CHAPTER - I

INTRODUCTION

1.1 Industrialization in Nepal

Industrialization is important for achieving the basic objective of a country's economic and social progress. It facilitates in effective mobilization of resources such as capital and skill, which might otherwise remain unutilized. It also acts as a vehicle for fostering innovation and technology improvement for industrial development, thus has a multiplier effect on the economy of a country.

For the rapid economic development of developing countries like Nepal, development in agriculture sector only is not sufficient. It is essential to develop the industrial sector too. Thus, industries have an important role to play in accelerating the rate of economic development. At certain stage of country's economic development, the highest returns may come from the production of particular types of products, agricultural products or services. The uses of resources always depend on market prospects and costs. So, the interesting question is not how fast a country can be industrialized, but how incentive policy, rules and regulation are designed so that new industries make maximum contribution to the country's economic development.

The industrialization started very late in Nepal, it is only after the Second World War. Industrialization is a comparatively new phenomenon in Nepal. Nepal is a developing countries in the world, which is still in its crawling stage of industrial development. The sound economic development of any nation depends upon the higher rates of growing of production activities in the different sector of the country's economy. About four decades ago, when the country was under Rana rule for more than a hundred years no significant initiatives were taken to improve the economic condition of the country. There were few Rana Prime Ministers who had shown their interest in establishing some industries and public companies for the first time in the country. During the rule of Ranas, few industries were established, for example, the then Prime Minister Chandra Shamsher J.B.R. had established means of "communication and rope-way transport". Like wise, the then Prime Minister Juddha Shamsher J.B.R. had established the first financial institution of Nepal, like Nepal Bank Ltd in 1994 B.S.

Morang Sugar Mills Ltd. and Nepal Insurance & Transport Company Ltd in 2003 B.S. and 2004B.S.respectively.

After the Rana rule in 2007 B.S. and during the three decades of panchayat system in Nepal, a number of companies, industries and financial institution were established in the country. Democracy was restored in the country in 2046 B.S. After the liberalization economic policy in the country, many industries were established as public and private industries and companies were established.

Timely amendments in Industrial Policy Industry Enterprise Act and economic polices have been made over the period of the years with a view to industrialize the country. Inadequate industrial base of the country, made imperative to identify new industrial sectors, which are instrumental to attract and mobilize local manpower, material and scattered capital of the country.

It is believed that in order to achieve security, stability and high standard of living, the country must be industrialized. But the industrial sector of our country is facing many problems. Such problems arises due to the country being the landlocked and underdeveloped, lack of trained and skilled manpower, financial resources, inconvenience in transport and communication networks, non availability of energy at reasonable rate, shortage of capital, small size of the market, unawareness of the industrial potential, higher cost of production, low productivity of inputs, technology, instabilities in government policies etc. (Pradhan, 1994:181)

Now, Nepal has adopted the policy of economic liberalization and privatization and also got the membership of World Trade Organization (WTO) through the globalization. For strengthening the economy of any country both the private and public sectors should play vital role. Now government is adopting foreign direct investment policy to encourage foreign investors. These policies create positive impact to the private manufacturing companies for industrial development. Due to the poor performance in term of capacity utilization, productivity, efficiency and profitability of Nepalese public sector manufacturing company needs to take competitive strategy, innovation, research and development. To be alive in competitive environment of globalization today, industries can sustain their existence and growth only through a continuous process of innovation in functions, quality and product cost.

1.2 Introduction of Inventory Management

The literary meaning of the word inventory is stock of goods. Inventories are greatly influenced by the level of sales. Since inventories are acquired before sales take place, therefore accurate sales forecast is critical to effective inventory management. Inventories generally represent the major element in the working capital of an organization and a very significant proportion of total assets.

Inventory is one of the most important assets to most of the organization. Larger percentage of total capital is invested in inventory. Inventory is vital element of the firms in the efforts to achieve desire sales level. Inventory can be defined as a stock of any kind of items reserved in a store for a certain period. It constitutes the most significant portion of current assets. Inventories are stocks of finished product of a company or components that make up the product.

The various forms in which inventories exist in a manufacturing company are: raw material, work in progress, and finished goods. Raw materials are those basic inputs that are converted into finished product through the manufacturing process. Raw material inventories are those units, which have been purchased and stored for future production. Work in progress inventories are semi-manufactured products. They represent product that need more work before they become-finished product for sale. Finished goods inventories are those completely manufactured products, which are ready for sale. Stock of raw material and work in progress facilitate production, while stock of finished goods is required for smooth marketing operation. Thus, inventories serve as a link between the production and consumption of goods.

Modern concept of Inventory management can be traced to 1915-1922, with several authors (R.C. Davids, H.S. Owen, E.F. Clark and R.H.Wilson) acting independently, developed of carrying and holding costs where the demand was known and constant.

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 dimensions are interrelated and cannot be looked in isolation. (Agrawal, 2000: 238).

Inventory is the stock of materials or a product that frequently occurs in the manufacturing organization, depending upon the nature of industry and firm, inventories may be durable and perishable, valuable and inexpensive. When materials are purchased by an organization they have to be store until they are put into the production process. When the production is over the finished products have to be stored until they are sold. In manufacturing there are four steps of inventories such as raw materials, work in process (semi manufactured product), finished goods and office supplies (Pandey, 2002:755).

"Inventory management is determining how much inventory there should be on hand to serve, the purpose of the business most economically"(Bhandari,1971:20).

Thus the 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. Therefore, inventory management is primarily concerned with minimizing total cost of inventory. Both the physical as well as financial dimension of inventory should be efficiently managed. Thus, the real task of top management lies in formulating the plan and policy that will lead to optimal inventory investment for the attainment of desired objectives.

To know the cost of inventory management, the manager should identify all the costs involved in purchasing and maintaining inventories. These costs are ordering cost and carrying costs.

Ordering Costs

Ordering costs are the costs of placing and receiving an order. The cost of each order generally is fixed regardless of the average size of inventory. Total ordering cost (TOC) is the product of number of order (N) and fixed cost per order (O).

Thus, $TOC = N \times O$.

Carrying Costs

Carrying costs are associated with inventory that include the opportunity cost, storage costs, insurance, and deterioration. The annual total carrying cost (TCC) is equal to the product of average in units (Q/2), annual percentage carrying cost and price per units, and

Thus,

$TCC = \frac{Q}{2} \times C$.

Total Inventory Cost

Total inventory cost (TIC) is equal to the sum of total carrying cost and total ordering cost capital employed in inventory.

Thus,

$TIC = \frac{Q}{2} \times C + N \times O +$ Purchase Cost of Inventory.

Similarly, inventory has direct relationship with profit planning, especially in formulating production budget and purchase budget. This can be known by understanding the following formulas:

Production Units = Sales Units + Closing Inventory – Opening inventory

Purchase Units = Production Units + Closing Inventory of raw materials – Opening inventory or raw material.

1.3 Brief Overview of Unilever Limited

The study was focused on Unilever Ltd. 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 Limited was formed as a public limited company in 1993 and production started from December 1994. It was registered under Company Act 2053. As a growing manufacturing company, Unilever Limited has main objective of expanding the domestic business by introducing new brands and categories in the domestic market and import substitution of foreign goods too.

A notice was issued on dated 18th Feb.2005 (2061-11-07), in the Kathmandu post to inform all the concerned about the change name of the company for Nepal Lever Limited to Unilever as per the approved decision taken by 11th general meeting held on 13th Dec.2004 (2064-08-28). Under the special resolution the change name has been approved by the company register office the Government of Nepal with effect from the 9th Feb 2005 (2061-10-27). Binding Unilever Limited to bear assumes all the tax and other payable liabilities towards all the moveable and immovable assist existing in the company's former name.

Despite difficult trading conditions, the company’s domestic business achieved market growth of 16% during the fiscal year 2002/03. Especially, in the rural areas affected by the frequent disturbance across the country. However, as indicated in the earlier year, there has been a substantial 37% reduced in exports. As indicted in the previous years reports, exports was on decline from the fiscal year 2000/2001, consequent to the fiscal change introduced in the Indian budget and with the emergence of many new tax-exempt zone in Indi, and because of withdrawal of the rebate on income tax on profits on exports business unviable. The domestic turnover has increased by 16% the export turnover declined by 37% in the year. Hence, the overall turnover is marginally higher by 2%.

The company received the “First FNCCI National Excellence Award” for its overall performance.

Unilever Limited is taking a great corporate social responsibility. It has contributed in various ways to the social sector. Unilever Limited is proud of its role in the income and employment generation opportunities in the country. ULL provides direct employment to over 120 Nepalese citizens while generating indirect employment for over 20 times that number through its networks of suppliers, distributers and ancillaries (11th annual report, 2060/61). It is already one of the largest corporate taxpayers of Nepal.

It is involving in various social projects. Unilever Limited employee Trusts mobile medical unit, which is extensively used in Makwanpur district for providing emergency medical services. A three months "Sewing machine training program" for 33 women's has been conducted at the Makwanpur district. Periodical health hygiene awareness program were conducted together with health check ups program for local people. Relief goods were distributed to more than 100 victims of Chitwan VDC of Makwanpur district, which have suffered from the landslides and floods during the year. This was funded by one-day salary of all the employees with matching contribution of the company. Pepsodent and Nepal dental association together celebrated week health broadcasting, health message in TV, radio and press, a number of free dental check ups clinics were conducted with support of Pepsodent. There was also painting competition among school children on health theme, which evoked an excellent response. The miles of healthy smiles programs, the ambitious project for contracting sector throughout Nepal to import oral health education, has covered more than 250000 children so far. ULL is initiating an awareness campaign on hand washing through many infomercials and school community in association with UNICEF (11^{th} annual report, 2060/61)

1.4 Ownership of Unilever Limited

It is a subsidiary company of foreign investment and technology transformation. It has an authorized capital of Rs 30,00,00,000(thirty corers) divided into 30,00,000 (thirty lakhs) ordinary shares of Rs 100 each. The paid up capital is Rs 12,00,00,000 and twelve lakhs ordinary shares of RS 100 each and working capital of Rs 99,80,00,000(Nine corers and ninety eight lakhs). The company is listed in Nepal stock exchange centre and has a positive response from investors. The composition and percentage of shares are as follows:

Group	Allocation of shares	% of shares
A	Hindustan Lever Ltd, India	80%
B	Shiv Kreem Land and ind. Co (pvt) Ltd. Kath	5%
C	shares subscribed by the general public	15%

(Source: Annual Report 064/65)

1.5 The Corporate Purpose of Unilever Ltd

The main objective of ULL is to carry on its own business of manufacturing detergent, toilet soaps, personal products, scourers, soap noodles, laundry soap, tea and vanaspati.

- Other objective of ULL is to meet the every need of people everywhere to anticipate the aspirations of consumers and to respond creatively and competitively with the branded products and services, which rises up quality of life. They bring their wealth of knowledge and industrial expertise to the service of local consumers.
- ULL has deep roots in local culture that the markets are unparallel inheritance thus has become foundation for the company's future growth. It brings wealth of knowledge and international expertise to the service of local consumers.
- For its long-term success, ULL requires a total commitment to exceptional standards of performance and productivity to working together effectively and willingness to embrace new ideas and learn continuously.
- The company believes that the success required the highest standards of corporate behavior towards its employees, consumers, societies and the world in which it operates.
- This is ULL Nepal's road to sustainable profitable growth and long-term values for their shareholders and employee i.e. for their stakeholders.

Source:Annual Report of ULL

1.6 Statement of the Problems

Inventory must be managed in such a way that it does not lead to disadvantage of production stoppage. The lower the stock maintenance, the more susceptible is the business interruption to the manufacturing process by the cessation of the outside supplies (Dwadi, 2000:48). Making the smooth flow of production must be the sole objective of ideal inventory policy in the context of Nepalese manufacturing enterprises. Production oriented enterprises should held a sizeable level of inventory. Effective and efficient inventory management system can only yield expected profit of the corporation. The suitable adaptation of inventory level is crucial for an organization. It should be balance in such a way that should neither be excessive nor be inadequate. The excessive carrying cost and risk of liquidity where as the inadequacy of inventory causes either product holds up or failure to meet the demand of costumer.

Inventory directly affects profitability of an organization. So managing inventory in a proper way is a great challenge to every organization. The researcher could not find optimum inventory policies in Unilever Limited by studying different journal and annual reports of organization. Looking insight into the P/L account of Unilever Limited of different years, the researcher found that, the profit did not increase significantly. In some years it's profit margin was in decreasing trend. So the researcher has chosen this topic to provide suggestions for inventory management for profit planning.

Some major issues linked with ideal inventory management of ULL are as fallows:

- How inventories are managed in ULL?
- What inventory management techniques does this company use?
- How can the factory reduce inventory cost?
- What problems ULL has been facing in the management of inventory?
- To what extent inventory and sales are related?
- What is inventory turnover cost?
- Is the inventory management policy of ULL sound?
- What would be the impact of inventory management on the profitability of the company?

1.7 Objectives of the Study

Most of the Nepalese organization is failing to make their inventory management properly; Unilever Limited is not free from these weaknesses. This study attempted to concentrate on the problem faced by Unilever Limited and so that the obstacles in the inventory management can be eliminated.

The main objective of this study was to identify the problem under laying in inventory management of ULL and it's impact on profitability. In order to meet the main objectives the following specific were proposed.

1. To examine the existing inventory system applied by ULL.
2. To determine optimal inventory level of major raw materials.
3. To analyze the relationship among purchase, sales and inventories.
4. To examine the techniques being employed to the manager to manage the inventory of ULL.
5. To identify the relationship between inventory and different components of profit planning covering production budget, purchase budget by focusing inventory policy.
6. To provide appropriate suggestion based in the major findings.

1.8 Limitations of the Study

This study attempted to find out the problems and impact on the profitability of ULL. Therefore the following where the major limitations of the study:

- This study focused on inventory management and its impact on profitability.
- This was a case study, so it would not be applicable in general situation or all types of manufacturing enterprises.
- ULL produced different types of products and had diversified product groups. So this study dealt with the corporate product groups namely detergent, toilet soap, personal products, scourers, soap noodles, laundry soaps, tea and vanaspati.
- This study was based on data provided by the company and other available resources. Hence this study was based on secondary data as well as primary data.
- Financial tools and statistical tools were used in analyzing the inventory management of Unilever Limited.

1.9 Importance of the Study

As we know that inventory management plays a vital role in manufacturing as well as trading organization equally. Without efficient and effective inventory management, an organization cannot achieve its objective. So a topic chosen for study would be useful to both i.e. organization as well as researchers. The knowledge of sound keeping inventory management helps both i.e. organization and customers. So I am trying to emphasis was given on the importance of inventory management in the organization. In terms of the tools and techniques that can be used while for sound inventory management in the organization? and the weakness of the organization for sound inventory management system? There are lots of theses on this topic. Although, thesis related on this topic as a cooperative study are not found more. So, I selected this topic.

1.10 Organization of the Study

The research report was divided into five chapters, in the following pattern as specified by the Faculty of Management, T.U.

Chapter – I Introduction

It included general background of study statement of the problem, objective of the study, introduction of the company, objectives and limitations of the study.

Chapter – II Review of Literature

This chapter included review of literature. The chapter was divided into two portions, first being theoretical framework and second was review of the previous studies.

Chapter – III Research Methodology

The Chapter included research metrology research design, nature and sound of data, data gathering procedure, presentation and analysis of techniques and tools. Both primary and secondary data are used in this study.

Chapter – IV Data Presentation and Analysis

Fourth chapter of this study was concerned with data presentation and analysis. This is the main part of the study. The data were presented in the tabular and other forms. Various statistical presentations were used in the analyzing the collected data from different sources. Actual results were obtained after analysis of data by using financial and statistical tools and techniques. Major findings were drawn after analysis of data.

Chapter – V Summary, Conclusion and Recommendations

This is the last chapter of the study. It included, summary conclusion, and some recommendations.

CHAPTER - II

REVIEW OF LITERATURE

2.1 Inventory Concept

The dictionary meaning of inventory management is stock of goods or a list of goods. Various authors have given meaning of inventory differently. In ordinary language inventory denotes stock of finished goods. In a manufacturing concern, it includes raw material, work in progress and stocks etc.

Inventory refers to the physical stock of goods. Which though remain idle in the store but is essential for smooth selling of the company and hence has economic values (Kothari, 1990:39).

Inventory is composed of assets that will be sold in future in the normal course of business operation (Khan and Jain, 2003: 20.3).

Inventory as a current asset, differ from the other current assets because only financial manager are not involved. Rather, all the financial areas, i.e. finance, marketing, production, and purchasing are involved. The views concerning the appropriate level of inventory would differ among the different functional areas (Khan and Jain, 2003: 20.4).

Any thing that a firm kept meeting in future requirement of production and sale is called inventory. The basic reason for holding inventory are to keep up the production activities unhampered It is neither physical possible nor economically suitable to wait for the stocks to arrive at when they are actually required. There, keeping up inventory is a must for efficient working of a business unit (Khan and Jain, 2003: 20.4).

To understand the exact meaning of inventory the word inventory we may study it from the usage side and from the point of entry in the operation (Sharma and Gupta, 1984:176).

Inventory form a link between production and sale of product. The optimum level of inventories should be judged in relation to the flexibility if inventories. The lower level of inventories the less flexibility of the firm, and higher level of inventory increase the flexibility of the organization.

2.2 Nature of Inventory

Every business operation whether big or small has to maintain some inventory. An inventory serves as cushions between demand and supply. Inventory for any organization is necessary and require careful planning and formulation of policies keeping in view the best interest of organization. Depending upon the nature of the industry and firm inventory may be durable and non-durable, perishable and non-perishable, valuable and inexpensive.

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

Manufacturing firm generally hold four types of inventories:

- Raw material
- Work in progress
- Finished goods
- Supplies and spare parts

i) Raw Materials

Raw materials are those basic inputs that are converted into finished product through the manufacturing process. These are goods that have yet committed to production in manufacturing firm. The level of a materials inventories is influenced by anticipation production, seasonally of production, reliability of sources of supply and the efficient of scheduling purchase and production operation.

Raw materials inventories are those units which have been purchased and stores for future production (Weston and Copeland, 1992: 814).

It consists of item that a firm purchases for use in its production process. It may consist of basic material and manufactures goods. Maintaining adequate raw materials inventories provides a firm with advantage in both purchasing and production.

ii) Work in Progress

These categories include those materials that have been committed to the production process but have not been completed. Work in progress inventories are semi-manufactured products. They represent products that need more work before they become finished product for sale.

"Goods in progress include such items as components and sub assembles that are not yet to be sold"(Hampton, 1990: 241).

Work in progress is neither a finished product nor raw material. It is the product in the middle of raw material and finished product. WIP inventories are strongly influenced by the length of production, which is the time between placing raw materials in production and completing the finished product. It is very different to separate which materials are WIP as well as finished goods in other industry. It depends upon nature of production. Soap noodles are the WIP materials used by the country.

iii) Finished Product

Finished goods are those completely manufactured products, which are ready foe sale. In a manufacturing firm, they are final output of production process. Stock of raw materials and WIP facilities production of finished goods. Finished goods are required for smooth marketing operation." Therefore finished goods are completely goods a waiting for sale"(Panday, 2002:756).

The finished products produced by ULL are as follows:

- Detergents
- Toilet Soaps
- Personal products
- Laundry Soap
- Tea and Vanaspati etc.

iv) Supplies and Spare Parts

Firm also maintains the fourth kind of inventory of supplies. "It includes office and plant cleaning materials (soap, broom etc), oil, fuel, bulb, and like those materials that don't direct 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" (Panday, 2002: 884).

2.3 Motives of Holding Inventories

There are four motives of holding inventory. They are Consumption Motives, Speculative Motives, Savings Motives and Precautionary Motives.

i) Consumption Motives

The main objective of holding inventory is for the regular consumption or use of them by the organization. The regular operation guides the basis of holding inventory. 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 material at a given time to stream live production.

ii) Precautionary Motives

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 held because production and sale are not instantaneous. A firm cannot produce immediately when customers demand gods. 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 customer, when demanded, would mean loss of the firm's sales to competition. "The level of finished goods, inventories would depend upon the co-operation between sales and production as well as on production time."(Panday, 2002:984). WIP inventory builds up because of production cycle is the time span between introduction of raw materials into production and emergences 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 Motives

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

2.4 Objectives of Holding Inventory

There are many benefits of holding inventories. To hold inventories, the firm is able to separate the process o 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 an agreement the firm would not be offered rapid delivery when the scheduled production runs, it would achieve none of the economies that longer run provides. Inventories are used to provide cushion paces." In achieving the separation of these functions, the firm realizes a number of specific benefits" (Hampton, 1980:228).

a) Availability of Inventory

There should be a continuous availability of materials in the factory, finished goods for a trader and office supplies for and office so that trader or any form of product is not held up for want of any inventory.

b) Least Investment in Inventory

There should not be unnecessary investment in stock. Blocking of capital in avoidable inventory stock is wastage of resources.

c) 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 firms competitors and other will decided that they do not need the goods after all, if they must wait for delivery.

The ability of the firm to give quick service and to provide prompt delivery is closed tied to the proper management of inventory.

d) Gaining Quantity Discounts

If a firm is willing to maintain large inventories in selected product lines, it may be able to make bulk purchase of goods at large discounts, suppliers, frequently offer a greatly reduce 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 then the amount of discount.

e) Reducing the Ordering Cost

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 and counted. The invoice must be checked with the goods and then send to the accounting department so that supplies can be paid. The variable costs associated with individual order can be reduced if the firm places a few large then numerous small orders.

f) Achieving Efficient Production Runs

Once a assemble line or pieces of machinery is prepared to receive certain raw materials and perform selected production operation, a set u 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.

2.5 Needs and Importance of Inventory Management

Inventory in any organizations are pivotal role. If the organization is not paying attention to inventory management, it will effect the efficiency and profitability of the organization. Buffa observes “Inventories serve the vital function of developing the various operation in sequence beginning with raw materials extending through all the manufacturing operations and into finished goods. Storage and continuing to warehouse and retail stores.”

Importance of inventory management can be written as follows:

i. Inventory helps in smooth and efficient running of business.
ii. Inventory provide service to the customers immediately or at a short notice.

iii. Due to absence of stock, the company may have to pay high prices because of piece-wise purchasing. Maintaining of inventory may earn price discount because of bulk purchasing.

iv. Inventory also acts as buffer stock when raw materials are received late and so many sales-orders are likely to be rejected.

v. Inventory also reduces product costs because there is an additional advantage of batching and long smooth running production runs.

vi. Inventory helps in maintaining the economy by absorbing some of the fluctuation when the demand for an item fluctuates or is seasonal.

vii. Pipeline stocks (also called process and movement inventories) are also necessary where the significant amount of time is consumed in the transshipment of items from one localities to another.

2.6 Types of Cost Associated with Inventory

Two types of costs are associated with inventory: Carrying cost and Ordering cost. Carrying costs are associated with physically storing a product, while ordering costs are the costs of placing an order. These two inventory costs are having an increase relationship. A firm can carry more inventories and order less often or order more often and carrying fewer inventories. While carrying cost increase, ordering fall and vice versa. The problem is to find the lower total cost."(Bloomberg and Hanna, 2003:159). Mainly there are two types of cost.

2.6.1 Carrying Cost

Carrying cost are associated with physically goods, once the goals have been accept they became part of firm inventories prior to the recent period of high interest rates a number of studies determined that the annual cost of carrying a production inventory ranged between 10 and 34 percent of the value of the inventory, with the model figure running at approximately 25 percent. The escalating cost of money since 1979 however has increased the typical annual inventory carrying cost to appropriate 30 to 35 percent of the value of the inventory. Five major elements make up these casts in the following manner.

1. Opportunity cost of investment funds 12-20%
2. Insurance costs 2-4%
3. Property Taxes 1-3%

4.	Storage costs	1-3%
5.	Obsolescence and deterioration	4-10%

(Sources: Dobler,1992:237)

Total carrying cost vary in proportion to the value of inventory usually they are computed from the following formula.

Total carrying cost = Average inventory ×carrying cost per unit.

The inventory carrying cost further express as:

Elements of Carrying Cost

i) Opportunity cost of Investment Funds

This consists of expenses of rising funds (interest on Capital) to finance the acquisition of the inventory. If funds were not locked up in inventory. They would have earned a return. This is an opportunity cost of funds or the financial cost and component of the cost.

Capital cost or opportunity cost compares investment to what the firm could earn from other capital investment.

ii) Insurance Cost

In sprite of best precautions, firm must protect themselves against such hazard as fire or accident in the warehouse. Larger amount or inventory require larger amount of insurance. The insurance premium represents a carrying cost of inventory (Hamption, 1992:19).

iii) Property Taxes

"As with insurance, property taxes are levied on the assessed value of the firm assets: the greater the inventory value, the greater the assets value and consequently the higher is the firms tax bill" (Dobler, 1992:19)

iv) Storage Cost

The firm must provides for storage space, usually through the operation of a warehouse or supply room. The firm must employ workers to more cleanly, count, record, and protect the goods. All of these activities dealing with the physical holding of the goods are considered storage costs (Hampton, 1992:233)

v) Obsolescence and Deterioration

In the operation, a certain percentage of inventory items spoils is damaged is pilfered, or eventually become obsolete. No matter how diligently warehouse managers' guard against this occurrence, a certain amount always takes place. With new products being introduced at an increase rate, the probability of obsolescence is increase accordingly. Consequently, the larger the inventory, the greater is the absolute from source.

2.6.2 Ordering Cost

Ordering cost consist of order costs, set up costs, or both ordering cost could include preparing and processing the order request, selecting a checking the stock, preparing the payment and receiving inventory levels. Set up costs refers to modifying the manufacturing process to make different goods. They include personal costs, as well as capital equipment costs. Many firm use blanket orders to reduce order costs (Bloomberg & Hanna, 2002:161).

The term ordering cost is used in case of raw materials (or supplies) and includes the entire cost of raw materials. They include cost incurring in the following activities.

- Requisition
- Order placing
- Transportation
- Receiving, inspecting and storing
- Clerical and staff

Everetle. E. Adem, J.R. Ronald, Ebert said that inventory costs or cost associated with inventory included following five types of relevant costs (Adam & Ronald,1992: 41-42)

Elements of Ordering Costs

i) Cost of Item

The cost or value of item is usually its purchasing price: The amount paid to the supplier for the item. In some instances, however, transportation, receiving or inspection costs, for example, may be included as part of the cost of item. If the cost of item per unit is constant for all quantities ordered, the total cost of items purchased during the planning horizon is irrelevant to the operating doctrine. If unit cost varies with the quantity ordered, a price reduction called a quantity discount, this cost is relevant.

ii) Procurements Costs

Procurement costs are the cost of placing a purchase order, or the set up costs if the items are manufactured at the facility. These costs vary directly with each purchase ordered placed, procurement costs includes cost of postage telephone calls to the vendor, labor costs in purchasing in accounting, receiving costs, computer items for record keeping and purchase order supplies.

iii) Carrying (Holding) Costs

Carrying or holding costs are the costs of maintaining the inventory warehouse and protecting the inventory items. Typical costs are insurance, security, warehouse, rental, heat, light, taxes and losses due to pilferage or breakage. The cost of typing up capital in inventory is also considered a carrying cost.

iv) Stock Out Costs

Stock out cost, associated with demand when stocks have been depleted, takes the form of lost of sales or back order costs. When sales are lost because of stock out, the firm losses both the profit margin on unmade. Sales and its customer's good will. If customers take their business elsewhere, future profit margin may also be lost. When customers agree to come back after inventories have been replenished, they make back orders. Back order cost includes loss of goodwill and money paid to recording goods and notify customer when goods arrive.

v) Cost of Operating the Information Processing System

Whether by hand or by computer, someone most update as stock level change. For system in which inventory levels are not recorded daily, the cost is primarily incurred in obtaining accurate physical court of inventories. Frequently, those operating cost are more fixed than variable over a wide quantity (volume) range. Therefore, since fixed costs are not relevant to the operating doctrine, we will not consider them further.

2.7 Techniques of Inventory Management

To manage inventories, the firm's objective should be in consonance with the shareholders wealth maximization principle. To achieve this, the firm should determine the optimum level of inventory. Efficiently controlled inventories make the firm flexible. Inefficient, control result in unbalanced inventory and flexibility the firm may sometimes run out of stock and sometimes may pile up unnecessary stocks. This increase the level of investment and the makes the firm unprofitable.

To manage inventories effectively, a firm should use a system approach to inventory management. A system approach considered in a single model all the factory that effect the inventory. The model called a system may have any number of sub system tied together t achieve a single goal." In the case of inventory system the goal is to minimize the costs"(Hamption, 1992:235).

"The financial manager should aims at an optimum level of inventory on the basic of the trade off between cost and benefit, to maximize the owner's wealth. Many sophisticated mathematical techniques are available to handle inventory problems. But they are more approximately a part of production management"(Khan and Jain, 2002:20.11).

To manage inventories efficiently, answers to be sought to the following two questions:

- How much should order?
- When should it be ordered?

"The question, how much to order related to the problems of determining economic order quantity, and is answered with and analysis of costs of maintaining certain level of inventories. The second question, when to order, arises because of uncertainty and is a problem of determining the re-order point"(Panday, 2002:902).

In every aspect of inventory management, there is necessary control of inventory. There are various techniques of inventory control to avoid excess cost, physical loss, damage theft, over inventory and lower inventory, some of these techniques are discussed below.

2.7.1 Economic Order Qunatity (EOQ)

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

EOQ refers to the order size that will result in the lower total ordering and carryings costs an item of inventory. If a firm places unnecessary orders. It will incur unneeded order costs. If it places too few orders it must maintain large stocks of goods and will have excessive carrying costs. By calculating an EOQ, the firm identifies carrying cost "By calculating an EOQ, the firm identifies the number of unit to order that result in the lower total of these two costs."(Hampton, 1990:231).

How much to order, or produce is one of the main problems of inventory management. That is, the determining of a quantity for which the order should be placed is one of the important problems concerned with inventory management.

The correct quantity to buy is the quantity at which the cost of acquisition equals the cost of possession. This is technically known as the economic order quantity of re order quantity. EOQ refers to size or quantity or under which minimize the total inventory cost. Ordering or set up cost and holding or carrying cost constitutes the total cost of inventory excluding material cost. Increase in ordering numbers increase the ordering cost, but decrease the holding cost and vice-versa. A balanced is, therefore, struck between the two opposing cost factors and EOQ is determined at a level of which the ordering cost and carrying cost is equal and minimized in total. There fore, it is necessary calculate order quantity which minimizes carrying cost and ordering cost. Re order quantity is such that when it is added to the minimizes stock, it should not exceed the maximum stock.

Assumptions:

The EOQ model relies on several assumptions:

i) There is a continuous, constant, and known demand rate.
ii) The lead-time 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 moves or the distance 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 often stay far from real life. Demand is rarely continuous, constant and known; lead-time, transportation costs, and price vary. Stock out happen, planning horizons and limited and volume discounts can be significant. Also, many products are independent. No inventory in transit means that the firm buys on a delivered 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.

2.7.2 Approaches to Set EOQ

EOQ model can be determined by following methods:

i) Mathematical or formula method.
ii) Trail and error approach
iii) Graphic method

i) Mathematical or Formula Method

Mathematical models are also available to calculate economic order quantity. There are numerous models exist, as the field of inventory management and can be studies in college programs such operation research and production management. Even many mathematical models exists, the main objectives of these model is to reduce, minimizes the inventory cost or total costs.

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

$$\text{EOQ}=\sqrt{\frac{2Ao}{C}}$$

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 alternatives purchase policy of its inventory; it can purchase its requirement own one single lot. Alternatively, the firm can purchase its inventory is small lots periodically say weekly, monthly, bimonthly, half yearly and so on. It means more than one time the firm can place and order to purchase inventory. The smaller lot sizes the lower average inventory and vice-versa. How inventory holding are associated with high ordering cost and low carrying cost. This approach to the determination of EOQ uses different permutation and combination of total cost inventory purchase so as to fine the total cost.

According to this approach the carryi9ng and ordering cost for a different size of order to purchase inventories computed and the order size with the lower total cost (ordering +carrying) of inventory is the economic order quantity. (Khan and Jain, 2003:20.7).

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

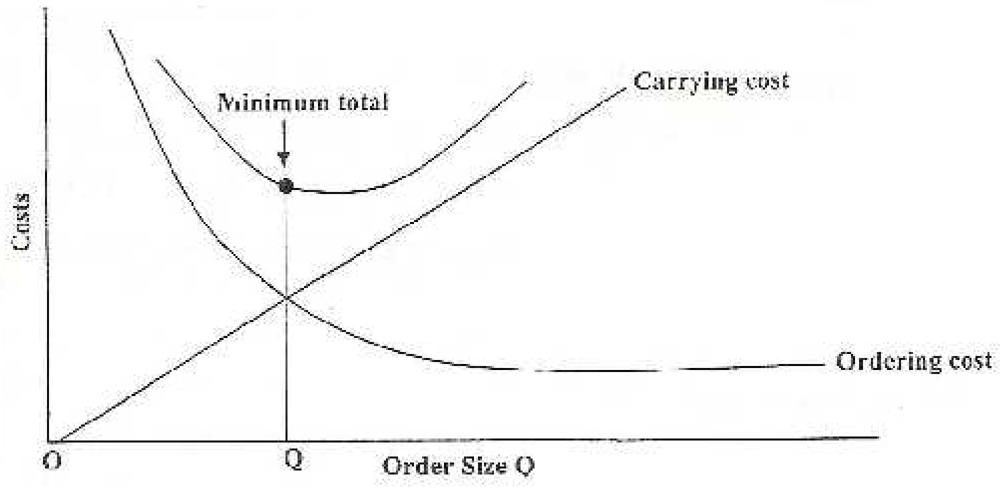
a) No of order = Increase no of order decreases order size.
b) Ordering size = Annual requirement divided by no of orders.
c) Average inventory = Equal to half of order size
d) Ordering cost = Ordering cost ×No of order

e) Carrying cost = Average inventory ×Carrying cost per unit per year

f) Total cost = Ordering cost + Carrying Cost

iii) The Graphical Approach

The economic ordering quantity can also found graphically. Figure 2.5 given below illustrates the EOQ ascertainment. In the figure, carrying, ordering and total costs are plotted on vertical and horizontal axis is used to represent the order size. Total carrying increases as the order size increases, because, on average, a larger inventory will be maintained, and ordering costs decline with increase in order size because large order size means loss number of orders. The behavior of total cash line in noticeable since it is a sum of two types of costs, which behave differently with order size. The total cost decline 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 is minimum. Thus, the firms operating profit is maximized at a point Q.



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 not change very significantly, the firm can change EOQ within range any loss (Panday, 2002:888).

2.8 Methods of Inventory Turnover Computation

Inventory by different methods. Mainly the organization can compute inventory by following methods. (Welsh, Hilton and Gordan, 1999: 61)

1) Average Sales Method

This method can be divided into two categories:

i) Average sales method

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

$$\text{Inventory} = \frac{\text{Yearly sales/total Sales During the time Period}}{\text{12 months}} \times \text{require Stock of Period}$$

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

ii) Moving Average Method

It is based on of period mostly 3, 5 or 7, under this method inventory can be calculated by using the following formula:

$$\text{Inventory} = \frac{Sales\ (Previous\ Months + current\ month + next\ months)}{Total\ No\ of\ time\ Period} \times require\ No.of\ Months$$

Under this method, both inventory and production are fluctuating. It is appropriate in those organizations, whose sales are highly seasonal.

2) Sales to turnover Ratio

This method is also two types.

i) Historical Sales Turnover Ratio Method

This method is also called HSTR, Turnover method or withdrawn method. Under this method inventory is calculated on the basic of historical ratio sales to inventory.

Inventory = Sales for the Period × HSTR or multiplier

Where, Historical sales Turnover Ratio

$$= \frac{\text{No. of Month in a year or 12 (N)}}{\text{Turnover Time}\left(\text{TT}\right)}$$

$$\text{And} = \frac{\text{Sales (historical) for the Year}}{\text{Average inventory}}$$

$$\text{Average Inventory} = \frac{\text{Opening Inventory} + \text{Closing inventory}}{2}$$

It is stable and shows the relationship between sales and inventory.

ii) Turnover Time Method

Under this method, inventory can be calculated as:

$$\text{Inventory} = \frac{\text{Total Sales/Budgeted sales for the Year}}{\text{Turnover Time}}$$

Mostly it is used for suitable inventory policies.

2) Proportional Sales Method

It is not widely used. Mostly it is used in small industry or basic product/commodity or monopoly market, which has certain sales. Under this method inventory can be calculated as:

Inventory = Sales for the Month × Given Ratio

2.9 Procedures of Inventory Management

These procedures of inventory management cover the actives such as purchasing, receiving and store keeping, issuing and pricing the inventory items.

2.9.1 Purchasing

The process of inventory management in fact begins 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 make it’s a management activity that goes belong the simple act of buying and including the planning and policy actives, research and development services section. Management suggests that purchasing decisions involve the weight of alternatives possibilities and may of these alternatives involve the influence of the other function on the purchasing decision. A good purchasing management has played important role in the management companies. The company should purchasing raw materials, supplies in the right quality from the right origin at the right time and cost. Purchasing management should be effectives other wise it hamper in the quality of production.

Purchasing now has become a specialized function in many organizations. Vesting express that "purchasing is a managerial actives that goes beyond the simple act of buying and includes the planning and police, objective covering wide range of related and complimentary included in such activities are the research and development required for the proper selection of materials and sources from which these materials may be bought.

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

2.9.2 Objectives of Purchasing

The objective of purchasing should conform the overall objectives of an organization. The objectives of purchasing are like the objectives 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 source, with the right services, and the right price.

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

a) Provide an uninterrupted flow of materials, supplies and services requires to operation the firm.
b) Minimize Inventory Investment and loss: The cost of carrying inventory reaches as much as 50% of the value of product. Inventory carrying cost typically range between 20 and 30 percent of the value of product.

c) Maintain Adequate Quality Standards: The quality of firm's product may be limited by the quality of purchased materials. It is easy to lose sight of quality standards not be compromised solely for lower price.
d) Find or Develop competent Suppliers: Goods supplies help to solve many purchasing problems. It is primary goals of the purchasing manager to locate and attracts quality supplies.
e) Standardize, where ever and whenever possible, the items bought when ever possible.
f) Purchased required items and services at the lower ultimate price.
g) Improve the organization competitive position.
h) Work harmoniously with other department in the organization.
i) Accomplishing the purchasing objectives at the lower possible level of administrative costs.

2.9.3 Procedures of Purchasing

"Effective purchasing means learning the purchase, identified qualified sources of supplies, minimizing the total cost of supplies and administrating the purchase"(Adam and Ronald, 1992:221). While individual purchase may appear quite different, this is general underlying purchasing process. The process is described below (Bloomberg and Hanna, 2003:451).

a) Recognized Needs

In organization, needs are recognized in many ways. A department may contract to buy new production equipment. Purchasing may be notified of an order for component parts by the materials requirement planning system and simply reviewed by purchasing. Each of these methods starts the purchasing process at same level. Once the need has been identified.

b) Identifying a Supplier

Identifying the supplier may be as simple as making sure the e-mail address is correct on electronic order or as complex as asking for pre-bid proposals on major capital equipment, conducting a bidders meeting and evaluating many detailed proposals. To some extent, this depends on the type of purchase new but straight is buy, or partial re buy and the product or service being purchased. Once the potential suppliers have been identified, one or more will be chosen to provide the goods.

c) Qualifying and Placing an Order

Once a supplier has been identified, the order must be initiated, contract signed or some steps taken to get the goods delivered or services provided: purchasing is usually then responsible for determining if order are filled correctly, if contract item are met, if gods meet standards and if supplies performs satisfactory.

d) Monitoring and Managing the Delivery Process

Primarily, purchasing makes sure the correct goods were delivered in the correct quantity at the right pace. If not, purchasing takes some action to fill the gaps.

e) Evaluating the Purchasing and the Suppliers

This is a two-stage process A particular may go well or poorly. Most purchasing organization summarize the accumulated experience with a suppliers through many transaction and many purchase When one transaction goes awry, purchasing may contract the suppliers to avoid future problems, When many transactions fail to meet standards, purchasing then seek new suppliers.

2.9.4 Receiving and Storing Keeping

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 received the items and received items are compared with purchase order and actual materials 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 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, 2000:21).

In the word of Maynard, the duties of store keeping are to receive materials to protect than while in storage from damage and unauthorized removal to issue the materials in the right quantity at the right time, to right place and to provide these services promptly and at least costs.

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 reduces delay and cost of handling and relieves internal traffic congestion. For this reason, decentralized storerooms are often provides near various production centers. In some cases, materials are stored without protection on the production floor, immediate accessibility being important than possibility of loss.

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

Objectives of Store Keeping

The major objectives of storekeeping may be stated as follows:

- Receiving handling and issuing goods economically and efficiently.
- Using the storage available space and labor effectively.
- Protection of all goods in stores against all those from fire, theft, and obsolesce.
- 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 and firm generally uses different types of controlling devices like:

a) Bin Cards

A bin Card makes records of receipt and issue of material is kept for item of stores carried. The storekeeper maintains these cards and storekeeper is answerable for any difference between the physical stocks and the balances shown in the cards. These cards are used not only but recording receipt and issues of store but also assist the storekeeper to control the stock.

For each item of stress, minimum quantity, maximum quantity and ordering quantity are stated on the cards. By seeing the Bin card the storekeeper can send the materials requisition for the purchase of materials in time.

Sample of Bin Card

Bin Card No. Bin No

Name of the Articles: Maximum quantity

Code No. Minimum Quantity

Store Ledger folio: Ordering Qty.

Date	Receipts		Issues		Balance	Date of checking	Remarks	Good on order		
	Goods rec. note no.	Qty.	Store requisition note no.	Qty.	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 cards except that receipt issues and balanced are shown with their money values. This contains an account for every time of stores and makes records of the receipt, issues and the balances, both in quantity and value. Thus, this ledger provides the information for the pricing of materials issues and the many values at nay time of each item of stores (Jain and Narayan, 1991).

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.	Rate.	Amt.	Qty.	Rate	Amt.	

2.9.5 Issued and Pricing

Each item the inventory has some value associated with it. This value depends on the pricing 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 interesting 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 tax problem.

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

When materials are issued from the storeroom on requisition, there cost is deducted from the inventory balance. Their cost is also entered in the cost accounting records of materials costs of goods in process of manufacturing suppliers issued for use in a line or stuff department are also deducted at cost from the inventory balance and are recorded as expenses of the department.

There are many method of inventory but must significance method is cost and other method is lower of cost of market. Both methods give different results.

Cost Basis for Inventory Valuation

The primary basis of accounting for inventory is cost, which has defined generally as the price paid to consideration given to acquire assets. As applied to inventories, cost means in principle the sum of the application expenditure and change directly incurred in bringing an article to its existing condition and location (AICA-1961).

Conceptually, the process of valuation the inventory is simple. We can calculate inventory value that multiplying physical quantity of goods by cost per unit. But in practice, many organization's purchase different types of raw materials at different price and different time.

It is not always possible to identify the individuals particular purchase group. At that solution firm have faced difficulties in valuation the inventories. In this situation there are many methods which are based on historical use in determining the values of inventories are:

a) **Specific Identification Methods**

The specific identification method requires that each unit in inventory be identified with the particular time, it was purchase. In this method, the item have serial numbers or are distinguishable by model, color or size to identify the particular items but items but specific stems separate at first and record in stock book. This method is more suitable to low volume high cost items such as automobiles. It is not very practical when the firm purchases large quantity of identifiable units of various time and prices.

b) Weighted Average Cost

It assumes that goods are removes from the beginning inventory and purchase group in proportion to the number of unit, in this group consequently; cost of the ending inventory also represents a proportional distribution from the beginning inventory and various purchases groups. "The weighted average cost computed by dividing the total cost of goods available for during the period" (Laughin, 1990:221).

$$\text{Weight Average Cost} = \frac{\text{Total cost of Goods Available for Sale}}{\text{Total Units available for Sale}}$$

The method is widely used by organization that hold item of inventory long period of time because it average out of the effect of price increase and decrease. In addition, weighted average process is satisfactory when there are both increase and decrease in cost with in the accounting period. Some organization used this method which purchase the inventory items frequently interval because it does not require that the ending inventory cost be associated with any particular purchase group. A common criticism of the methods is that in attaches no more significicance to current price then to price that prevailed several months earlier.

b) First in First Out (FIFO) Method

FIFO method is based on the assumption that the materials first received are the first to be issued. The materials received and changed on each invoice are changed out from the inventory are the price state on that invoice until the lot has been exhausted. Materials issues are then assumed 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 balanced of store record.

c) Last in First Out (LIFO) Method

The LIFO method of pricing is based on the assumption that the last received is the first to be issued. Materials issued from stock are changes out at the cost of the lasted shipment received until that lot is exhausted. The next issues are then made from the next order preceding, provides the materials in that order were not prevailing costs materials with the prevailing costs materials instead of with cost which may have paid for materials at a much earlier date.

d) Base Stock Method

Accounting to this method a certain quantity or base stock of material is assumed to be necessary to keep the going to be concern. The base stock is valued at the cost prevailing at the time firm began or when the method was adopted. Any additional layers materials in the inventory of close belong beyond the unit. The base may be on the basic of FIFO, weighted average etc. method.

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

2.10 Inventory Control Techniques

Inventory control or stores control, as commonly known, refers to the techniques used to ensure that stocks are kept at levels, which provides maximum services at minimum cost. The main objective of inventory control is to ensure that "Stock- Out" does not occur and that surplus stocks are not accumulated a carried. Many mathematical or statistical models with various degree of sophistication have been developed Discussion on such statistical techniques or models being outside the scope of this text, we shall only discuss some very popular and easy to understand techniques for inventory control.

Stock Levels

Stock levels are established for standardized materials, which are regularly used by the firm so that inventory holding can be controlled.

1) Re-order Level

This is the level at which shopkeeper initiated purchase requisition or replenishment order for fresh supplies of materials. Re order level takes into account the maximum usage and unexpected delay in receiving fresh supplies. The level is such that even with maximum consumption during lead-time unusual delay in replenishment, stock does not reach zero level. Re order level is calculated as below:

Re-order level = Maximum re-order period × maximum Usage

Re-order level = Minimum level or Safety Stock+(Normal usage× Lead time needed)

2) Minimum Level or Safety Stock Level

This represents the level, which the stock of particular materials touches before receipt of the fresh lot, provided the same is receiving in normal re-order period and usage is also normal during the period. Stock level is normally not allowed to fall below this level, which is considered, as buffer stock for use during emergency. Fall in stock level below the minimum level will indicate potential danger leading to stock-out position. Stock will fall below minimum level if consumption exceeds the normal consumption or re-order period exceeds the normal re-order or both these happen. Minimum stock level is computed as:

Minimum Level = Re-order Level - (normal consumption × normal re-order period)

3) Maximum Level

Stock is normally not allowed to rise above this level. Stock touches this level immediately on receipt of the fresh lot only if minimum usage occurs and delivery is received in the minimum re- order period Maximum stock level is a control indicator and if the stock exceeds this level the consumption Patten and re-order should be reviewed. Stock exceeds maximum level will lead to9 blocking of capital and unnecessary increase in inventory holding cost, both leading to wastage of scare resources which could have been put to use for other effective purpose.

Maximum Level = Re-Order Level= Re-Order Quantity-(Minimum Consumption × Minimum Order Period.

4) Average Stock Level

The level indicates the average stock held by the concern. It is calculated with the help of following formula:

$$\text{Average Stock Level} = \frac{\text{Maximum Level} + \text{Minimum Level}}{2}$$

A more commonly used method of measuring average stock level is the one involvement re-order quantity. The formula is:

Average Stock Level=Minimum Stock+ ½(Re-order Quantity)

5) Danger Stock Level

This represents the lower level, which the stock of particular materials is allowed to touch. Stock is normally not allowed to fall below this level, which is considered, as the dangerous level. Fall in stock level below the danger level will indicate a stock-out position. Danger level is computed as:

Danger Level = Maximum emergency re-order period × normal consumption

Or

Danger Level = Minimum re-order period × Average usage

2.11 Role of Inventory in Overall Planning of the Organization

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

For appropriate profit planning of organization it has to prepare different budget like sales budget, production budget, material purchase budget, materials usage budget, open to buy budget, labor budget, flexible budget, capital expenditure budget, cash budget, budget income statement, budget sheet, activity based budget, cost volume profit analysis, etc.

2.11.1 Inventory and Production Budget

Production Management deals with inventory because first thing for production is the raw materials. A firm can't achieve its goal unless inventories are controlled efficiently and capital is allocated effectively. Therefore study on inventory is the necessary thing for the company. Therefore study on inventory management is a great important.

Simply production means the creation of utilities in goods and services. The organization has to produce different goods and services mainly for production and sales. Inventory budget is one of the important components of production budget. Future is uncertain so production has to be made inventory also. Inventory has direct relationship with production budget. Without making appropriate inventories policies, the organization can't prepare production budget.

Because,

Production Budget

Sales units for the period	****
(+) Closing inventory	****
Total requirement for the period	****
(-) Opening inventory	****
Production units for the period	****

2.11.2 Inventory and Purchase Budget

In order to maintain company, co-ordination between materials usage, inventory level; of raw material and raw materials /parts purchase; the organization has to plan and control material. For this the organization has to prepare materials usage or materials consumption budget and materials purchase budget. Thus inventory has also direct relationship with materials purchase budget. The organization can't purchase materials whenever it is needed. So organization has kept sufficient stock or inventory of materials for smooth operation of the organization.

Materials Usage =Production Budget × Standard Usage rate

Material Purchase Budget

Materials usage units for the period	****
(+) Closing inventory of materials	****
Total requirement for the period	****
(-) Opening inventory of materials	****
Materials Purchase units for the period	****

Similarly, for non-manufacturing organization, it has to prepare materials purchase budget and open to buy budget.

Where,

Purchase Budget = sales + stock at the end +reduction (discount, mark up, loss on storage, damage, demurrage, water, paste, mice, obsolesces, shoplifting, etc) – stock at the beginning.

Open to Buy Budget =Stock needed-Stock available

Where,

Stock needed = Budget sales for the period + budget reduction + stock at the end-(Actual sales to date + actual reduction to date)

Stock available = Stock at the beginning + stock received today + merchandise order for the period delivery – (Actual sales to date + actual reduction to date)

2.11.3 Co-ordination between Sales, Production and Inventory

The manager must plan an optimum co-ordination between productions inventory and sales. An efficient co ordination 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 co-ordination.

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 co ordination between sales budget, essential inventory levels and production levels.

2.12 Review of the Related Studies

The earlier explanations were made on the basis of review of text books attempts were also made to review the related studies conducted on inventory management of manufacturing enterprises in Nepal.

Some studies were made in the subject of inventory management but few recent studies were review.

Puspa Raj Baral (1994) has also made study regarding *"Inventory Management; A case study of Gandaki Noodles Pvt. Ltd."*

Objectives:

- To highlight the Co.'s policies and objectives, functions and activities regarding inventory management.

Major Finding:

- He came to know that the factory is following neither economic order quantity model in its purchasing decision nor ABC analyze in inventory management.

Ram Kumar Shrestha (2004) conducted a research study *"Inventory Management of Nepal Lube Oil Limited"*. Shrestha has collected almost all data from secondary sources i.e. published/unpublished records of the company. He has also conducted inquiries and informal talk with the management head to gather primary data. The researcher used various financial and statistical approaches to analyze the gathered data.

Objectives:

- To indict the study was to identify the strength and weakness of NLOL regarding inventory management.
- To analysis on of the profitability and control of stock items of NLOL.

Major finding:

- NLOL could not use its available capacity due to top competition and liberalization policy of government of Nepal.
- Efficiency of inventory management in term of ratios is not fruitful.
- NLOL has to adopt effective service oriented strategy with marketing and distribution so that to compete with others and has to apply proper inventory control system to strengthen stock level to serve the customers in required time.

Sangit Niraula (2005) has conducted *"A Study of Inventory Management in Dairy Development Corporation, with Special Reference to Biratnagar Milk Supply Scheme"*

Objectives:

- To determine the organizational efficiency in term of inventory management.
- To identify the inventory quality maintenance process of BMSS.
- Major finding

The project is running without practice of any scientific inventory management system which has burden loss in profitability of the company.

BMMS was unable to practice optimum order quantity in material procurements.

Top level management should pay due attention to improve efficient application of inventory management to reduce procurement costs, carrying costs and production costs.

Pramod Raj Upadhyay (2007), entitled “*A Study on Inventory Management in Janakpur Cigarette Factory Limited*”

Objectives:

- To analyze the performance of JCF on the basis of demand and supply trend regarding inventory management.
- To identify the present practice of procurement of raw materials, maintenance of work in process stock and finished stock etc.

Major finding

- The factory highly dependent upon raw material suppliers; it means that the company is unable to find competitive sources of raw materials.
- The company is always facing stock out, overstock and under stock problems, it is all due to black of proper management of inventory.
- The top level management should pay attention in budgetary and financial analysis along with purchasing, production and financial aspects of inventory management to boost up the organization.

Anuja Pathak (2008) carried out a research study on “*Inventory Management of Hetauda Cement Industry Limited*”.

Objectives:

- To examine the profitability and affection HCIL regarding inventory management.
- To find out the efficiency level, investigate various inventory related factors collection of material, storage and supply.

Major Findings:

- HCIL is not running in full phase due to the material shortage.

- The company could not able to keep proper balance between yearly demands and supply so the inventory stock fluctuating every year.
- The company could not apply the inventory management system.

Dahal (2009) has carried out a research study on "*A Compare study on Inventory Management of Dabur Nepal P. Ltd. and Nepal Liver Ltd.*"

Objective:

- To examine and find out the present position of inventory management of both the companies.

Major Finding:

- The organizations taken for study use raw material from local sources, India and other countries.
- Purchasing of raw material in UNL is fluctuated whereas DNPL management of demand and supply.

2.14 Research Gap

In this globalized business age so many computerized softwares have been launched to maintain inventory management. Beside it, so many tools and techniques were introduced to optimize cost of inventories. However so many business houses are operating in Nepal and they are somehow managing their inventory system but maximum business houses are not implementing scientific inventory management system.

As stated above many studies have reported that, implementation of scientific inventory management is essential in Nepalese business organization. However, there has been very little research reported on the effectiveness of inventory management. application of scientific inventory management tools is most essential to improve the organizational effectiveness along with well trained and experienced professionals. The purpose of the present study was to explain impact on cost on account of effective use of inventory management compared to traditional inventory management.

CHAPTER - III

RESEARCH METHODOLOGY

3.1 Research Design

"A research design is the arrangement of conditions for the collections and analysis of the data in a manner that aims to combine relevance to the research purpose with economy procedure" (Kothari, 1990: 39). Research design is the plan, structure and strategy if investigation conceived. So as to obtain answers to research question and to control variances to achieve of the study, description and analytical research design have been used.

This study dealt on, "Impact of Inventory Management Practices of Unilever Limited on Profitability". Of Unilever Limited the material, WIP, finished goods and profit were the variables of the study. This study was based on primary as well as secondary data. Some simple statistical methods such as trend line and correlation analysis were used to analyze the data.

3.2 Sources of Data

In this study both primary and secondary data were used. Mainly, the followings sources were used to collect necessary information:

a. Previous studies and reports
b. Article
c. Published and unpublished official record of ULL.
d. Primary data were based on interviews as well as discussions with the officials staff of the organization.

3.3 Data Gathering Procedure

The secondary data were directly obtained from various sources mentioned above. The data were analysis are taken from officials records, websites. The researcher visited the head office of Unilever Limited and received data from the records.

For primary information, with a view of collecting the additional information, discussions with the officials were made. All the gathered data were used according to need and requirement of the study.

3.4 Presentation and Analysis of Technique and Tools

To analyze the collected facts and figures, various accounting tools were used. The techniques included were statistical tools, graphs, Karl Pearson coefficient and Correlation. And the inventory management techniques applied in this study is EOQ, different stock levels, inventory turnover ratio and ABC analysis.

3.5 Statistical Tools

Some important statistical tools were used to achieve the objective of this study. In this study, statistical tools such as coefficient analysis, standard deviation, and coefficient of variance were used.

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 were 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

Where Y = Dependent Variable
X = Independent Variable
R = correlation coefficient

Financial Tools

There are various types of financial tools that applied in order to evaluate and examine inventory management in the research process are given below:

a. ABC Analysis
b. EOQ Model
c. Ratio Analysis:
d. Different turnover ratios
e. Different Statistical tools
f. Annual percentage change

CHAPTER - IV

PRESENTATION AND ANALYSIS OF DATA

The main objective of this study was to examine the relationship among sales, purchase & inventory management of ULL on its profit. To active the said objective, collected data were analyzed by applying relevant financial tools and techniques.

On the basis of official recorded data of ULL, the researcher has tried to explain the existing problem of inventory management and cost of inventory. The researcher had made analysis of the collected data to provide the suggestions and recommendation to the ULL for further improvement in the existing inventory management system.

4.1 Relation between R/M Purchased and Total Inventory Purchased

Table 4.1

Proportion of R/M on Total Inventory

(Rs. In Million)

Fiscal Year	Raw Material	Inventory (in Rs.)	% of R/M on Total Inventory
062/63	64.06	144.46	44.34
063/64	59.2	126.11	46.94
064/65	95.28	184.22	51.72
065/66	124.53	229.76	54.19
066/67	92.94	256.17	36.28
Average	87.20	188.14	46.69

Source: Annual Report of ULL

Note i) % of R/M on Inventory = $\frac{\text{R/M}}{\text{Inventory}} \times 100$

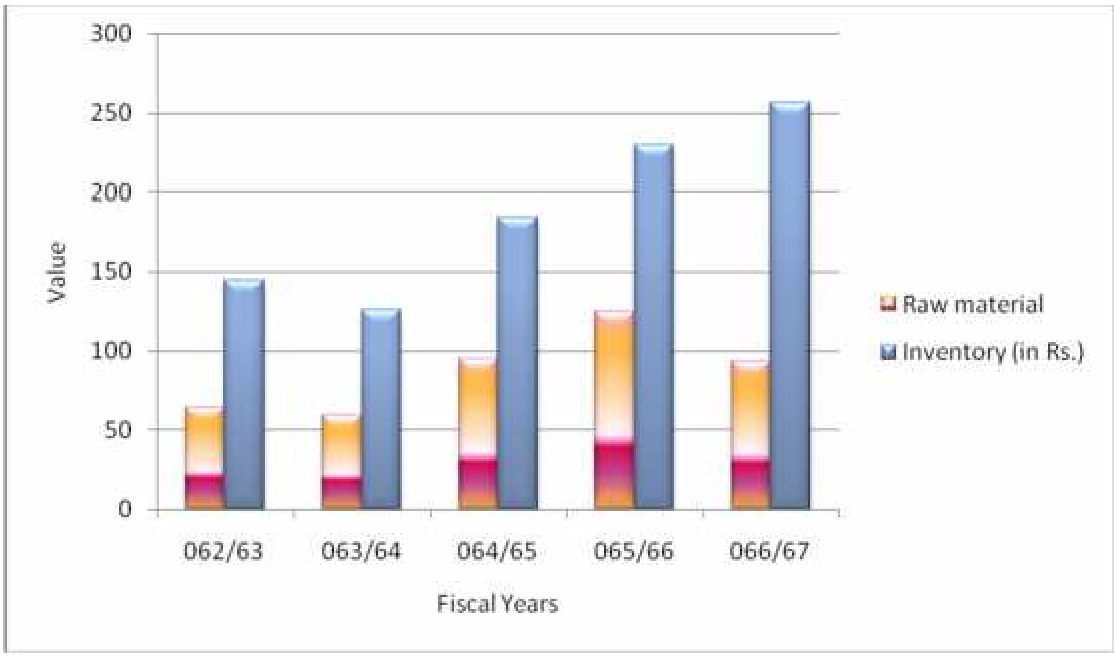
ii) Average $= \frac{\text{Sum of the Figure of Overal Study Period}}{\text{No. of Period}}$

The above table 4.1, shows that, the percentage of raw material on total inventory during the study period were 44.34% in the FY 062/63, 46.94% in the FY 063/64, 51.72% in the FY 064/65, 54.19% in the FY 065/66 and 36.28% in the FY 066/67 .

The Average inventory of the overall study period is Rs. 188.14 M, the average inventory of raw material of the overall study period is Rs. 87.20 M and the average percentage of R/M in total inventory of the overall study period is 46.69%. In the fiscal year 065/66, Nepal's political situation was slightly better than other years. So in that year use of raw materials and inventory were higher than the other years. Due to that the percentage of raw material on the total inventory is highest in comparison to the other years.

Figure 4.1

The Graphic Presentation of R/M and Total Inventory



The above analysis, shows that raw material consumption in the company is erotic. The fluctuations in stock of raw material during the study period were very high.

4.2 Relations between WIP and Total Inventory

Table 4.2

Proportion of WIP on Total Inventory

(Rs. In Million)

Fiscal Year	WIP	Total Inventory	% of WIP on Total Inventory
062/63	6.3	144.46	4.4
063/64	4.02	126.11	3.2
064/65	5.52	184.22	2.99
065/66	3.49	229.76	1.52
066/67	7.67	256.17	2.99
Average	5.40	188.14	3.02

Source: Annual Report

Note,

% of WIP material inventory on total inventory = $\frac{\text{WIP Inventory}}{\text{Total inventory}} \times 100$

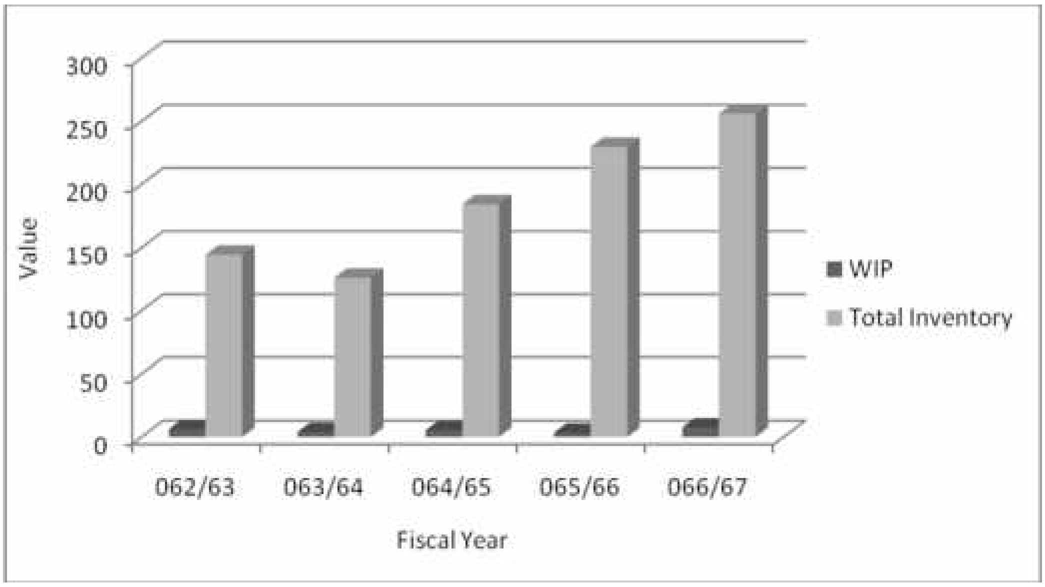
Average = $\frac{\text{Sum of the figure of overal study period}}{\text{No. of period}}$

The above table 4.2, shows that the portion of WIP material on total inventory during the study period in 4.4% in the FY 062/63, 3.2% in the FY 063/64, 2.99% in the FY 064/65, 1.52% in the FY 065/66 and 2.99% in the fiscal year 066/067.

The average percentage of WIP on the total inventory of the overall study period is 3.02%. Similarly, average inventory of the overall study period is Rs 188.14 (million), the average inventory WIP of the overall study period is Rs 5.40 Million.

Figure 4.2

The Graphic Presentation of WIP and Total Inventory



The above analysis, shows that the WIP inventory of the company is fluctuating during the study period. Such fluctuation in inventory position is not considered as good from the point of view of inventory management.

4.3 Relation between Finished Goods and Total Inventory Purchased

Table 4.3

Proportion of Finished Goods on Total Inventory

(Rs. In Million)

Fiscal Year	Finished Goods	Total Inventory	% of Finished Goods in Total Inventory
062/63	41.3	144.46	28.6
063/64	44.5	126.11	35.3
064/65	55.50	184.22	30.13
065/66	73.83	229.76	32.13
066/67	116.35	256.71	45.42
Average	66.30	188.25	34.32

Source: Annul Report of ULL.

Note:

% of Finished Goods Inventory of Total Inventory = $\frac{\text{Finished Goods Inventory}}{\text{Inventory}} \times 100$

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

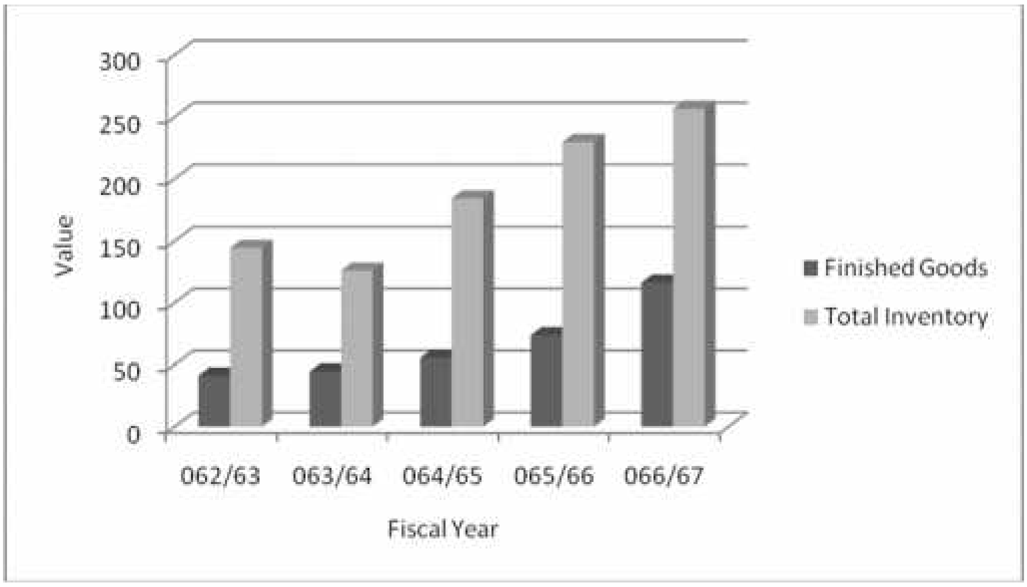
ULL has been production different kinds of products and product groups namely, detergents, toilet soap, oral care, scourers, skin creams, laundry soaps, hair care etc.

The above table 4.3, shows that the portion of finished goods a total inventory during the study period in 28.6% in the FY. 062/63, 35.3% in the FY 063/64, 30.13% in the FY 064/65, 32.13% in the FY. 065/66 and 45.42% in the FY 066/067.

When as the average percentage of finished goods inventory in total inventory in overall study period was 34.32%. Similarly, average inventory is overall study period was Rs 188.14 Million, average inventory of finished goods in overall study period is Rs 66.30 Million.

Figure 4.3

The Graphic Presentation of Finished Goods in Total Inventory



Source: Annual Report of ULL

The above analysis, shows that the production rate was increasing from the FY 062/63 to 066/67. In that period contribution raw material and packaging material was also in increasing trend. Fluctuation of demand and sales of the company are the main reason of such situations.

4.4 Relation between spare parts and total inventory purchased.

Table 4.4

Proportion of Stores and Spare Parts in Total Inventory

(Rs. In Million)

Fiscal Year	Stores and Spare Parts	Total Inventory	% of Stores and Spare Parts
062/63	11.5	144.46	7.9
063/64	6.9	126.11	5.5
064/65	6.15	184.22	3.34
065/66	4.52	229.76	1.96
066/67	6.98	256.17	2.72
Average	7.21	188.14	4.28

Source: Annual Report of ULL

Note:

i) % of stoves and spares parts on total inventory = $\frac{\text{Stores and spares in Rs.}}{\text{Total inventory in Rs.}} \; X \; 100.$

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

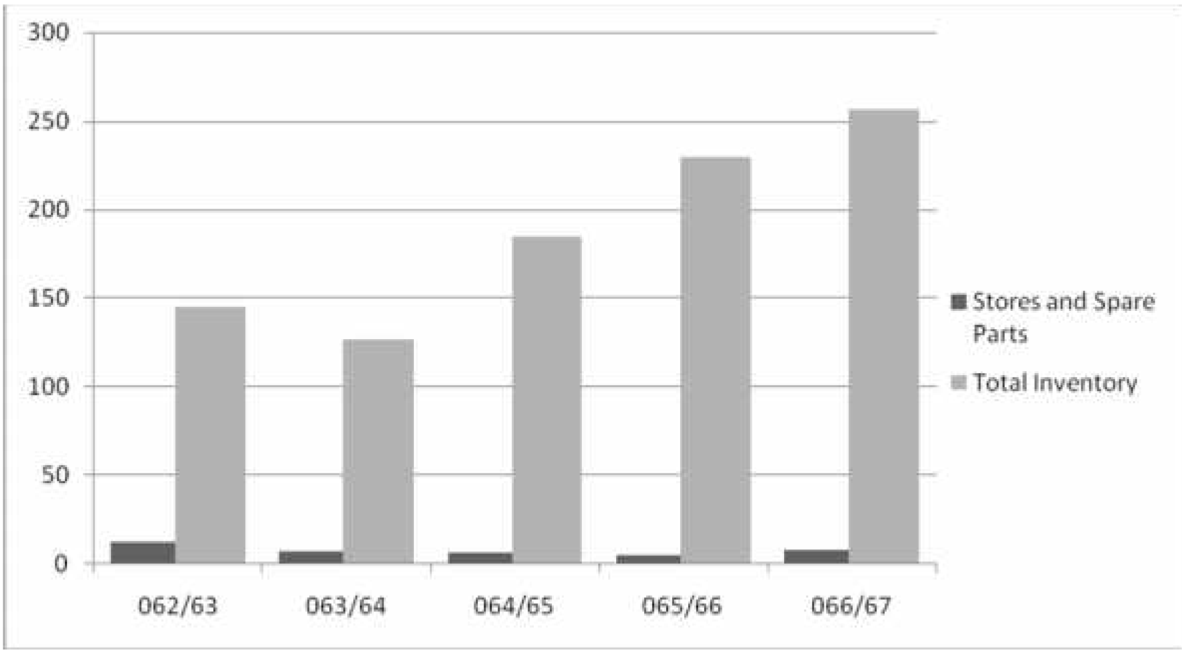
Stoves and spares parts are not directly entered production. And it facilitates the smooth production process. Stoves and spare parts are comparatively less and don't require significant investment.

The above table 4.4, shows that the portion of stoves and spare parts on total inventory during the study period is 7.9% in the FY 062/63, 5.5% in the FY 063/64, 3.34% in the FY 064/65, 1.96% in the FY 065/66 and 2.72% in the FY 066/067.

When as, the average percentage of stoves and spare parts inventory in total inventory in overall study period is 4.28%. Similarly, average inventory in overall study period is RS 188.41Million, average inventory of stores and spare parts in overall study is Rs 7.21Million.

Figure 4.4

The Graphic Presentation of Stores and Spare Parts of Total Inventory



Source: Annual Report of ULL

The above analysis shows that, the quantity of stoves and spare parts used by the company is irregular during the study period. Since the company's production is totally dependent on stoves and spare parts, it obviously fluctuates over the study period.

4.5 Relations between Sales and Inventory

Table 4.5

Inventory Turnover Ratio

(Rs. In Million)

Fiscal Year	Sales (Rs.)	Inventory (Rs.)	Inventory Turnover Ratio	% Deviation on Average Inventory Turnover Ratio
062/63	1236.05	144.46	8.56	10.45
063/64	1244.73	126.11	9.87	27.35
064/65	1524.9	184.22	8.28	6.40
065/66	1481.56	229.76	6.45	(16.77)
066/67	1434.94	256.17	5.6	(27.74)
Average	1385.44	188.14	7.75	

Source: Annual Report of ULL

Note:

i) Inventory turnover ratio = $\frac{\text{Cost of goods sold}}{\text{Average Inventory}}$

ii) The figure in brockets are negative.

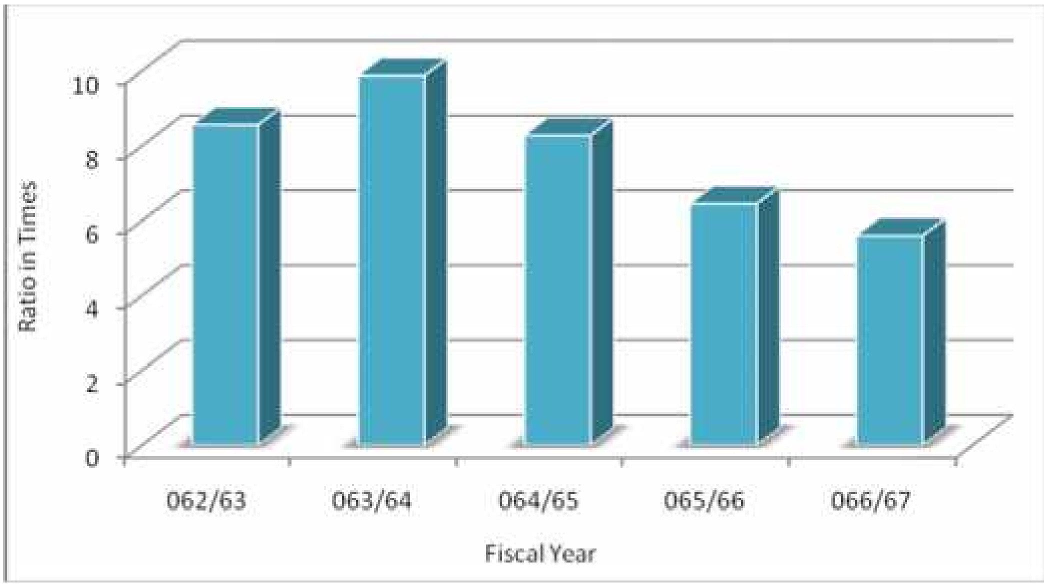
iii) % of deviation on average inventory turnover ratio =

$$\frac{\text{Inventory turnover in fiscal year - average inventory turnover ratio overall study period}}{\text{average inventory turnover ratio on in overall study period}} X\ 100$$

The above table 4.5, shows that in the FY 063/64 the inventory turnover ratio is highest i.e. 9.87 times. So, in this year low level is kept in the company due to fast consumption and sales of raw materials and finished goods. In the FY 066/67, the inventory turnover ratio is the lowest, i.e. 5.6 times. Similarly, in two years, the highest negative deviation from the average of inventory turnover ratio is (27.74%) in the FY 066/67, which indicates the show consumption of raw material or low utilization of raw material, WDP materials and low sales of finished goods.

Figure 4.5

The Graphic Presentation of Inventory Turnover Ratio



Source: Annual Report of ULL

The correlation between inventory and sales is 0.70 which is shown in Appendix 5.

Test of Significance of Correlation Coefficient

To test the significance of correlation of coefficient we can use ‘T’ statistic. Here sample size in less then 30, so we can use ‘T’ statistics.

Here, r = 0.70

T statistic = 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 statistic

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

$$= 0.70\sqrt{\frac{5-2}{1-0.70^2}} \qquad = 1.69$$

Critical Value

Now tabulated value of ‘t’ for (n – 2) i.e. 5 – 2 = 3 degree of freedom for two tail test at 5% level of significance in 2.45.

Decision: since collected $|t|$ is less then tabulated of $|t|$ at 5 degree of freedom at 5% level of significance. We reject hypothesis (H_1) which indicate that correlation coefficient between variables are not significance or ‘r’ is not significant.

4.6 Relations between Inventory and Net Profit

Table 4.6

Relations between Inventory and Net Profit

(Rs. In Million)

Fiscal Year	**Inventory**	**% Deviation on Average Inventory**	**Net Profit**	**% Deviation on Average Net Profit**	**% Net profit on inventory**
062/63	144.46	(23.21)	42.6	(69.74)	29.48
063/64	126.11	(32.97)	93.2	(33.79)	73.90
064/65	184.22	(2.08)	140.78	0	76.41
065/66	229.76	22.12	189.19	34.38	82.34
066/67	256.17	36.159	238.15	69.96	92.96
Average	188.14		140.78		

Source: Annual Report of ULL

Note:

i) % deviation on average net profit.

$$= \frac{\text{net profit in given fiscal year - average net profit in overall study period}}{\text{average net profit in overall study period}} X\,100$$

ii) % Deviation on average inventory

$$= \frac{\text{inventory in given fiscal year - average inventory in overall study period}}{\text{average inventory in overall study period}} \; X\,100$$

iii) % of Net Profit on Inventory

$$= \frac{\text{Net Profit}}{\text{Inventory}} \times 100$$

The above table 4.6 shows the relation between inventory and net profit from the FY 063/63 to 066/67. The above table shows that the average inventory during the study period is Rs 188.14 million and the average net profit during the study period is 140.78 million. Similarly the above table shows the percentage deviation of inventory and net profit over the study period. The highest positive deviation from the average inventory is 36.15% in the FY 066/67 and the highest positive deviation from the average net profit is 69.16% in the FY 066/67. Similarly, the highest negative deviating from the average inventory is (32.97%) in the FY 063/64 and the highest negative deviation from the average net profit is (69.74%) in the FY 062/63.

The percentage of net profit on inventory during the study period were 29.48 in the FY 62/63, 73.90 in the FY 63/64, 76.41% in the 64/65, 82.34% in the FY 65/66, 92.96% in the FY 66/67.

From the above analysis shows that inventory and net profit were fluctuating during the study period.

The correlation between inventory and net profit is 0.94 which is shown in Appendix-6

Test of Significance of Correlation Coefficient

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

Here, r = 0.94

Step – I, Null Hypothesis (H_0) = 0 (i.e. ‘r’ is not significant)

Step – II, Alternative Hypothesis (H_1) # 0 (i.e. ‘r’ is significant)

Step – III, Test statistic T = r - $\sqrt{\frac{n-2}{1-r^2}}$

$$= 0.94 \sqrt{\frac{5-2}{1-0.94^2}} \quad = 4.772$$

Step – IV, Critical Value:

Tabulated value of ‘t’ for n – 2 i.e. 5 – 2 = 3 degree of freedom for two test at 5% level of significance is 2.45.

Decision

Since the calculated value of $|t|$ is more than tabulated value of $|t|$ at 3 degree of freedom at 5% level of significant. So we accept alternative Hypothesis (H_1) which indicate the correlation coefficient between variables are significant or 'v' is significant.

4.7 Relations between Sales and Net Profit

Table 4.7

Relations between Sales and Net Profit

(Rs. In Million)

Fiscal Year	Sales	% Deviation On Average Sales	Net Profit	% Deviation on Average Net Profit	% of Net Profit on Sales
062/63	1236.05	(10.78)	42.6	(69.74)	3.44
063/64	1244.73	(10.15)	93.2	(33.79)	7.48
064/65	1529.9	10.42	140.78	0	9.20
065/66	1481.56	6.93	189.19	34.38	12.70
066/67	1434.94	3.57	238.15	69.16	16.59
Average	1385.44		140.78		

Source: Annual Reports of ULL

Note:

i) The figure is brackets are negative

ii) % deviation on average sales =

$$\frac{\text{sales in given fiscal year - average sales in overall study period}}{\text{average sales in overall study period}} X \ 100$$

iii) % deviation on average net profit =

$$\frac{\text{net profit in given fiscal year - average net profit in overall study period}}{\text{average net profit in overall study period}} X \ 100$$

iv) % of net profit on Sales =

$$\frac{\text{Net Profit}}{\text{Sales}} \times 100$$

The above table 4.7 shows the relation between sales and net profit for the FY 062/63 to 066/67. The above table, shows that the average sales and net profit during the study period are Rs. 1385.44 million and Rs 140.78 million respectively. Similarly, the above table shows the percentage deviation of sales and net profit over the study period. The highest positive deviation from the average sales 10.42% in the FY 064/65, and the highest positive deviation from an average net profit is 69.16% in the FY 066/67. Similarly, the highest negative deviation from an average sale is (10.78%) in the FY 062/63 and the highest negative deviating from an average net profit is (69.74%) in the FY 062/63.

The above analysis, shows that in FY 062/63 sales was Rs 1236.05 Million and in that year, the company accrued Rs. 42.6 Million profit, and from FY 063/64 to FY 064/65 sales and net profit are in increasing trend. Similarly from the FY 065/66 to 066/67 sales is in decreasing trend and net profit is in increasing trend. In the FY 066/67 sales amounted Rs. 1434.94(M) and net profit increased is to Rs 238.15 Million.

The percentage of net profit on sales during the studying period were 3.44% in FY 062/63, 7.48% in the FY 063/64, 9.20% in the FY 064/65, 12.76% in the FY 065/66 16.59% in the FY 066/67.

The correlation between sales and net profit is 0.73 which is shown in Appendix-7

Test of Significance of Correlation Coefficient

To test the significant of correlation, we can use T-test. Here sample size is less then 30. So we can use T-test.

Here, r = 0.73

Step – I, Null Hypothesis(H_0) = 0 (i.e. ‘r’ is not significant)

Step – II, Alternative Hypothesis (H_1) # 0 (i.e. ‘r’ is significant).

Step – III, Test statistic

$$T \quad = r - \sqrt{\frac{n-2}{1-r^2}} = 0.73 \sqrt{\frac{5-2}{1-0.73^2}} = 1.85$$

Step – IV, Critical Value

The tabulated value of $|t|$ for (n – 2) i.e. 5 – 2 = 3 degree of freedom for two-tail test at 5% level of significance is 2.45.

Step – V, Decision

Since calculated value of $|t|$ is less then tabulated value of $|t|$ at 5% level of significance, we reject alternative Hypothesis (H_1). The means, correlation coefficient between variable are not significant or 'r' is not significant.

4.8 Inventory Management and Control Techniques

Economic order quantity (EOQ)

The optimal level of raw material has been determined by the application of "Economic Order Quantity" model. EOQ can be calculated by using 3 methods.

i) Formula method,

ii) Tabular method (trial and error method)

iii) Graphical method.

4.8.1 Calculation of EOQ

Economic Order Quantity of Raw Material on FY 062/63

i) Formula Method

On the basis of company's records, the following data are available:

Annual requirement (A) = 17665 tons

Ordering cost per order (O) = Rs. 109094

Carrying cost per tons (C) = Rs. 1378/tons,

$$\therefore \text{EOQ} = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2\times17665\times109094}{1373}} = 1675 \text{ tons}$$

(i) EOQ = 1675 tons

(ii) $$\text{No. of order} = \frac{\text{Annual Requirement}}{\text{EOQ}} = \frac{17665}{1675} = 10.54 \text{ times} \approx 11$$

times

From the above calculation, the EOQ is 1675 tons under the formula method, which minimize the total ordering and carrying cost with the no. of order 11 times per year. Which is also clear the following tabular method.

(ii) Trial and Error Method

Trial and Error Method

No. of Order	Order Size (tons)	Average Invest (tons)	Total C. C. (Rs.)	Total O.C. (Rs.)	Total Cost (Rs.)
1	17665	8832	12126336	109094	12235430
3	3533	1766	2425267	545470	2970737
7	2523	1262	1732334	763658	2495990
10	1766	883	1212633	1090940	2303573
11	1605	802	1102394	1200034	2302428

Source: Annual Report of ULL

The above table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing number of order. The table shows the minimum total cost of R/M is Rs. 2302428 which the total carrying cost is RS 1102394 and total ordering cost is Rs. 1200024 with the no. of order is 11 times per year. So, it is clear that, if the company wants to minimize total inventory cost of R/M it should order only 11 times during the year.

So, it becomes clear from formula as well as tabular method, that the company order 1675 tons with 11times during the year.

Economic Order Quantity of Raw Material on FY 063/64

Annual requirement (A) = 17365 tons

Ordering cost per order (O) = Rs. 108472

Carrying cost per tons (C) = Rs. 1123/tons,

$$\therefore \quad \text{EOQ} = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2\times17362\times108472}{1123}} = 1831 \text{ tons}$$

(iii)EOQ = 1831 tons

(iv)No. of order $= \frac{\text{Annual Requirement}}{\text{EOQ}} = \frac{17665}{1675} = 9.48 \text{ times} \approx 9 \text{ times}$

From the above calculation, the EOQ is 1831 tons under the formula method, which minimize the total ordering and carrying cost with the no. of order 9 times per year. Which is also clear the following tabular method.

(ii) Trial and Error Method

Trial and Error Method

No. of order	Order Size (tons)	Average Invest (tons)	Total C. C. (Rs.)	Total O.C. (Rs.)	Total Cost (Rs.)
1	17362	8681	9748763	108472	9857235
5	3472	1736	1949752	542360	2492112
9	1929	964	1083196	976248	2094444
10	1736	868	974876	1084720	2059596
12	1447	723	812397	1301664	2114061

Source: Annual Report of ULL

The above table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing number of order. The table shows the minimum total cost of R/M is Rs. 2059444 which the total carrying cost is RS 1086196 and total ordering cost is Rs. 976248 with the no. of order is 9 times per year. So, it is clear that, if the company wants to minimize total inventory cost of R/M it should order only 9 times during the year.

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

Economic Order Quantity of Raw Material on FY 064/65

Annual requirement (A) = 21090 tons

Ordering cost per order (O) = Rs. 108492

Carrying cost per tons (C) = Rs. 1127/tons,

$\therefore$ EOQ = $\sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 21090 \times 108492}{1127}}$ = 2014 tons

(v) EOQ = 2014tons

(vi) No. of order = $\frac{\text{Annual Requirement}}{\text{EOQ}} = \frac{21090}{2014}$ = 10.47 times $\approx$ 10 times

From the above calculation, the EOQ is 2014 tons under the formula method, which minimize the total ordering and carrying cost with the no. of order 10 times per year. Which is also clear the following tabular method.

(ii) Trial and Error Method

Trial and Error Method

No. of Order	Order Size (tons)	Average Invest	Total C.C. (Rs.)	Total O.C. (Rs.)	Total Cost (Rs.)
1	21090	10545	11884215	108492	11992707
5	4218	2109	2376843	542460	2919303
9	2343	1171.5	1320281	976428	2296709
10	2109	1054.5	1188422	1084920	2273342
12	1758	879	990633	1301904	2292537

Source: Annual Report of ULL

The above table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing number of order. The table shows the minimum total cost of R/M is Rs. 2273342 which the total carrying cost is RS 1188422 and total ordering cost is Rs. 1084920 with the no. of order is 10 times per year. So, it is clear that, if the company wants to minimize total inventory cost of R/M it should order only 10 times during the year.

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

4.8.2 Calculation of EOQ of the FY 065/66

Annual requirement (A) = 19484 tons

Ordering cost per order (O) = Rs. 109090

Carrying cost per order (C) = Rs. 1170

By applying EOQ formula

$$\text{EOQ} = \sqrt{\frac{2Ao}{C}} = \sqrt{\frac{2\times19484\times109090}{1170}} = 1906.13 \text{ tons}$$

(i) EOQ = 1906.13 tons

(ii) No. of orders = $\frac{\text{Annualrequirement}}{EOQ} = \frac{19484}{1906.13}$ = 10.22tons

From the above calculation, the EOQ is 1906.13 tons under the formula method which minimize the total ordering and carrying cost with no. of orders 10.22 tons, which is also clear from the following tabular method.

Trial and Error Method

No. of order	Order Size (tons)	Average Invest (tons)	Total C. C. (Rs.)	Total O.C. (Rs.)	Total Cost (Rs.)
1	19484	9742	11398140	109090	11507230
5	3896.8	1948.4	2279628	545450	2825078
7	2783.42	1391.71	1628300.7	763630	2391930.7
10	1948.4	974.2	1139814	1090900	2230714
12	1623.67	811.83	949846.95	1309080	2258926.95

Source: Annual Report of ULL

The above 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 R/M is 2230714 where the total carrying cost is Rs 11,39,814 and total carrying cost is Rs. 10,90,900 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 R/M it should order 10 times during the year.

So, it becomes clear from formula as well as tabular method that the company should order 19.6.13 tons with 10 times during the year.

4.8.3 Calculation of EOQ of the FY 066/67

Annual requirement (A) = 20929 tons

Ordering cost per order (O) = Rs 107375

Carrying cost per ton (C) = Rs 1135

By applying formula,

$$EOQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 20929 \times 107375}{1135}} = 1990 \text{ tons.}$$

(i) EOQ = 1990 tons

(iii) No. of order = $\frac{\text{Annual requirement}}{EOQ} = \frac{20929}{1990}$ = 10.51 times

The above calculate, the EOQ is 1990 tons under the formula method which minimizes the total ordering and carrying cost with no. of orders 10 times which is also clear from the following tabular method.

Trial and Error Method

No. of Order	Order Size (tons)	Average Invest (tons)	Total C. C. (Rs.)	Total O.C. (Rs.)	Total Cost (Rs.)
1	20929	10464.5	11877207.5	107375	11984582.5
3	6976.3	3488.15	3959050.25	322125	4281175.25
5	4185.8	2092.9	2375441.5	536875	2912316.5
10	2092.9	1046.45	1187720.75	1073750	2261470.75
13	1609.9	804.96	913629.6	1395875	2309504.6

Source: Annual Report of ULL

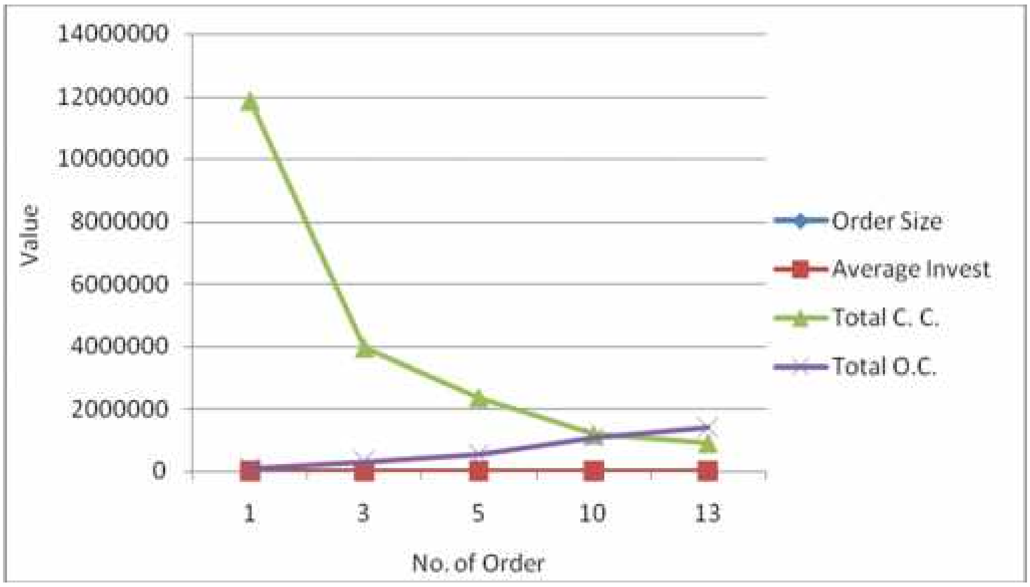
The above table shows that the carrying cost is decreasing and ordering cost is increasing with the increasing no of order. The above table shows the minimum total cost of R/M is Rs. 2261470.75 where the total carrying cost is 1187720.75 and the total ordering cost is Rs. 1073750 with the no. of order nearly 11 times per year. So it clear that if the company wants to minimize total cost of inventory of R/M it should order 11 times during the year.

Graphic Method

Under this method carrying and ordering cost are plotted in graphs and the point, where carrying cost and ordering cost is equal that quantity is taken as EOQ.

Figure 4.6

Graphic Presentation of EOQ



The above table 4.12 and figure shows the minimum carrying cost and ordering cost, which minimize the total cost. OX axis denote the no. of orders and OY axis denotes the total cost of ordering and carrying. Ordering cost is going up and carrying cost is going downward. When ordering size is increasing, the carrying cost is decreasing and ordering cost is increasing.

So, it becomes clear from the formula, tabular method as well as graphical method, the company should order 1990 tons with 11 times during the year.

4.8.4 EOQ of Inventory in Total Study Period

Table 4.8

EOQ of Inventory in Total Study Period

Fiscal Year	No or Order (Approx.)	EOQ in Tons
062/63	11 times	1675
063/64	9 times	1831
064/65	10 times	2014
065/66	10 times	1906
066/67	11 times	1990

Source: Annual Report of ULL

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

In the FY 064/65, the EOQ of inventory is high i.e. 2014 tons, while in the FY 062/63 the EOQ of inventory is very low i.e. 1675 tons. There is high fluctuation in EOQ size during the study period due to various reasons. This type of fluctuation in ordering costs is due to fluctuation in demand.

4.9 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 low investment in capital. Category A includes the most important items and recognized for special alternation. Category B includes lesser important items and category C consists of the least important and value items.

According to ABC analysis concept, the items of inventory of Unilever Ltd is categorized as A, B and C on the basis of product value and wage rate. The value items having more then Rs. One lakes per tons fall under category ‘A’. The items having value having from Rs. 50,000 to Rs. 100,000 per ton falls under category ‘B’ and the items having value to Rs. 50,000 per ton falls under category ‘C’.

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

Table 4.9

Selective Inventory Control (ABC Analysis)

Fiscal year	059-60		061-62		062-63		063-64		064-65	
Production / Categories	% of total items	% of total cost	% of total items	% of total cost	% of total items	% of total cost	% of total items	% of total cost	% of total items	% of total cost
<u>'A' items</u> Oral care, skin cream, hair care food & beverages	13.3	37.1	16.4	51	33.4	62.3	17.1	49.3	16.3	43.03
<u>'B' items</u> Toilet soaps	28.1	41	15.4	24.7	29.7	25.6	31.1	33.7	22.6	29.7
<u>'C' items</u> detergents, soap, noodles, laundry soap	58.6	21.9	68.2	24.3	36.9	12.1	51.8	17	61.1	27.2
Total	100	100	100	100	100	100	100	100	100	100

Source: Unpublished Journal of ULL

From the above table 4.14, shows oral care, skin creams, hair care, food and beverage are categorize under ‘A’. The table above shows that under a ‘A’ category, average percentage of total units is 19.3% and average percentage of total cost is 48.56% during the study period. Therefore, ‘A’ group involves largest investment and would be under tightest control by management. It should rather keep a more regards control and the most sophisticated control technique should be applied in ‘A’ items than an other items.

Toilet soap I categorized under ‘B’ item. The table 4.9 above shows that under ‘B’ items, average percentage of total units is 25.38% and average percentage of total cost is 30.94% of the overall study period. Therefore, in ‘B’ group involves normal inventory control in exercised. This ‘B’ group stands mid way. It deserves less attention than ‘A’ but more then ‘C’. It can be controlled by employing less sophisticated techniques.

Detergents, scourers, soap noodles, laundry soap are categorized under ‘C’ items. The table above shows that under ‘C’ items, average percentage of total units is 55.32% and average percentage of total cost is 20.5% of overall study period. In case of ‘C’ items, simple control will be sufficient.

4.10 Major Findings

- The percentage of raw material on total inventory during the study period were 44.34% in the FY 062/63, 46.94% in the FY 063/64, 51.72% in the FY 064/65, 54.19% in the FY 065/66 and 36.28% in the FY 066/67
- The percentage of WIP material on total inventory during the study period were 4.4% in the FY 062/63, 3.2% in the FY 063/64, 2.99% in the FY 064/65, 1.52% in the FY 065/66 and 2.99% in the FY 066/067
- The percentage of finished goods a total inventory during the study period were 28.6% in the FY. 062/63, 35.3% in the FY 063/64, 30.13% in the FY 064/65, 32.13% in the FY. 065/66 and 45.42% in the FY 066/067
- The percentage of stores of stoves and spare parts on total inventory during the study period were 7.9% in the FY 062/63, 5.5% in the FY 063/64, 3.34% in the FY 064/65, 1.96% in the FY 065/66 and 2.72% in the FY 066/067

- In the FY 063/64, inventory turnover ratio was highest i.e. 9.87 times. In the FY 066/67, the inventory turnover ratio is the lowest, i.e. 5.6 times only.
- The average inventory during the study period is Rs 188.14 million and the average net profit during the study period is 140.78 million. The percentage of net profit on inventory during the study period were 29.48 in the FY 062/63, 73.90 in the FY 063/64, 76.41% in the 064/65, 82.34% in the FY 65/66, 92.96% in the FY 066/67.
- The relation between sales and net profit for the FY 062/63 to 066/670. That the average sales and net profit during the study period are Rs. 1385.44 million and Rs 140.78 million respectively. The percentage of net profit on sales during the studying period were 3.44% in FY 062/63, 7.48% in the FY 063/64, 9.20% in the FY 064/65, 12.76% in the FY 065/66 16.59% in the FY 066/67.
- The EOQ of inventory in the FY was high i.e. 2014 tons, while in the FY 062/63 the EOQ of inventory was very low i.e. 1675 tons. There was high fluctuation in EOQ size during the study period.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

Inventory management is one of the most important functions of every organization. Without effective and efficient inventory management no organization can achieve its goal. Success of every enterprises basically depends on the efficiency and effectiveness of systematic inventory management.

Inventory constitutes most significant component in current assets. It should therefore be managed efficiently to avoid unnecessary investment. Unilever Limited is a subsidiary company of Hindustan Lever Limited. ULL produces different types of products. Selling in the market immediately after production is not possible. So this study dealt with inventory management of Unilever Limited.

This study is to examined the inventory management system practiced by the company. The carrying cost, ordering cost, order size, safety stock maintained was unsatisfactory and unscientific. It did not give attention to the lead–time. Therefore all these functions lead to increase in total cost of the company.

In this study an attempt was made to identify the inventory position of ULL, by evaluating the relationship between sales and inventories their trends, to asses the inventories and their consequences on profitability of ULL.

The study was based on secondary as well as primary data. The researcher collected necessary information though structured questionnaire distributed to the officials of ULL to fine out actual result and compared with the secondary data collected from annual reports of ULL.

All the collected data were analyzed by using EQQ model, Inventory turnover ratio, correlation coefficient, average percentage tables and figures were also used to present the relevant data. The analysis was done on year wise basis and the average figure was also obtained.

5.2 Conclusion

The inventory management of ULL is not only necessary but also compulsory for better performance of the organization. If ULL initiates steps to appropriate management of inventory, certainly it will copy its set objective successfully. This study is just a small part to fulfill the partial requirement of MBS. Concerning this finding it may be appropriate to make some suggestions and recommendations. Although this suggestion may not be enough they certainly suggests the areas that can be improve and required attenuation to bring some improvement in inventory of ULL.

From the analysis of primary and secondary data can reach in following conclusion

ULL is the subsidiary company of Hindustan Lever Ltd. withholds 80% share of ULL is to take the centralize purchasing procedure. Therefore require raw materials and work in progress is imported from HLL of India.

ULL is used the bin card techniques to control the store in order to minimize the cost of holding materials. The bin cards are maintained by store keeper.

The pricing of the issues can be determined by value as waited average cost method at the lower cost or market price.

In ULL, inventory includes raw materials, packaging materials, work in progress materials, finish goods and store and spare parts. The average percentage of RM in total inventory in the overall study period is 46.69%. The highest proportion and RM in total inventory is 54.19% in the FY 065/66, and the lowest proportion of RM in total inventory is 36.28% in FY 066/67. Therefore it is observed that raw material consumption in the company is elastics. The fluctuation in stock of RM during the study period is very high. Defective purchasing policy and poor planning of RM may be responsible factors for search fluctuation.

The average percentage of WIP materials in total inventory is 3.02%, which is low in comparison with other inventory. The highest proportion of WIP in total inventory is 4.4% in the FY 062/63. The lowest proportion of WIP on total inventory is 1.52% in the FY 065/66. The WIP materials consumptions in the company is fluctuating during the study period. Fluctuation in demand and sales of company products, lack of appropriate inventory policy and ineffective demand forecast are the main reason for such fluctuation.

The average percentage of finished goods in total inventory is 34.32%. The highest value of finish products, i.e. 45.42% is produced in the FY 066/67 as compared with the overall study period. But in the FY 064/65 and 065/66, there is decreasing trend in the production of finished goods. Fluctuation of demand and sales of the company are the main reason for such situations.

The average percentage of stores and spare parts in total inventory is 4.28%. During this study period, the quantity of stores and spare parts used by company is irregular during study period. Since, the company's production is totally dependent stores and spare parts; it obliviously fluctuates over the study period.

The average value of sales is Rs. 1385.44 millions and average value of inventory is Rs. 188.14 million. The highest positive deviation from the average inventory is 36.15% in the FY 066/67 and the highest positive deviation from the average sales is 10.92% in the FY 064/65. The highest negative deviation from average sales is (10.78) percent in the FY 062/63 and the highest negative deviation from the average inventory is 32.97% in the FY 063/64. The highest negative deviation from in net profit is (66.31%) in the FY 062/63. The correlation between sales and net profit is 0.73. It becomes clear that there is positive and low degree of correlation between sales and net profit.

The average value of inventory is Rs. 188.14 million and average value of net profit is Rs. 140.78 million. The highest positive deviation from an average net profit is 69.16% in the FY 066/67. Similarly, the highest negative deviation from an average net profit is (69.74%) in the FY 062/63. The fluctuating inventory and net profit indicates that there is no specific policy of investment on inventory. However, the level of inventory has been maintained according to the demand of products. The correlation between inventory and net profit is 0.34. So, it becomes clear that there is positive and low degree of correlation between inventory and net profit.

Inventory turnover ratio shows the relation between sales and inventory and it also shows the efficiency of inventory management. The average ITR is 8.22 times and found to be satisfactory. The highest ITR is 9.87 times in the FY 063/64, the highest negative deviation from an average of ITR is 31.87% in the FY 066/67. So in this year, low inventory is kept in the company and due to fast movement of the materials and finish goods. In the FY 065/66, the ITR is lowest, i.e. 6.45 times. Similarly, in these year the highest negative deviation from the average of ITR is (31.87%), which indicates the slow movement of the RM or low utilization of RM, WIP materials and low sales of finish goods. The correlation between inventory and sales is (0.70). So, it becomes clear that there is positive and low degree of correlation between inventory and net profit.

EOQ is not similar during the study period. In the FY 064/65 the EOQ of RM is very high i.e. 2014 tones, while in the FY 062/63 the EOQ of RM very low i.e. 1675 tones. This type of fluctuations is due to variation of ordering cost and fluctuation in demand. There is high fluctuation in EOQ size during the study period due to various reasons.

The significance of the ABC analysis reflects the concept of appropriate management of inventory. The concept states that it is uneconomical to spend the sale cost of supervision to all items. It is clearly seen under 'A' items and average percentage of total units is 19.3% and average percentage of total cost is 48.56%. Similarly, under 'B' items and average percentage of total unit is 25.38% and average percentage of total cost is 30.94%. Again under 'C' items, the average percentage of total unit is 55.32% and the average percentage of total cost is 20.5%. So it is clearly seen that the average percentage of total cost of 'B' items is comparatively high but per tone cost is less then 'A' items and more than 'C'. In order to minimize inventory cost of 'A' items should be controlled carefully and should be cared more attention then 'B' and 'C'. 'B' items lies in between 'A' and 'C' items. It requires neither careful nor simple but a moderate controlled system is adequate for this item.

The company has faced some problems on managing proper inventories in using full system because there is uncertainty about the future supply of materials, operation of factory, Nepal Bandh, lockouts, strikes, geographical problems, fluctuation of prices etc.

5.3 Recommendations

To achieve the objective of ULL, besides performing various activities the efficient inventory management is essential. The management of inventory in ULL is not only necessary but compulsory for the better performance of the company. If ULL initiates steps to make management of inventory better, it will achieve its set objectives successfully. On the basis of the study, the following suggestions will help for the betterment of ULL.

Purchasing plan should be prepared for different type of RM. Proper cooperation and coordination among the planning, purchasing, storing, production, marketing and sales department are needed to avoid excessive investment on inventory.

It is found that the company has not used EOQ model for optimal level of inventory management system. It is recommended that the order size of the inventory which minimized the total cost of inventory, i.e. ordering and carrying cost should be applied. So the company should adopt inventory management techniques.

In order to minimize inventory cost, 'A' item should be controlled carefully and should be paid more attenuation an 'B' and 'C' items. 'B' lies between 'A' and 'C' items. It requires neither careful nor simple but a moderate control system is adequate for this item.

Planning of inventory is most essential in the world today. So products of different types like personal products, oral care, different groups of soaps, detergent etc. should be produced on planned basis and attention should be given to implement better marketing strategies to take advantage of competitive ness of the product.

Specific policy on inventory should be defined and comprehensive system of inventory management should to be introduced.

Inventory should not treat as a reason for investment rather it should be planned by coordinating between sales and production.

Primary problem faced by ULL in production planning are unsuitable inventory and production policy, lack of coordination between sales and production. So the company should rearrange production and inventory policy.

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