| FY | Inventory | % deviation on an Av. inventory | Net profit | % deviation on an Av. net profit |
|----------------|---------------|---------------------------------|---------------|----------------------------------|
| 2006/07 | 132.4 | (24.45) | 120.56 | 17.14 |
| 2007/08 | 293.93 | 57.72 | 68.04 | (33.89) |
| 2008/09 | 144.46 | (17.57) | 42.6 | (58.36) |
| 2009/10 | 126.11 | (28.04) | 43.2 | (58.02) |
| 2010/11 | 184.22 | 5.12 | 140.78 | 36.78 |
| 2011/12 | 229.76 | 31.10 | 189.20 | 83.83 |
| Average | 185.15 | | 100.73 | |

Source: Annual report of UNL

$$\% \text{ deviation of Av. Net Profit} = \frac{\text{Net profit in given fiscal year} - \text{average net profit in overall study period}}{\text{Av. net profit in overall study period}}$$

$$\% \text{ deviation of Av. Inventory} = \frac{\text{Inventory in given fiscal year} - \text{Average Inventory in overall study period}}{\text{Average inventory in overall study period}}$$

In the above table, shows that the relation between inventory and net profit form the FY 2006/07 to 2011/12. From above table it is observed that the average inventory during the study period is Rs. 185.15 million and average net profit during the study period is 100.73. The above table shows the percentage deviation of inventory and net profit over the study period. The highest positive deviation form the average inventory is 57.72 percent in the FY 2007/08 and the highest positive deviation form an average net profit is 83.33 percent in the FY 2011/12. Similarly, the highest negative deviation from an average inventory is (28.05%) in FY 2009/10 and the highest negative deviation from the average net profit is (58.36%) in the FY 2008/09.

From the above analysis it is observed that inventory and net profit were fluctuating during the study period. There is no specific policy of investment on inventory and inventory management system.

The correlation between inventory and net profit has been observed to be 0.259, which is shown in 'Annex A'. Therefore there is positive and high degree of correlation between inventory and net profit.

Types of Significance of Correlation Coefficient

To test the significant of correlation of coefficient we can use T statistic. Here sample size is less than 30 so we can use T statistic.

Here, $r = 0.259$

Null Hypothesis $H_0 = 0$ i.e. r is not significant

Alternative Hypothesis $H_1 \neq 0$ i.e. r is significant

Now, test statistic :

$$\begin{aligned} T &= r \sqrt{\frac{n-2}{1-r^2}} \\ &= 0.259 \sqrt{\frac{6-2}{1-(0.259)^2}} \\ &= 0.536 \end{aligned}$$

Now, the tabulated value of t for $(N-2)$ i.e. $6-2 = 4$ degree of freedom for two tail test at 5% level of significance is 2.45.

Decision:

Since, calculated value of t is $<$ tabulated value of t at 4 degree of freedom at 5 percent level of significance we reject the H_1 , which indicate that correlation coefficient between variables are not significant or ' r ' is not significant.

4.5 Ratio Analysis of UNL

Ratio analysis is the process of determining and interpreting numerical relationship between any two figures of financial statements. Inventory ratio analysis of any organization may help to know the efficiency of management of

finished goods. Inventory turnover ratio is also known as stock turnover ratio or sales stock ratio.

A company should earn profit to survive and grow over a long period of time. Profits are essential, but it would be wrong to assume that every action initiated by management of a company should be aimed at maximizing profits, in respective of social consequence. Profit is the difference between revenue an act expenses over a period of times. Profit is the ultimate output of a company, and it will have no future if it fails to make sufficient profits. Therefore, the profitability ratios are calculated to measure the operating efficiency of the company.

4.5.1 Relation between Sales and Inventory

Table 4.8

Inventory Turnover Ratio (Rs. in million)

| FY | Sales | Inventory | Ratio (Times) | % deviation on Av. inventory turnover |
|----------------|----------------|------------------|----------------------|--|
| 2006/07 | 1728.63 | 132.4 | 13.06 | 48.75 |
| 2007/08 | 1540.99 | 293.93 | 5.24 | (40.32) |
| 2008/09 | 1236.05 | 144.46 | 8.56 | (2.51) |
| 2009/10 | 1244.57 | 126.11 | 9.87 | 12.41 |
| 2010/11 | 1524.90 | 184.22 | 8.28 | (5.7) |
| 2011/12 | 1481.56 | 229.76 | 6.45 | (26.54) |
| Average | 1459.45 | 185.15 | 8.58 | |

Source: Annual report of UNL.

Note: Inventory turnover ratio = $\frac{\text{Sales}}{\text{Inventory}}$

The figure in brackets are negative.

% deviation of Av. Inventory turnover

$$= \frac{\text{Inventory Turnover in given fiscal year} - \text{average inventory turnover in overall study period}}{\text{Av. inventory turnover in overall study period}}$$

From the above table, it is observed that in the FY 2006/07 inventory turnover ratio is highest i.e. 13.06 times. So, in this year low level inventory is kept in the company due to fast consumption and sales of raw materials and finished goods. In the FY 2007/08, the inventory turnover ratio is the lowest i.e. 5.24 times. Similarly, in these years, the highest negative deviation from the average of inventory turnover ratio is (40.32%) in the FY 2007/08. Which indicates the slow consumption of raw material or low utilization of raw materials. WIP materials and low sales of finished goods.

The correlation between sales and inventory has been observed to be positive i.e. 0.406 which is shown in Annex 'B'. Therefore, there was significant relationship between sales and inventory. Therefore, it is observed that changes in inventory emulate from change in sales.

Test of significance of correlation coefficient

To test the significant of correlation of coefficient we can use T statistic. Here, sample size is less than 30 so we can use T statistic.

Here, $r = 0.406$

Null Hypothesis $H_0 = 0$ i.e. r is not significant

Alternative Hypothesis $H_1 = 0$ i.e. r is significant

Now, test statistic :

$$T = r \sqrt{\frac{n-2}{1-r^2}}$$

$$= 0.406 \sqrt{\frac{6-2}{1-(0.406)^2}}$$

$$= 1.088$$

Now, the tabulated value of t for $(n-2)$ i.e. $6-2 = 4$ degree of freedom for two tail test at 5 percent level of significance is 2.45.

Decision:

Since, calculated value of t is $<$ then tabulated value of t at 4 degree of freedom at 5 percent level of significance, we reject the H_1 , which indicate that correlation coefficient between variables are not significant or ' r ' is not significant.

4.5.2 Relation between Raw Materials and Raw Material Consumed

Table 4.9

Raw Material Turnover Ratio (Rs. in million)

| FY | Cost of RM consumed | Cost of Av. raw material | Raw material turnover ratio times | % deviation of Av. RM turnover ratio |
|----------------|----------------------------|---------------------------------|--|---|
| 2006/07 | 994.60 | 74.9 | 13.28 | 30.97 |
| 2007/08 | 816.90 | 97.7 | 8.36 | (17.55) |
| 2008/09 | 545.5 | 99.4 | 5.49 | (45.86) |
| 2009/10 | 542.36 | 61.63 | 8.80 | (13.21) |
| 2010/11 | 660.01 | 77.24 | 8.54 | (15.78) |
| 2011/12 | 623.62 | 109.90 | 5.67 | (44.08) |
| Average | 697.17 | 86.80 | 8.36 | |

Source: Annual report of UNL.

Note: Cost of average raw material

$$= \frac{\text{Opening stock of Raw Materials} - \text{Closing stock of Raw Materials}}{2}$$

$$\text{Raw material turnover ratio} = \frac{\text{Cost of Raw Materials consumed}}{\text{Cost of Raw Materials}}$$

$$\% \text{ deviation of Avg. RM turnover ratio} = \frac{\text{Raw material turnover ratio} - \text{average raw material turnover ratio}}{\text{Average raw material turnover ratio}}$$

The figure in brackets are negative

Material turnover ratio is essential to compare the turnover of the different kinds of materials to find out slow moving items to assist the management to avoid capital locked up in such items.

From the above table, it is observed that the average raw material turnover ratio is 86.80 times. In the FY 2006/07, the raw material turnover ratio is highest, i.e. 13.28 times and in this year the highest positive deviation from an average of RM turnover ratio is 30.97 percent.

So, in these years low level of raw materials is kept in the company and fast moving the raw materials. In the FY 2008/09 and 2011/12. The raw material turnover ratio are lowest, i.e. 5.49 and 5.67 times. Similarly, in these year, the highest negative deviation form the average of RM turnover ratio are (45.86%)

and (44.098%) respectively. This indicates the slow consumption and low utilization of raw materials.

The correlation between cost of RM consumed and cost of average RM has been observed to be -0.1211 i.e. negative correlation which shown in 'Annex C'. There is negative relationship between two variables.

4.5.3 Packaging Material Turnover Ratio

Table 4.10

Packaging Material Turnover Ratio (Rs. in Million)

| FY | Cost of packaging material consumption | Cost of Av. packaging materials | PM turnover ratio (times) | % deviation Avg. pm turnover ratio |
|----------------|---|--|----------------------------------|---|
| 2006/07 | 230.7 | 24.14 | 9.56 | (4.25) |
| 2007/08 | 227.5 | 34.5 | 6.59 | (33.23) |
| 2008/09 | 156.5 | 31.8 | 4.92 | (50.15) |
| 2009/10 | 124.1 | 16.4 | 7.57 | (23.30) |
| 2010/11 | 135.12 | 16.63 | 8.13 | (17.63) |
| 2011/12 | 137.67 | 22.58 | 6.10 | (38.20) |
| Average | 168.60 | 24.34 | 7.14 | |

Source: Annual report of UNL

Note: The figures in brackets are negative.

$$\text{Cost of average PM} = \frac{\text{Opening stock of P.M.} + \text{Closing stock of PM}}{2}$$

$$\text{Raw material turnover ratio} = \frac{\text{Cost of packaging material consumption (Rs.)}}{\text{Cost of PM (Rs.)}}$$

$$\% \text{ deviation of Av. PM} = \frac{\text{PM in given fiscal year} - \text{average PM in overall study period}}{\text{Av. PM in overall study period}}$$

From the above table, it is observed that the average packaging material turnover ratio is in the fiscal year 2008/09, the packaging material turnover ratio is lower i.e. 4.92 times. Similarly, in this year the highest negative deviation from the average of packaging material turnover ratio is (50.15%), which indicates the slow moving of packaging or low utilization of packaging material.

The correlation between cost of packaging material consumed and cost of average packaging material has been observed to be 0.2256 i.e. positive, which is shown on Annex 'D'. There was significant and positive relationship between cost of packaging material consumed and cost of average packaging material.

Test of significance of correlation coefficient

To test the significant of correlation of coefficient we can use T statistic because sample size is less than 30.

Here, $r = 0.2256$

Null hypothesis $H_0 = 0$, i.e. 'r' is not significant.

Alternative hypothesis $H_1 \neq 0$ i.e. 'r' is significant.

Now, test statistic :

$$T = r \sqrt{\frac{n-2}{1-r^2}} = 0.2256 \sqrt{\frac{6-2}{1-(0.2256)^2}} = 0.2256 \times 2.5413 = 0.5733$$

Now, tabulated value of /t/ for (n-2) i.e. $6 - 2 = 4$ degree of freedom for two tail test at 5% level of significance is 2.45.

Decision:

Since, calculated value of /t/ is < tabulated value of /t/ at 4 degree of freedom at 5% level of significant, so we reject H_1 , which indicate that correlation coefficient between two variables are not significant or 'r' is not significant.

4.5.4 Relation between Sales and Gross Profit

Table 4.11
Gross Profit Ratio (Rs. in million)

| FY | Sales | Gross profit | Gross Profit Ratio |
|----------------|----------------|---------------------|---------------------------|
| 2006/07 | 1728.63 | 283.56 | 16.40 |
| 2007/08 | 1540.99 | 320.16 | 20.78 |
| 2008/09 | 1236.05 | 298.32 | 24.13 |
| 2009/10 | 1244.57 | 401.59 | 32.53 |
| 2010/11 | 1524.90 | 555.79 | 36.45 |
| 2011/12 | 1481.56 | 543.74 | 36.70 |
| Average | 1459.45 | 400.53 | 27.79 |

Source: Annual report of UNL

Note: $\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Sales}}$

The above table shows the relation between sales and gross profit to study the profitability of the company from FY 2006/07 to FY 2011/12. In FY 2006/07 gross profit ratio is minimum, after this FY gross profit ratio is in increasing trend. Which indicates company's profitability is growing i.e. profitability is round.

From above table, it is observed that average gross profit ratio is 27.79 percent. It is not good for company. It should be increase. In FY 2009/10, 2010/11, and 2011/12 gross profit ratio is greater than average gross profit. Which indicates, higher ratio is a sign of efficient management, which reflect maximize profit.

The correlation between sales and gross profit has been observed to be 0.061 which is shown in 'Annex F' positive correlation between sales and gross profit.

Test of Significance of Correlation Coefficient

To test the significant of correlation of coefficient we can use T statistic. Here, sample size is less than 30. we can use 't' statistic.

$$T \text{ statistics} = r \sqrt{\frac{n-2}{1-r^2}}$$

Null hypothesis $H_0 = 0$ i.e. r is not significant

Alternative hypothesis $H_1 \neq 0$ i.e. r is significant.

Now, test statistics:

$$T = r \sqrt{\frac{n-2}{1-r^2}}$$

$$= 0.061 \sqrt{\frac{6-2}{1-(0.01)^2}} = 0.1497 \quad T = 1597$$

Now, tabulated value of t for (n-2) i.e. 6-2 degree of freedom for two tail test at 5% level of significance is 2.45.

Decision: Since, calculated value of /t/ and tabulated value of /t/ at 4 degree of freedom at 5% level of significance. So we reject H_1 . Which indicate the correlation between two variables are not significant.

4.5.5 Relation between Sales and Operating Expenses

Table 4.12

Operating Profit Ratio (Rs. in Million)

| FY | Sales | Operating expenses | Operating Profit Ratio |
|----------------|----------------|---------------------------|-------------------------------|
| 2006/07 | 1728.63 | 1571.37 | 90.90 |
| 2007/08 | 1540.99 | 1425.4 | 92.50 |
| 2008/09 | 1236.05 | 1162.3 | 94.03 |
| 2009/10 | 1244.57 | 1111.02 | 89.27 |
| 2010/11 | 1524.90 | 1334.58 | 87.52 |
| 2011/12 | 1481.56 | 1233.3 | 83.24 |
| Average | 1459.45 | 1306.33 | 89.58 |

Source: Annual report of UNL

$$\text{Operating ratio} = \frac{\text{Operating expenses}}{\text{Sales}} \text{ (in percentage)}$$

The above table shows the relation between sales and operating expenses to study the profitability i.e. operating profit of the company from FY 2006/07 to FY 2011/12. In FY 2006/07 to 2008/09 operating ratio is increasing trend then decreasing trend remaining fiscal year.

From above table, it is observed that the average operating ratio is 89.58. It is not good for company.

The correlation between sales and operating expenses has been observed to be 0.69 which is shown in 'Annex G'. Positive correlation between sales and operating expenses.

Test of Significance of Correlation Coefficient

To test the significance of correlation coefficient we can t-statistics because sample size is less than 30.

$$T \text{ statistics} = r \sqrt{\frac{n-2}{1-r^2}}$$

Null hypothesis $H_0 = 0$ i.e. 'r' is not significant

Alternative hypothesis $H_1 \neq 0$ i.e. 'r' is significant.

Now, test statistics:

$$T = r \sqrt{\frac{n-2}{1-r^2}}$$

$$= 0.69 \sqrt{\frac{6-2}{1-(0.69)^2}} = 2.33$$

$$T = 2.33$$

Now, tabulated value of it for (n-2) degree of freedom for two tail test at 5% level of significance is 2.45.

Decision: Since, calculated value of /t/ tabulated value of /t/ at 4 degree of freedom at 5% level of significance. So, we reject, H_1 , which indicates the correlation between two variables are not significant.

4.6 Inventory Management and Control Technique

4.6.1 Economic Order Quantity Calculation

Economic Order Quantity of RM on FY 2006/07

Annual requirement (A) = 24823 tones

Carrying cost per tones (C) = Rs. 1427 per tones

Ordering cost per order (O) = Rs. 198922

By applying EOQ formula:

$$EOQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 24823 \times 198922}{1427}}$$

$$= 2630.70 \text{ tones} \quad = 2631 \text{ tones}$$

i. EOQ = 2631 tones

$$\text{ii. No. of order} = \frac{A}{EOQ} = \frac{24823}{2631}$$

$$= 9.43$$

$$= 9 \text{ times}$$

From the above calculation, the EOQ is 2631 tones under the formula method, which minimizes the total ordering cost and carrying cost with no. of orders is 9 times which is also clear the following tabular method.

Table 4.13

Trial and Error Approach of EOQ of 2006/07

| No. of order | Order size tones | Average inventory (tones) | Total carrying cost (Rs.) | Total ordering cost (Rs.) | Total cost (Rs.) |
|--------------|------------------|---------------------------|---------------------------|---------------------------|------------------|
| 1 | 24823 | 12412 | 17711924 | 198922 | 17910846 |
| 3 | 8274 | 4137 | 5903499 | 596766 | 6500265 |
| 7 | 3546 | 1773 | 2530071 | 1392454 | 3922525 |
| 9 | 2758 | 1379 | 1967833 | 1790298 | 3758131 |
| 10 | 2482 | 1241 | 177097 | 1989220 | 3760127 |
| 12 | 2069 | 1034 | 1475518 | 2387064 | 5338100 |

Source: Annual report of UNL.

This table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing no. of order. The above table shows the minimum total cost of RM is Rs. 3758131. Where the total carrying cost is Rs. 1967833 and total ordering cost is Rs. 1790298 with the number of order is 9 times per year. So, it is clear that, if the company wants to minimize total cost of inventory of RM it should order only 9 times during the year.

So, it become clear form formula as well as tabular method, the company should order 2631 tones with 9 times during the year.

Economic Order Quantity of Raw Material on 2007/08

Annual requirement (A) = 20921 tones

Ordering cost per order (O) = Rs. 163378

Carrying cost per tones (C) = Rs. 1423

By applying EOQ formula:

$$EOQ = \sqrt{\frac{2AO}{c}} = \sqrt{\frac{2 \times 20921 \times 163378}{1423}} = 2192$$

i. EOQ = 2192 tones

$$\text{ii. No. of order} = \frac{\text{Annual requirement}}{\text{EOQ}} = \frac{20921}{2192}$$

$$= 9.54 \text{ times}$$

$$= 10 \text{ times approximately.}$$

From the above calculation, EOQ is 2192 tones under the formula method, which minimizes the total ordering and carrying cost with no. of orders is 10 times which is also clear the following tabular method.

Table 4.14
Trial and Error Approach of EOQ (Tabular Method) of 2007/08

| No. of order | Order size (tones) | Average inventory (tones) | Total carrying cost | Total order cost | Total cost |
|--------------|--------------------|---------------------------|---------------------|------------------|------------|
| 1 | 20921 | 10460 | 14884580 | 163378 | 15047958 |
| 3 | 6974 | 3487 | 4962001 | 490134 | 5452135 |
| 7 | 2989 | 1495 | 2127385 | 1143646 | 3270931 |
| 9 | 2325 | 1162 | 1653526 | 1470402 | 3123928 |
| 10 | 2092 | 1046 | 1488458 | 1633780 | 3122238 |
| 11 | 1902 | 951 | 1353273 | 1797158 | 3150431 |

Source: Annual report of UNL.

The above table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing number of order. The above table shows the minimum total cost of RM is Rs. 31222389. Where the total carrying cost is Rs. 1488458 and total ordering cost is Rs. 1633780 with the number of order 10 times per year. So, it is clear that, if the company wants to minimize total cost of inventory of RM, it should order 10 times during the year.

So, it becomes clear from formula as well as tabular method, the company should order 2191 tones with 10 times during the year.

Economic Order Quantity of Raw Material on FY 2008/09

Annual requirement (A) = 17665 tones

Carrying cost tones (C) = 1373

Order const per order (O) = 109094

By applying EOQ formula:

$$EOQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 17665 \times 109094}{1373}} = 1675.47 \text{ tones}$$

i. EOQ = 1675 tones

$$\text{ii. No. of order} = \frac{A}{EOQ} = \frac{17665}{1675} = 10.546 = 11 \text{ times}$$

From the above calculation, the EOQ is 1675 tones under the formula method, which minimizes the total ordering cost and carrying cost with no. of order 11 times, which is also clear from the following tabular method:

Table 4.15

Trial and Error Approach of EOQ (Tabular Method) of 2008/09

| No. of order | Order size tones | Average inventory (tones) | Total carrying cost (Rs.) | Total order cost (Rs.) | Total cost (Rs.) |
|--------------|------------------|---------------------------|---------------------------|------------------------|------------------|
| 1 | 17665 | 8832 | 12126336 | 109094 | 12235430 |
| 3 | 5888 | 2944 | 4042112 | 327282 | 4369394 |
| 7 | 2524 | 1262 | 1732726 | 763658 | 2496384 |
| 10 | 1767 | 883 | 1212359 | 1090940 | 2303299 |
| 11 | 1606 | 803 | 1102519 | 1200034 | 2302553 |
| 13 | 1359 | 680 | 933640 | 1418222 | 2351862 |

Source: Annual report of UNL.

The above table shows the carrying cost is decreasing and ordering cost is increasing with the number of order. The above table shows the minimum total cost of RM is Rs. 2302553, where the total carrying cost is Rs. 1102519 and total ordering cost is Rs. 1200034 with the number of order 11 times per year. So, it is clear that, if the company want to minimize total cost of inventory of RM it should order 11 times during the year.

So, it become clear from formula as well as tabular method, that the company should 1675 tones with 11 times during the year.

Economic Order Quantity of Raw Material on FY 2009/10

Annual requirement (A) = 17362 tones

Ordering cost per order (O) = Rs. 108472

Carrying cost per tones (C) = 1123

By applying EOQ formula get:

$$EOQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 17362 \times 108472}{1123}} = 1831 \text{ tones}$$

i. EOQ = 1831 tones

$$\text{ii .No. of order} = \frac{\text{Annual requirement}}{EOQ} = \frac{17362}{1831} = 9.48 \text{ times} = 9 \text{ times}$$

From above calculation, the EOQ is 8131 tones under the formula method which minimizes the total order and carrying cost with no. of orders 9 times, which is also clear the following tabular method.

Table 4.16

Trial and Error Approach of EOQ (Tabular Method) of 2009/10

| No. of order | Order size tones | Average inventory (tones) | Total carrying cost (Rs.) | Total order cost (Rs.) | Total cost (Rs.) |
|--------------|------------------|---------------------------|---------------------------|------------------------|------------------|
| 1 | 17362 | 8681 | 9748763 | 108472 | 9857235 |
| 3 | 5787 | 2893 | 3248839 | 325416 | 3574255 |
| 5 | 3472 | 1736 | 1949528 | 542360 | 2491888 |
| 8 | 2170 | 1085 | 1218455 | 867776 | 2086231 |
| 9 | 1929 | 964 | 1082572 | 976248 | 2058820 |
| 10 | 1736 | 864 | 974764 | 1084720 | 2059484 |
| 11 | 1578 | 789 | 886047 | 1193192 | 2079239 |

Source: Annual report of UNL.

The above table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing number of order. The above table shows the minimum total cost of RM is Rs. 2058820, where the total carrying cost is Rs. 1082572 and total ordering cost is 976248 with the number of order 9 times per year. So, it is clear that, if the company want to minimize total cost of inventory of RM it should order 9 times during the year.

So, it becomes clear from formula as well as tabular method that the company should order 1831 tons with 9 times during the year.

Economic Order Quantity of Raw Material on FY 2010/11

Annual requirement (A) = 21090 tons

Ordering cost per order (O) = Rs. 108492

Carrying cost per ton (C) = 1127

By applying EOQ formula:

$$EOQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 21090 \times 108492}{1127}} = 2015 \text{ tons}$$

i. EOQ = 2015 tons

$$\text{ii. No. of order} = \frac{\text{Annual requirement}}{EOQ} = \frac{21090}{2015} = 10.46 \text{ times} = 10 \text{ times}$$

Table 4.17

Trial and Error Approach of EOQ (Tabular Method) of 2010/11

| No. of order | Order size tons | Average inventory (tons) | Total carrying cost (Rs.) | Total order cost (Rs.) | Total cost (Rs.) |
|--------------|-----------------|--------------------------|---------------------------|------------------------|------------------|
| 1 | 21090 | 10545 | 11884215 | 108492 | 11992707 |
| 4 | 5273 | 2636 | 2970772 | 433968 | 3404740 |
| 7 | 3013 | 1506 | 1697262 | 759444 | 2456706 |
| 9 | 2343 | 1171 | 1319717 | 976428 | 2296145 |
| 10 | 2109 | 1054 | 1187858 | 1084920 | 2272778 |
| 11 | 1917 | 958 | 1079666 | 1193412 | 2273078 |

Source: Annual report of UNL.

The above table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing number of order. The above table shows the minimum total cost of RM is Rs. 2272778 where the total carrying cost is Rs. 1187858 and total ordering cost is Rs. 1084920 with the no. of order nearly 10 times per year. So, it is clear that if the company wants to minimize total cost of inventory of RM it should be order 10 times during the year.

So, it becomes clear from formula as well as tabular method that the company should order 2014 tones with 10 times during the year.

Economic Order Quantity of Raw Material on FY 2011/12

Annual requirement (A) = 19484

Carrying cost per tones (C) = 1095

Ordering cost per order (O) = 109480

By applying EOQ formula:

$$EOQ = \sqrt{\frac{2AO}{C}} = 1973.85 = 1974$$

i. EOQ = 1974

ii. No. of order = $\frac{A}{EOQ} = 10$ times approx.

From above calculation, the EOQ is 1974 tones under the formula method. Which minimizes the total ordering cost and carrying cost with no. of orders 10 times. Which is also clear the following tabular method.

Table 4.18

Trial and Error Approach to EOQ (Tabular Method) of 2011/12

| No. of order | Order size (ton.) | Average inventory | Total carrying cost | Total ordering cost | Total cost |
|--------------|-------------------|-------------------|---------------------|---------------------|------------|
| 1 | 19484 | 9742 | 10667490 | 109480 | 10776970 |
| 4 | 4871 | 2435 | 2666325 | 437920 | 3104245 |
| 6 | 3247 | 1623 | 1777185 | 656880 | 2434065 |
| 9 | 2165 | 1082 | 1184790 | 985320 | 2170110 |
| 10 | 1948 | 974 | 1066530 | 1094800 | 2161330 |
| 11 | 1771 | 885 | 969075 | 1204280 | 2173355 |

Source: Annual report of UNL.

Above table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing number of order. The above table shows the minimum total cost raw material Rs. 2161330 where the total carrying cost is

Rs. 1066530 and total ordering cost is Rs. 1094800 with the number of order 10 times per year so, it is clear that if the company wants to minimize total cost of inventory of raw material it should order 10 times during the year.

So, it becomes clear that from formula as well as tabular method that the company should order 1974 tones with 10 times during the year.

Table 4.19

EOQ of Raw Materials (Chemicals and Perfumes) in Total Study Period

| FY | No. of orders (approx.) | EOQ (in tones) |
|-----------|--------------------------------|-----------------------|
| 2006/07 | 9 | 2631 |
| 2007/08 | 10 | 2192 |
| 2008/09 | 11 | 1675 |
| 2009/10 | 9 | 1831 |
| 2010/11 | 10 | 2015 |
| 2011/12 | 10 | 1974 |

Source: Annual report of UNL.

From the above table, it can be interpreted that there is no similar size of EOQ during the study period.

In the FY 2006/07, the EOQ of raw material (chemicals and perfumes) is very high i.e. 2631 tones, while in FY 2008/09 the EOQ of RM is low i.e. 1675 i.e. 1675 tones. There is high fluctuation in EOQ size during the study period due to various reasons. This type of fluctuating in ordering cost is due to fluctuating demand.

In FY 2006/07 order size EOQ of raw materials is very high i.e. 2631 tones. In these years the demand of raw material is high and ordering cost is high due to no. of order with overall study period.

4.7 Selective Inventory Control (ABC Analysis)

As the term ABC implies always better control which states that a fewer items of high investment value should be paid more attention than a bulk of items having low value and having a low investment in capital, category A includes the most important items and recognized for special attention. Category B

includes lesser important items and category 'C' consists of the least important and few value items.

The classification of items into A, B and C categories is based upon the product value and usage date. 'A' item includes 15 percent of items and 70 percent of total value of items. B items include 30 percent of the items and 20 percent of total value of items. 'C' items include 55 percent of items and 10 percent of total inventory value.

According to ABC analysis concept, the tem of inventory of Unilever Nepal Ltd. is categorized as A, B and C on the basis of product value and usage rate. The value items having more than Rs. 1 Lakhs per tones fall under category 'A'. The items having value form Rs. 50,000 to Rs. 100,000 per tones fall under category 'B' and the items having value to Rs. 50,000 per tones fall under category 'C'.

4.7.1 ABC Analysis Concept

According to ABC analysis concept, the items of inventory of UNL are categories as 'A', 'B' and 'C' group on the basis of the usage value.

Table 4.20

ABC Classification of Overall Study Period

| FY→ Categories↓ | 2006/07 | | 2007/08 | | 2008/09 | | 2009/10 | | 2010/11 | | 2011/12 | | Average | |
|---|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| | % of items | % of cost | % of items | % of cost | % of items | % of cost | % of items | % of cost | % of items | % of cost | % of items | % of cost | % of items | % of cost |
| 'A' items Personal product | 13.3 | 37.1 | 14.6 | 51 | 33.4 | 62.3 | 17.1 | 49.3 | 16.00 | 12 | 9.9 | 27.6 | 15.5 | 37 |
| 'B' items soaps | 28.1 | 41 | 15.4 | 24.7 | 29.7 | 25.6 | 31.1 | 33.7 | 34.7 | 38.6 | 32.8 | 53 | 27.9 | 33.8 |
| 'C' items Detergents soap, noodles, laundry soap | 58.6 | 21.9 | 68.2 | 24.3 | 36.9 | 12.1 | 51.8 | 17 | 49.3 | 49.4 | 37.3 | 19.4 | 59 | 29 |

Source: Annual report of UNL.

From the above table, it is observed that personal product like oral care, skin cream, hair care, food and beverage are categorized under 'A'. The above table shows that under 'A' category average percentage of total unit is 15.5% and average percentage of total cost is 37% during the study period. The per tone

cost of inventories in 'A' items is more than Rs. 1 lakh. Therefore, 'A' group involved the largest investment and would be under highest control by management. It should rather keep a more rigorous control and the most sophisticated control techniques should be applied in 'A' items than other items.

Toilet soaps is categorized under 'B' items, average percentage of total units is 27.9 and average percentage of total cost is 33.8% of over all study period. Therefore in 'B' group involve normal inventory control is exercised. The 'B' group stands mid way. It deserves less attention than 'A' but more than 'C'. It can be controlled by employing less sophisticated techniques.

Detergent, scourers, soap noodles, laundry soaps are categorized under 'C' items. The table above shows that under 'C' items average percentage of total units is 59% and average percentage of total cost is 29% of overall study period. In case of 'C' items, simple control will be sufficient.

The categories selected the concept that it is uneconomical to spend the same cost of supervision to all items. Inventories are checked physically once every six months or every year to determine new order to placed. Based on these consideration the selective inventory control system of the company is analyzed. In the above table it is clearly seen the percentage of total cost of 'B' items is comparatively high but per tone cost is less than 'A' items and more than 'C' items. In order to minimize the inventory cost 'A' items should be paid more attention than 'C'. 'B' lies in between times 'A' and 'C'. It requires neither careful nor simple but a moderate control system is adequate for this items.

4.8 Major Findings of the Study

The major findings out of the analysis of the inventory management of inventory management of UNL are as follows:

1. The average value of inventory is 185.15 million during the study period. The highest positive deviation from an average net profit 83.83 percent in the FY 2011/12. However, the level of inventory has been maintained according to the demand of products.
2. The average value of sales is Rs. 1459.45 million and average value of inventory is Rs. 185.15 million highest positive deviation form the average sales is 48.75 percent in the FY 2006/07.
3. The correlation between sales and inventory is 0.406 which is positive. Therefore, there is significant relationship between sales and inventory. According to 't' statistic indicate that correlation coefficient between two variables are not significant.
4. The average gross profit ratio is 27.79 percent. In the FY 2006/07 the gross profit ratio is lowest and FY 2010/11 and 22011/12 the gross profit ratio are highest i.e. 36.45 percent and 36.70 percent. It is indicated that these two years gross profit is higher.
5. The correlation between sales and gross profit is 0.061, which is low degree of positive correlation between sales and gross profit.
6. The average operating profit ratio is 89.58 percent during the study period. Highest operating profit ratio is 94.03 percent in FY 2008/09 and lowest operating profit ratio 83.24 percent on FY 2011/12. Average sales is 1459.45 million and average operating expenses is 1306.33 million. Highest operating expenses Rs. 1334.58 million in FY 2010/11.
7. The correlation between sales and operating expenses 0.69 which is positive correlation between sales and operating expenses.
8. EOQ is not similar during the study period. In the FY 2006/07 EOQ of RM is very high i.e. 2631 tones, while in the FY 2011/12 EOQ of RM is low i.e. 1974 tones. This type of fluctuating is due to variation of ordering cost and fluctuation in demand.

9. The significance the ABC analysis reflect the concept of appropriate management of inventory. The concept state that it is uneconomical to spent the same cost of supervision to all items. It is clearly seen that under 'A' items. An average percentage of total unit is 15.5 percent and average percentage of total cost is 37 percent. So it is clearly seen that the average percentage of total cost of B item is comparatively high but per tone cost is less than A item and most then 'C' items. In order to minimize inventory cost of 'A' item should be controlled carefully and should be period more attention then 'B' and 'C'. 'B' item lies between 'A' and 'C' item.
10. The inventory management and controlled tools followed by UNL are ABC analysis, perpetual inventory management system (physical checking), EOQ etc. The inventory management and control system followed by UNL are ABC analysis, physical checking system according to the responsible given by the responsible person of UNL. Some of the main questions are shown in 'Annex H'.
11. As the primary data, cost of ordering and carrying, the researcher found that there is no systematic and scientific system to determine ordering and carrying cost.
12. In the company, there are difference types of inventories like RM, WIP, finished goods and stores and spares parts. For the question is asked to reveal the rank of cost for solution of ABC analysis the company could give only the name of inventories but not specified the cost. The researcher found that RM WIP and store spare parts are controlled through physical checking system and finished goods are controlled through ABC analysis.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

Inventory management is most important part for manufacturing company, a firm can't achieve. Without effective and efficient inventory management no organization can achieve its goals. Success of any enterprise basically depends on the efficiency and effectiveness of systematic management. The company has invested most of the amount for inventory. Where the functions are associated with production, marketing, finance purchasing storing selling and distribution etc.

Inventory functions are associated with production, marketing finance and administration etc. Inventory constitutes most significant part of current assets. It should be managed efficiently to be avoid unnecessary investment. Unilever Nepal Ltd. is a subsidiary company of Hindustan Lever Limited of India. UNL produce different type of products and product groups. So this study deals with inventory management of Unilever Nepal Ltd.

The basic problem area of this study is to examine the inventory management system. Practiced by the company is unscientific. The carrying cost, ordering cost, order size, safety stock maintained are unsatisfactory and unrealistic. It is not paying much attention to the lead time. Therefore, all these function lead to increase total cost of the company.

The main objective of this study is to identify the inventory management system and its impact on profitability of Unilever Nepal Ltd. In this study an attempt has been made to identify the inventory position of UNL, to know the relationship between sales, inventories, current assets gross profit, operating expenses, etc. with identifying their trends. To assess the inventories and their impact on profitability of UNL and suggest over the better practice of inventory management of UNL.

The required information are secondary as well as primary. The researcher had submitted question to UNL to find out actual result and the researcher collected the secondary data form annual report of UNL.

All the collected data are analyzed on the basis of inventory management with the help of ABC analysis. EOQ model, inventory turnover ratio, RM turnover ratio, net profit ratio, gross profit ratio, operating ratio, correlation coefficient, regression analysis, average percentage of the total study period by presenting with table and figure in required places. To make certain type of inventory management decision many statistical tools and financial tools and techniques are available for controlling the inventory but the company has not applied some sort of techniques for managing the inventory.

The inventory management of UNL is not only necessary but also compulsion for better performance of the organization. If UNL initiates step to the appropriate management of inventory, certainly, it will cope its set objective successfully.

5.2 Conclusion

UNL has subsidiary company of Hindustan Lever Limited, with hold 80 percent share of UNL is used to take centralized purchasing procedure. Therefore, required raw material (chemicals and perfumes) and WIP materials (soap noodles) are imported for HLL of India. Inventory constitutes the higher proportion then that of other items of current assets. The highest proportion of investment on inventory in the FY 2007/08 and the lowest proportion in the FY 2009/10. This result shows that the company has not been adopting appropriate inventory policy.

In UNL, inventory includes raw materials, packaging material, WIP materials, finished goods and stores and spare parts. The highest proportion of raw materials to total inventory in FY 2011/12. Therefore, it is observed that raw material consumption in the company is elastic. The fluctuation on stock of RM during the study period is very high. Defective purchasing policy and poor planning of raw materials may be responsible factors, for such fluctuation. The

share of packaging material in the company is elastic. This results shows that there is no fixed policy of purchasing packaging material. It is because that the company might have forecasted higher level of sales volume by looking at the gradually increasing trend of sales in previous year.

According to test of significance, there is not significant relations between two variables i.e. inventory and sales. So, this year low raw material is kept in the company due to fast movement of raw material in the FY 2008/09 and 2011/12. Similarly, in these years the highest negative deviation from the raw material turnover ratio. Which indicates the movement of the raw material or lower utilization of raw material. The correlation between raw material consumed and cost of average raw material is negative. In the FY 2008/09, the PM turnover ratio is lowest. Similarly in this year highest negative deviation from the average of packaging materials turnover ratio.

The correlation between packaging material consumed and cost of average PM is indicated as positive and low significant relationship between two variables according to 't' statistic 'r' is not significant i.e. correlation coefficient between two variables are not significant. The annual demand of RM is fluctuating. Which indicates there is fluctuation an annual demand. In FY 2008/09 and 2009/10 the annual demand is decrease then average annual demand.

5.2 Recommendation

To achieve all the objectives of UNL, the efficient management is essential. The management of inventory in UNL is not only necessary but compulsory for the better performance of the company. UNL initiates steps to the appropriate management of inventory, certainly it will attain its set objectives successfully. On the basis of study the following suggestions may be recommendation for consideration.

1. The company should define its objectives clearly with regarding to its inputs and outputs separately. Quantities and time period should be specified.

2. Purchasing plan should be prepared for different type of raw materials and WIP materials with the proper coordination and cooperation among the planning, purchasing, storing, production, marketing and sales department of avoid excessive investment on inventory.
3. UNL should try to use optimal capacity which has been idle now to maintain the level of customers demand. By this way company's profitability will be increased.
4. It is found that the company has not used EOQ model for optimum level inventory management system. It is recommended that the order size of inventory which minimizes the total cost of inventory i.e. ordering cost and carrying. Cost should be applied. So the company should adopt inventory management technique.
5. In order to minimize inventory cost, 'A' item should be control carefully and should be paid more attention. Then 'B' and 'C' items. 'B' lies between in 'A' and 'C' items. It required neither careful nor simple but a moderate control system is adequate for this items.
6. UNL is a multinational company and its products are competing in the international market. So, company use other push or a pull inventory model. Push inventory model deal with scheduling orders. For production in advance of customer demand. It refers (MRP I) (MRP II) and DRP etc. On the other hand pull model are based on marketing goods once customer demand is known. The products are pulled through the channel of distribution by the order. Recent trend suggest a movement to use pull inventory model to reduce inventory throughout the channel. Pull inventory models deals with *just-in-time and KanBan* inventory models. Thus, the UNL should try to adopt pull inventory models.
7. In order to maintain operating ratio. The company should apply the cost reduction and cost control technique in its operation.

8. Planning of inventory is most welcomed in the world today. So product of different types of personal product, different group of soaps, detergent etc. should be produced on planning basis and attention should given to implementing better marketing strategies to take a strategic advantage of competitive world.
9. Participative management approach should be introduced in formulation of plans policy and decision making process of the corporation.
10. Specific policy on inventory should be defined and comprehensive system of inventory management has to be introduced.
11. Inventory should not treated as a reason for investment rather it should be planned and coordinating factor between sales and production.
12. It can't reduce production with out adjusting in sales and inventory. If there is limitation on factor of production, sales has to be adjusted in order to maintained coordination between sales, production and inventory.
13. Family timely procurement and supply of raw material. UNL should not depend upon unreliable sources. It is better to procure raw materials by inviting tender because this system is more reliable and economic.
14. UNL should use EOQ model to determine order size which minimize the cost of organization and increase the profitability.
15. Organization should define its objective clearly with regarding to it's inputs and output separately.
16. Top level management should pay its attention to the overall management, purchasing, production, and financial aspect of factory.

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Appendix A

Correlation between Inventory and Net Profit

| FY | Inventory (x) | Net profit (Rs. mil.) (y) | x ² | y ² | xy |
|---------|------------------|------------------------------|-------------------------------|-------------------------------|-------------------|
| 2006/07 | 132.4 | 120.56 | 17529.76 | 14534.7136 | 15962.144 |
| 2007/08 | 293.93 | 68.04 | 86394.8449 | 4629.4416 | 19998.9972 |
| 2008/09 | 144.46 | 42.86 | 20868.6916 | 1836.9796 | 6191.5556 |
| 2009/10 | 126.11 | 43.2 | 15903.7321 | 1866.24 | 5447.952 |
| 2010/11 | 184.22 | 140.78 | 33937.0084 | 19819.0084 | 25934.4916 |
| 2011/12 | 229.76 | 189.2 | 52789.6576 | 35796.64 | 43470.592 |
| | ΣX 1110.88 | ΣY 604.64 | ΣX ² 271216.123 | ΣY ² 102591.254 | ΣXY 149358.025 |

Source: Annual report of UNL

Correlation between Inventory (x) net profit (y) is 'r'.

$$\begin{aligned} \therefore r &= \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \\ &= \frac{6 \times 149358.025 - 1110.88 \times 604.64}{\sqrt{6 \times 271216.123 - (1110.88)^2} \sqrt{6 \times 102591.254 - (604.64)^2}} \\ &= \frac{40499.46}{170726.184} \\ \therefore r &= 0.2372 \end{aligned}$$

Appendix B

Correlation between Sales and Inventory

| FY | Sales (x) | Inventory (Rs. mil.) (y) | x^2 | y^2 | xy |
|---------|-------------------------|-----------------------------|--------------------------------|-------------------------------|-------------------------------|
| 2006/07 | 1728.63 | 132.4 | 2988161.677 | 17529.76 | 228870.612 |
| 2007/08 | 1540.99 | 293.93 | 2374650.18 | 86394.8449 | 452943.1907 |
| 2008/09 | 1236.05 | 144.46 | 1527819.603 | 20868.6916 | 178559.783 |
| 2009/10 | 1244.73 | 126.11 | 1549352.773 | 15903.7321 | 156972.9003 |
| 2010/11 | 1524.9 | 184.22 | 2325320.01 | 33937.0084 | 280917.078 |
| 2011/12 | 1481.56 | 229.76 | 2195020.034 | 52789.6576 | 340403.2256 |
| | $\Sigma X =$ 8756.86 | $\Sigma Y =$ 1110.88 | $\Sigma X^2 =$ 16646041.109 | $\Sigma Y^2 =$ 271216.1227 | $\Sigma XY =$ 2039530.8054 |

Source: Annual report of UNL

Correlation between Sales (x) and Inventory (y) is 'r'.

$$\begin{aligned} \therefore r &= \frac{N \Sigma XY - \Sigma X \cdot \Sigma Y}{\sqrt{N \Sigma X^2 - (\Sigma X)^2} \sqrt{N \Sigma Y^2 - (\Sigma Y)^2}} \\ &= \frac{6 \times 2039520.81 - 8756.86 \times 1110.88}{\sqrt{6 \times 16646041.109 - (8756.86)^2} \sqrt{6 \times 271216.1227 - (1110.88)^2}} \\ &= \frac{257476.22}{634327.2} \end{aligned}$$

$$\therefore r = 0.406$$

Appendix C

Correlation between Cost of RM Consumed and Cost of Average RM

| FY | Cost of RM consumed (x) | Cost of average materials (y) | x ² | y ² | xy |
|---------|-------------------------|-------------------------------|---------------------------------|--------------------------------|---------------------|
| 2006/07 | 994.6 | 74.9 | 989229.16 | 5610.01 | 74495.54 |
| 2007/08 | 816.9 | 97.7 | 667325.61 | 9545.29 | 79811.13 |
| 2008/09 | 545.5 | 99.4 | 297570.25 | 9880.36 | 54222.7 |
| 2009/10 | 542.36 | 61.63 | 294154.3696 | 3798.2569 | 33425.6468 |
| 2010/11 | 660.01 | 77.24 | 435613.2001 | 5966.0176 | 50979.1724 |
| 2011/12 | 623.62 | 109.9 | 388901.9044 | 12078.01 | 68535.838 |
| | ΣX= 4182.99 | ΣY= 520.77 | ΣX ² =4293672.331 | ΣY ² =52751.0426 | ΣXY =445250.1162 |

Source: Annual report of UNL

Correlation between Cost of Raw Material Consume (x) and Cost of Average Raw Material (y) is 'r'.

$$\begin{aligned}
 \therefore r &= \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \\
 &= \frac{6 \times 445250.12 - 4182.99 \times 520.77}{\sqrt{6 \times 4293672.33 - (4182.99)^2} \sqrt{6 \times 52751.05 - (520.77)^2}} \\
 &= \frac{-25649.25}{1210.52 \times 174.92} \\
 \therefore r &= -0.1211
 \end{aligned}$$

Appendix D

Correlation between Cost of Packaging Materials Consumption and Cost of Average Packaging Materials

| FY | Cost of PM consumption (x) | Cost of Average PM (Rs. mil.) (y) | x ² | y ² | xy |
|---------|----------------------------|-----------------------------------|----------------------------------|--------------------------------|--------------------|
| 2006/07 | 230.7 | 24.14 | 53222.49 | 582.7396 | 5569.098 |
| 2007/08 | 227.5 | 34.5 | 51756.25 | 1190.25 | 7848.75 |
| 2008/09 | 156.5 | 31.8 | 24492.25 | 1011.24 | 4976.7 |
| 2009/10 | 124.1 | 16.4 | 15400.81 | 268.96 | 2035.24 |
| 2010/11 | 135.12 | 16.63 | 18257.4144 | 276.5569 | 2247.0456 |
| 2011/12 | 137.67 | 22.58 | 18953.0289 | 509.8564 | 3108.5886 |
| | ΣX= 1011.59 | ΣY= 146.05 | ΣX ² = 266705.6933 | ΣY ² = 4118.6829 | ΣXY= 30627.1822 |

Source: Annual report of UNL

Correlation between Cost of Packaging Material Packaging consumption (x) and Cost of Average Packaging Material (y) is 'r'.

$$\begin{aligned} \therefore r &= \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \\ &= \frac{6 \times 30627.19 - 1011.59 \times 146.05}{\sqrt{6 \times 266708.69 - (1011.59)^2} \sqrt{6 \times 4118.69 - (146.05)^2}} \\ &= \frac{5187.98}{347.8 \times 66.12} \end{aligned}$$

$$\therefore r = 0.2256$$

Appendix E

Calculation of Correlation between Sales and Net Profit

| FY | Sales (x) | Net profit (y) | x ² | y ² | xy |
|---------|--------------|----------------|-------------------------------|-------------------------------|-------------------|
| 2006/07 | 1728.6 | 120.56 | 2988057.96 | 14534.7136 | 208400.016 |
| 2007/08 | 1541 | 68.04 | 2374681 | 4629.4416 | 104849.64 |
| 2008/09 | 1236.5 | 42.86 | 1528932.25 | 1836.9796 | 52996.39 |
| 2009/10 | 1244.7 | 43.2 | 1549278.09 | 1866.24 | 53771.04 |
| 2010/11 | 1524.9 | 140.78 | 2325320.01 | 19819.0084 | 214675.422 |
| 2011/12 | 1481.6 | 189.2 | 2195138.56 | 35796.64 | 280318.72 |
| | ΣX 8757.3 | ΣY 604.64 | ΣX ² 16647202.5 | ΣY ² 102591.254 | ΣXY 1212998.56 |

Source: Annual report of UNL

Correlation between sales (x) net profit (y) is 'r'.

$$\begin{aligned} \therefore r &= \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \\ &= \frac{6 \times 1212998.56 - 8757.3 \times 604.64}{\sqrt{6 \times 16647202.5 - (8757.3)^2} \sqrt{6 \times 102591.254 - (604.64)^2}} \\ \therefore r &= 0.5139 \end{aligned}$$

Appendix F

Correlation Coefficient between Sales and Gross Profit

| FY | Sales (Rs. x) | Gross profit (y) | x ² | y ² | xy |
|--------------|------------------------|-------------------------|-------------------------------|-------------------------------|----------------------------|
| 2006/07 | 1728.6 | 283.56 | 2988161.677 | 80406.2736 | 490170.3228 |
| 2007/08 | 1541 | 320.16 | 2374650.18 | 102502.4256 | 493363.3584 |
| 2008/09 | 1236.1 | 298.32 | 1527819.603 | 88994.8224 | 368738.436 |
| 2009/10 | 1244.6 | 401.59 | 1548954.485 | 161274.5281 | 499806.8663 |
| 2010/11 | 1524.9 | 543.74 | 2325320.01 | 295653.1876 | 829149.126 |
| 2011/12 | 1481.6 | 555.79 | 2195020.034 | 308902.5241 | 823436.2324 |
| Total | $\Sigma x =$ 8757.3 | $\Sigma y =$ 2403.16 | $\Sigma x^2 =$ 16645642.82 | $\Sigma y^2 =$ 1131981.974 | Σxy 4093083.299 |

Source: Annual report of UNL

Correlation coefficient between sales (x) and gross profit (y) is 'r'.

$$r = \frac{N\Sigma xy - \Sigma x \cdot \Sigma y}{\sqrt{N\Sigma x^2 - (\Sigma x)^2} \sqrt{N\Sigma y^2 - (\Sigma y)^2}}$$

$$= \frac{6 \times 4093083.299 - 8757.3 \times 2403.16}{\sqrt{6 \times 1664542.82 - (8757.3)^2} \sqrt{6 \times 1131981.974 - (2403.16)^2}}$$

$$= \frac{256809.82}{4212897.625} = 0.060958$$

$$\therefore r = 0.61$$

Appendix G

Correlation between sales and operating expenses

| FY | Sales (Rs. x) | Operating exp. (y) | x ² | y ² | xy |
|--------------|------------------------|-------------------------|-------------------------------|-------------------------------|------------------------------|
| 2006/07 | 1728.6 | 1571.37 | 2988161.677 | 2469203.677 | 2716317.323 |
| 2007/08 | 1541 | 1425.4 | 2374650.18 | 2031765.16 | 2196527.146 |
| 2008/09 | 1236.1 | 1162.3 | 1527819.603 | 1350941.29 | 1436660.915 |
| 2009/10 | 1244.6 | 1111.02 | 1548954.485 | 1234365.44 | 1382742.161 |
| 2010/11 | 1524.9 | 1334.58 | 2325320.01 | 1781103.776 | 2035101.042 |
| 2011/12 | 1481.6 | 1233.3 | 2195020.034 | 1521028.89 | 1827207.948 |
| Total | $\Sigma x =$ 8757.3 | $\Sigma y =$ 7837.97 | $\Sigma x^2 =$ 16645642.82 | $\Sigma y^2 =$ 13431819.99 | $\Sigma xy =$ 14943758.52 |

Source: Annual report of UNL

Correlation coefficient between sales (x) and operating expenses (y) is 'r'.

$$r = \frac{N\Sigma xy - \Sigma x \cdot \Sigma y}{\sqrt{N\Sigma x^2 - (\Sigma x)^2} \sqrt{N\Sigma y^2 - (\Sigma y)^2}}$$

$$= \frac{6 \times 14943758.52 - 8757.3 \times 7837.97}{\sqrt{6 \times 16645642.82 - (8757.3)^2} \sqrt{6 \times 13431819.99 - (7837.97)^2}}$$

$$= \frac{1230325.25}{1770745.332} = 0.69$$

$$r = 0.69$$

Appendix H

Questionnaires of UNL for the purpose of study on inventory management

1. The inventory management and control system followed by Unilever Nepal Limited are:

- A. Inventory management through ABC analysis []
- B. Perpetual inventory management system (physical checking)[]
- C. Determination of optimal stock level (EOQ) []
- D. If other, please specify:.....

2. In application of ABC analysis, specify the name of inventories (raw materials, work in progress, finished goods and spare parts) according to purchasing cost, manufacturing cost and selling price.

(High cost to low cost)

| S.N. | Raw material | Work in progress | Finished goods | Spare parts |
|------|--------------|------------------|----------------|-------------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |

3. For determining economic order quantity, which and how much components and the expenses were incurred as ordering and carrying cost?

Ordering cost:

| S.N. | Components of costs | Amount (Rs.) |
|------|---------------------|--------------|
| A | | |
| B | | |
| C | | |
| D | | |
| E | | |
| F | | |

Carrying cost:

| S.N. | Component of cost | Amount (Rs.) |
|------|-------------------|--------------|
| A | | |
| B | | |
| C | | |
| D | | |
| E | | |
| F | | |

4. What are the purchasing procedure of Unilever Nepal Limited?

A. Centralize and purchasing []

B. Decentralized purchasing []

5. The store control technique used by the Unilever Nepal Ltd.

A. Bin card []

B. Store ledger []

6. What are the methods used by Unilever Nepal Limited for valuation of inventories?

A. Weighted average cost method[]

B. First in first out method (FIFO)[]

C. Last in first out method (LIFO) []

D. Special identification method[]

E. Average cost method []

F. Latest purchase price []

7. Please specify the problem faced by the Unilever Nepal Limited company while managing inventories?