

**INVENTORY MANAGEMENT OF MANUFACTURING INDUSTRIES
IN NEPAL: WITH REFERENCE TO HIM SHREE FOODS INDUSTRIES
PVT. LTD.**

By

**PARAG MUNAKARMI
PRITHVI NARAYAN CAMPUS
T.U. Regd. No. 7-1-297-0140-96
Campus Roll No: 63/061**

**A Thesis Submitted to:
Department of Management Research
Faculty of Management
Prithvi Narayan Campus
Tribhuvan University**

In partial fulfillment of the requirement for the Degree of Master of Business Studies (M.B.S)

**Pokhara, Nepal
July, 2011**

RECOMMENDATION

This is to certify that the Thesis

Submitted by:

PARAG MUNAKARMI

Entitled:

INVENTORY MANAGEMENT OF MANUFACTURING INDUSTRIES IN NEPAL:
WITH REFERENCE TO HIM SHREE FOODS INDUSTRIES PVT. LTD.

*has been prepared as approved by this Department in the prescribed format of the
Faculty of Management. This thesis is forwarded for examination.*

.....

Dr. Puspa Raj Sharma

Head of Research Department

.....

Mr. Bir Bahadur Karki

(Thesis Supervisor)

.....

Gehendrashwor Koirala

(Campus Chief)

VIVA-VOCE SHEET

We have conducted the viva –voce examination of the thesis presented

By

PARAG MUNAKARMI

Entitled:

INVENTORY MANAGEMENT OF MANUFACTURING INDUSTRIES IN NEPAL:
WITH REFERENCE TO HIM SHREE FOODS INDUSTRIES PVT. LTD.

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

Master Degree of Business Studies (M.B.S.)

Viva-Voce Committee

Head, Research Department

Member (Thesis Supervisor)

Member (External Expert)

Member

ACKNOWLEDGEMENT

This thesis entitled “**Inventory Management of Manufacturing Industries in Nepal: With Reference to Him Shree Foods Industries Pvt. Ltd.**” has been prepared for the partial fulfillment of the requirement of Masters Degree of Business Studies (M.B.S.) under Faculty of Management, Tribhuvan University.

I would like to extend my heartily and propounded gratitude of my respected supervisor Mr. Bir Bahadur Karki, Lecturer, Prithivi Narayan Campus, Pokhara for his incessant inspiration, guidance and support without which this thesis would not have been completed. Likewise, my sincere gratitude goes to my respected teachers of PNC for their assistance in the preparation of thesis proposal and collection of various materials and references required for the completion of this thesis.

My special thanks to all the members of Regional library of PNC and other faculty members of management in PNC for their support. I would also like to give special thanks to staff of Him Shree Foods for support and providing required information during the preparation of this thesis. I express my thanks to all of my friends for supporting me during of thesis writing.

I am much thankful to all personalities whose work and ideas have been directly or indirectly utilize in this thesis.

PARAG MUNAKARMI

TABLE OF CONTENTS

	Page
Acknowledgment	
List of Table	
List of Figure	
Abbreviations	
CHAPTER I.	INTRODUCTION
1.1	Background 1
1.2	Focus of the Study 4
1.3	Statement of Problem of the Study 4
1.4	Objectives of the Study 5
1.5	Significance of the Study 5
1.6	Limitations of the Study 6
1.7	Organization of the Study 7
CHAPTER II.	REVIEW OF LITERATURE
2.1	Conceptual and Theoretical Review 8
2.2.	Review of Related Studies 36
2.3	Research Gap 37
CHAPTER III.	RESEARCH METHODOLOGY
3.1	Introduction 39
3.2	Research Design 39
3.3	Population and Sample Size 39
3.4	Source of Data 39
3.5	Data Collection Techniques 40
3.6	Methods of Data Analysis 40
3.7	Limitation of Methodology 41
CHAPTER IV.	PRESENTATION AND ANALYSIS OF DATA
4.1	Presentation and Analysis of Data 43
4.2	Major Findings 60
CHAPTER V.	SUMMARY, CONCLUSSIONS AND RECOMMENDATIONS
5.1	Summary 62
5.2	Conclusion 63
5.3	Recommendation 64

BIBLIOGRAPHY
APPENDIX

LIST OF TABLES

Table No.	Title	Page
4.1	Proportion of Raw Materials on Total Inventory	44
4.2	Proportion of Finished Goods on Total Inventory	45
4.3	Calculation on Inventory Turnover Ratio	47
4.4	Calculation of Inventory Conversion Period	48
4.5	Annual demand of Maida	49
4.6	Trial and Error Method	51
4.7	Annual Demand of Palm Oil	52
4.8	Calculation of EOQ of Pal oil under Trial and Error Method for the year 2064/065	54
4.9	Annual Demand of Gluten	54
4.10	Calculation of EOQ of Gluten under Trial and Error Method	56
4.11	Categorization of raw materials inventory according to ABC analysis	57

LIST OF FIGURES

Figure No.	Title	Page
2.1	Graphical Approach of EOQ	24
2.2	Graphical Presentation of ABC Analysis	29
4.1	Level of Raw Materials on Total Inventory	44
4.2	Level of Finished Goods on Total Inventory	46
4.3	Annual Demand of Maida for last five years period	50
4.4	Annual Demand of Palm Oil for Last Five Years Period	52
4.5	Annual Demand of Gluten for the Last Five Years Period	55

ABBREVIATION

ABC	:	Always Better Control
AI	:	Average Inventory
EOQ	:	Economic Order Quantity
FIFO	:	First in First Out
HSF	:	Him Shree Foods
ICP	:	Inventory Conversion Period
ITR	:	Inventory Turnover Ratio
JIT	:	Just in Time
LIFO	:	Last in First Out
Ltd.	:	Limited
Pvt.	:	Private
ROL	:	Re-order Level
TC	:	Total Cost
TCC	:	Total Carrying Cost
TOC	:	Total Ordering Cost

CHAPTER 1

INTRODUCTION

1.1 Background

Nepal is a landlocked and one of the least developing country in the world, which is still in its crawling stage of industrial development. Industrialization is one of the major activities, which can play an important role in economic development of a country. More than 80% of Nepalese peoples are dependent on agriculture. Therefore it is easy to say that there is very weak participate in investment as a result, industrial activities as well as trade of business are very limited in Nepal.

For the rapid development of developing countries like Nepal, development in agriculture sector is not sufficient. It is essential to develop industrial sector too. Industries have important role to play in accelerating rate of economic development. At certain stage of country's development, the highest return may come from production of particulars types of manufactures, agriculture products and services. How to use resources at any time depends on market prospects and cost. So the interesting question is not how fast the country can be industrialized, but how incentive policies rules and regulation are designed so that new industries make the maximum contribution to the country's development. The foundation stone of modern factory system was laid only in 1992 B.S. Under the company act 1993 B.S. marked the beginning of organized industry in the country. Nepal Bank Limited was established in 1994 B.S. It is the first bank in Nepal. Under the company Act 1993 few other industries were established. Industries like Jute mills, cotton mills, match factory, sugar mills, textile, furniture, plywood factory etc were established in different sector.

As the study concentrates over inventory management study followed in Him Shree Foods Pvt. Ltd, it is necessary to know what is inventory, what types of inventory management tools are used in the company and what is the role of inventory for the smooth operation of the company and its influence on profit.

As industries are growing in number, the number of manufacturing organization is also increasing. Domestic industries are not able to meet the local demand due to

insufficient production. Hence the established company has its own production and market plan schedule. The purpose of manufacturing company is to change and to process materials which serves in different way to satisfy various requirement of human being converting the commodities into a more useful form.

The different type of materials or goods held by the company for the future use/sales is known as inventory. Inventory form a link between production and sales of product. These raw materials have been purchased and store for the future producing, work in progress refers semi-manufactured products or the stocks which are not yet completely manufacture products which are ready for sale and supplies include office and plant cleaning materials. Stock of raw materials and work in progress facilitate production, while stock of finished goods is requirement for smooth marketing operation. Thus, inventories serve as a link between the production and consumption.

Inventory constitutes the most significant part of current assets of large majority of companies. Because of large size of inventory maintained by firms, a considerable amount of fund is required to be committed to them. It is therefore, absolutely imperative to manage inventories efficiently and effectively in order to avoid unnecessary investment. A firm neglecting the management of inventories will be losing its long run profitability and may fail ultimately. Hence an optimum level of inventory should be determined in the basis of trade off between the cost benefits associated with the level of inventory. In this competitive world profit can be determined by only reducing costs. So, the cost should be minimized and production should be maximized. For strengthening the economy of the country, both the private and the public sectors should play a great role. This is realized in our context too, most of the manufacturing industries hold the large size inventory. It is possible for a company to reduce its level of inventories to a considerable degree with-out any adverse effect in production and sale by using simple inventory planning techniques.

Inventory management is a topic of considerable and wide spread interest. There are various scientific techniques to the solution of variety of inventory management. Broadly speaking the inventory management problem is one of the main concerns for a given financial investment. It is primarily concerned with minimizing the investment in

inventory. Maintaining a desired level of inventory and financial dimension, inventory should be effectively managed. The real task of top management lies in formulation policies that will lead to optimal investment for attainment of desired objectives.

Food is the essential element for human. In Nepal, no many food industries have been established since 1993-2065 starting from simple rice mills. Now a days it has developed into noodles industries. So many noodles industries are established in Nepal, one of them is 'Gandaki Noodles Industries'.

Indian fast food products had taken market before the establishment of Gandaki Noodles Pvt. Ltd. in Pokhara as well as Nepal. The idea about the instant noodles brought by Pharindra Man Shrestha for the first time in Nepal was implemented by Gandaki Noodles Pvt. Ltd. established in Magh 2039 B.S. with the initial capital of Rs. 70 millions. This was the first company to introduce tasty and easy to eat instant noodles with 'RARA' brand name.

In the year 1994 A.D., the founder of Gandaki Noodles has an interest to established seasoned noodles industry to meet the Nepalese taste. They are established another noodles manufacturing company namely Everest Noodles Pvt. Ltd. Everest noodles was well equipped and fully automatic machinery, which was able to produce seasoned noodles. The company was established with the technical know how of world famous machine manufacturing company "Suzuki Menko Company", Japan with bigger production capacity. In the beginning, it started production of seasoned noodles namely 'Aaha' and marketed successfully all over Nepal, Bhutan, North Bengal, Assam and other parts of Africa.

In the year 1999 A.D. a world famous noodles manufacturing machine was imported from Fuji manufacturing company limited, Japan with giant capacity of 150,000 packets per shift of eight hours under the name of Him Shree Foods Pvt. Ltd. This production house was established in order to meet the huge market demand of noodles with various tastes.

In the year 2002 A.D., both the previous noodles producing house Gandaki Noodles Pvt. Ltd. and Everest Noodles Pvt. Ltd. were merged, with the initial capacity of 150 millions rupees which named Him Shree Foods Pvt. Ltd. While merging the two

companies, the management also changed the founding member and formed a new board of directors.

1.2 Focus of the Study

There are many factors for success of any business. One of the important factor is the inventory management. Inventory occupies substantial capital of the company and hence effective inventory management is important for the success of the business. Inventory Management is important in manufacturing industries as these industries needs to keep inventories for smooth running of the business. To be more specify this study focus has been taken on the inventory management of Him Shree Foods Industries Pvt. Ltd.

1.3 Statement of Problem of the Study

Unscientific inventory management is one of the most important cause to effect adversely on profit. Most of the Nepalese organizations, either private or public are victim of that. Effective and efficient inventory management system can only yield expected profit of the organization. It should be balanced; both excessive and inadequate inventories are not desirable. Inventory should be in optimum level.

Especially after the restore of democracy many manufacturing industries were established under the Company Act but due to the many reasons they went into liquidation or stopped production. One of the most important reason is lack of study on effective and efficient inventory management tools and techniques for inventory control. Due to the lack of study of inventory management, huge amount of money invested in inventory. How much money should the company invested in the inventory, how much inventory to be stocked, how can minimized the inventory cost, how much is to be EOQ, how many times the order be placed are the some questions that evoke the management always.

Nepal is a landlocked country. It has to depend upon India and China for each and every thing. Industrialization in Nepal is not satisfactory as it needs to be. Manufacturing

companies facing many types of problems such as well management techniques, skilled manpower, well quality control, raw materials scarcity and out dated technology. For the noodles manufacturing industry, raw materials like palm oil, chicken soup and wrapper etc. have to be imported from India and China. Due to this it is more difficult to manage the inventories of the noodles manufacturing industry than other product manufacturing industries.

In Nepal, so many studies have been done regarding inventory management of trading organization but finger countable studies have been done about the inventory management of noodles industries. It is very important because the success of the noodles industry depends upon the well management of the inventory.

Management of every organization is working against risk and uncertainty. So, they should play vital role in deciding various decision including inventory. Over stocking of inventory increases the carrying cost and decrease the opportunity. The over stocking and under stocking of inventory can be solved with well inventory management. For long term goodwill of the company, the present research will be focused on answering the following research question.

1. Who are the authorized persons for the inventory management?
2. What is the present position of inventory?
3. How does the company maintain its stocks?
4. What types of inventory management techniques are used?

1.4 Objectives of the Study

The basic objective of this study is to analyze and examine the present position of inventory management of Him Shree Foods Pvt. Ltd. The specific objectives are as follows:

1. To analyze the present position of inventory management of the company.
2. To analyze the materials procurement techniques.
3. To find out and analyze the techniques of inventory management used by the company.

1.5 Significance of the Study

Managing of the inventory is challenging task for any noodles manufacturing industry. Inventory management is topic of considered and wide spread interest. Inventory management has been facing problem of effective handling of inventory.

Inventory management is one of the important functions of any organization. Without an effective and efficient inventory management system no one manufacturing company achieve goal. Proper inventory management helps to maximize the profit of the firm. A slight change on the cost of materials will bring about a great change in the company's profit. Each and every manufacturing organization has to closely watch the inventory activities because it is important element of the company. If the company ignores the inventory management or does not observe the inventory regularly then the company will be suffering in major trouble in production process. The importance of inventory management can be better realized by understanding the cost prize increased in purchasing, shipping, handling and storing the materials and controlling the inventories. Purchase of quality materials at economic rate and maintain adequate quantity in the stock is the prime goal of inventory management. Inventory management focused to reduce loss from misusages.

Him Shree Foods Pvt. Ltd. is one of the largest noodles manufacturing industries in Nepal, it has been producing various types of noodles in various taste according to the consumer's demand. To produce various brand and taste of noodles the industry has to face several challenges for inventory management, which is directly affected the production process. So many brand and taste has needed several types of raw materials have to be imported, stored and utilized. To handle several types of raw materials the company has to face more challenges for inventory management. So, to overcome the problems, this study is focused in analyzing the inventory management of the Him Shree Foods Pvt. Ltd. Not only Him Shree Foods Pvt. Ltd. this study will be helpful to other noodles manufacturing industries and research students.

1.6 Limitations of the Study

As every research has its own limitation, this study is not biased. The following consideration has been excluded from the study to bond the scope of the study to a certain level which is necessary.

1. This Study has been carried out for Partial fulfillment of Master's Degree, Faculty of Management; T.U. So, the time efforts and resources are major limitation of the study.
2. This study basically mentioned in the points and deal with the inventory management of Him Shree Foods Pvt. Ltd.
3. This study covers the five (5) years periodic data which includes Fiscal years 2060/061 to 2064/065.
4. The study is more specific in inventory management.
5. This study is only a case study hence the conclusion drawn from the study may not ensure wide applicability in all types of noodles industries running in different sector and situation.
6. Major portion of the analysis and interpretation have been done on the basis of available secondary data and information.

1.7 Organization of the Study

This study is organized into five (5) chapters. Each chapter has its importance and deals with important aspect of the study.

1. Introduction

The first chapter deals with introduction. This chapter includes introduction, statement of the problems, objective of the study, significance of the study, limitation of study.

2. Review of the Literature

Review of the literature means reviewing research studies or the pertinent proposition in the related area of the study so that all the past studies, their conclusion and deficiencies may be known and further research can be conducted.

3. Research Methodology

This part deals with introduction, research design, nature and sources of data, data collection techniques and method of data analysis.

4. Analysis and Presentation of Data

This part deals with presentation and analysis of data by using inventory model like EOQ, ABC Analysis, ROL and statistical tools.

5. Summary, Conclusion and Recommendation

This chapter deals about summary and findings based in the facts and analysis presented in the fourth chapter. On the basis of this study; various recommendation and suggestion also have been presented for consideration.

CHAPTER II

REVIEW OF LITERATURE

2.1 Conceptual and Theoretical Review

2.1.1 Background

The business world today is entirely different from the one in the past. Every business organization today operates in a competitive environment. In a competitive business world, firms must utilize resource in the most productive ways so that they can survive and live up to the expectation of consumers, societies, employees and the government. (Pradhan, 2004 P. 362) To use the available resources in a proper way, an organization has to plan and manage it's various organizational activities. Inventory is one of the most important item of current assets remain with any business firm which plays significant role on efficient management of the organization. Inventories form a link between production and sales of a product. A noodles manufacturing company must maintain a certain amount of inventory during producing, supply and distribution.

2.1.2 Meaning of Inventory

The stock of different types of consumable goods held by an organization is called inventory. Inventory is one of the most important assets to many organizations. Large percentage of total capital is invested in inventory. So, the inventory is vital element in the effort of the firm to achieve desired of sales.

The stock of the items of goods kept in reserve for certain period or time is called inventory. Inventory is the materials kept on hand either to make refers to the goods and or materials used by a firm for the purpose of production and sale. It is also includes the items which are used as supportive materials to facilitate production. (Weston and Copeland, 1992 P. 84)

The literacy meaning of the word inventory is stock of goods. All movable items in store either ready for sale or for consumption in the course of production with a view to convert then into finished stocks for sale. Thus, inventory includes stock of raw materials, work in progress and finished good. (Pradhan, 2004, P. 362)

The dictionary meaning of inventory is stock of goods or list of goods. Various authors understand the word inventory differently. In accounting language, it may mean stock of finished goods only. In a manufacturing concern, it may include raw materials, work in progress and store etc. To understand the exact meaning of the word inventory, we may study it from the usage side or from the side of point of entry in the operations. (Sharma and Gupta, 1984 P. 22.22)

Inventory refers to the physical stock of goods which though remain idle in a store but is essential for smooth sailing of the company and hence has economic value. (Kothari, 1996 P. 372)

According to Encyclopedia of management, “inventory is a quantity or store of goods which is held for some purpose or use inventory may be kept ‘in house’, meaning on the premises or nearby for immediate use; or in may be held in a distant warehouse or distribution center for future use. More often than not, the term inventory implies a stored quantity of goods, which exceeds that needed for the firm to function at the current time.”

Inventory is storage of goods and stocks. Items in inventories are stock keeping items held at stock point. In manufacturing company, inventory refers raw materials,

components, supplies, work in progress and finished goods. In service organization, it includes the tangible items to be sold and used for day to day operations. (Regmi, Joshi, Chaudhary and Fago 2003, P. 84)

Inventory in wider sense is defined as any idle resources of an enterprise. It is commonly used to indicate materials raw, in process and finished packaging spares and other stocked in order to meet an expected demand of distribution in the future. Even though, inventory of materials is an idle resources in sense it is not meant for immediate use, it is almost necessary to maintain some inventories for smooth function of the organizations. Inventory is made of all those items ready for sale or of items, which keeps the process running.

In fact, inventory refers to the stock of all those current assets, which are involving in production and supply of physical goods. Without adequate stock of raw materials it is impossible to maintain sufficient work in progress goods, it is impossible to maintain stock of finished goods, which are needed in future course of business. Inventories also consist of stock of spares, parts and furls etc. that will be needed in smooth operation of plants and machineries. Inventories are idle but valuable to meet future supply and demand.

Every organization, either it is service or manufacturing should maintain optimum size of inventories for the smooth operation and to meet the consumer demand. Under stock or over stock of inventories may cause increase of opportunity costs. Therefore, an organization has to implement scientific and convenient inventory control system to avoid the problems of stock out and over stock of inventories

2.1.3 Types of Inventory

Inventory is defined as a stock or store of goods. These goods are maintained on hand at or near a business's location so that the firms may meet demand and fulfill its reason for existence. If the firm is a retail establishment, a consumer may look elsewhere to have his or her needs satisfied, if the firm does not have the required item in stock when the customer arrives. If the firms are a manufacturer, it must maintain some

inventory of raw materials and work in progress in order to keep the factory running and it must maintain some supply of finished goods in order to meet demand.

The level of three kinds of inventories for a firm depends on the nature of its business. A manufacturing firm will have substantially high level of all three kinds of inventories, while a retail or wholesale firm will have a very high level of finished goods inventories and no raw materials and work in progress inventories. Within manufacturing firm there will be difference. Large heavy engineering companies produce long production cycle products. Therefore, they carry large inventories. On the other hand inventories of consumer product company will not be large because of short production cycle and fast turnover. (Pandey 1994, P. 884)

2.1.3.1 Raw Materials

Raw materials are those basic inputs, which are generally purchased from outside and are converted into finished goods through the production process.

Raw Materials are inventory items, which are used to in the manufacturer's conversion process to produce components, subassemblies or extracted materials that the firm or its subsidiary has produced or extracted himself. They may also be objects or elements that the firm has purchased from outside the organization. Even if the item is partially assembled or is considered a finished goods to the supplier, the purchaser may classify it as a raw material if his/her firm had no input its production. Typically we regard raw materials as being things such as commodities like ore, grain, minerals, petroleum, chemicals, papers, woods, paints, steels and food items. However, such items as nuts and bolts, ball bearings, key stock, casters, seats, wheels and even engines may be regarded as raw materials if purchased from outside the firm.

2.1.3.2 Work in Process

Work in process is made up of all the materials, parts (components), assemblies and subassemblies that are being processed or are waiting to be processed within the system. This generally includes all materials from raw materials that has been related for

final processing up to material that has been released for initial processed and is awaiting final inspection and acceptance before it can be included in finished goods.

Work in process refers to the inventories that have been committed to the production process but still have not been converted into finished goods. Work in process are regarded as the semi finished goods, which are still in various stage of production, where as other may be in the nearer stage of completion. Inventory that is in process at different stages of completion are also consideration to be necessary for smooth flow of regular production. (Weston and Copland 1992, P. 416)

The nature of work in process depends upon the nature of production. For example, in the Iron industries, melted iron to make different form of iron is the work in process. In the noodles manufacturing industry, there is not work in process.

2.1.3.3 Finished Goods

A finished good is a completed part that is now ready for customer order. Finished goods inventory, then it is the stock of completed products. These goods have been inspected and have passed final inspection requirements so that they can be transferred out of work in process and into finished goods inventory. From these points, finished goods can be sold directly to their user, sold to retailers, sold to wholesalers, sent to distribution centers or held on anticipant of a customer order.

Finished goods refer to inventory, which are completely passed through production process and ready for sale. Firm should hold finished goods inventories to timely satisfy the demand from customer. In the lack of sufficient finished goods, firm could not satisfy the demand when they are arise and as result of this the firm losses its customer. (Weston and Copland 1992, P 415)

Firm Carry finished goods to ensure that order can be filled when they are received. If a firm does not have finished goods inventory it would have to wait for the completion of the production process before inventory could be sold. Thus, demand could not be satisfied when it arrives. When demand arrives and there is no inventory to satisfy that demand a stock out situation exists. In such situation the firm will be in danger position of loosing the customer to competitors permanently. (Pandey 1996, P. 884)

2.1.3.4 Spare Parts and Supplies

A fourth kind of inventory spare parts and supplies is also maintained by firms. Supplies include office and plant cleaning materials like soap, brooms, oil, fuel, light, bulbs etc. These materials do not directly relate to the production but are necessary for production process.

2.1.4 Need to Hold Inventory

The basic reason to hold inventories is to keep up the production activities unhampered. It is neither physically possible nor economically justifiable to wait for the stock to arrive at the time when they are actually required. Production and delivery of goods are not instantaneous, so there is need to hold inventories so that customer may be delivered goods or services immediately. Therefore, keeping of inventories is a must for the efficient working of an industrial unit.

The question of managing inventories arises only when the company holds inventories. Maintaining inventory involves tying up of the company's fund and incurrance of storage and handling costs. If it is expensive to maintain inventories, why do companies hold inventories? These are three general motives for holding inventories.

1. Transaction Motive: Transaction Motive emphasizes the need to maintain inventories to facilitate smooth production and sales operations.
2. Precautionary Motive: It means which necessitates holding of inventories to guard against the risk of unpredictable change in demand and supply forces and other factors.
3. Speculative Motive: Which influences the decision to increase or reduce inventory levels to take advantages of price fluctuations. (Starr, Daved and Miller 1962, P. 235)

There are many benefits of holding inventory. A firm has to keep enough inventories not least. Inventories are used to provide cushions so that the purchasing,

production and sales function can proceed at their own optimum paces. In achieving the separations of these functions the firm realizes a number of specific benefits.

- Avoiding loses of sales
- Gaining quantity discount
- Reducing ordering cost
- Achieving efficient production runs. (Mohan and Goyal 1997, P. 669)

A company should maintain adequate stock of materials so that it is possible for a company to procure raw materials whenever it is needed sometimes, there exist uncertainty in procuring raw materials may be delayed because of strike transport, distribution or short supply. Therefore, the firm should maintain sufficient stock of raw materials at a given to continuous productions.

2.1.5 Inventory Management

Inventory Management is one of the aspects of production management. Production management is developed and handled by production engineer. Its specialist handles procurement. Therefore, later inventory management becomes a separate and significant management there is not only essential production approach but also need marketing management but actually inventory management is purely subject of production management. (Chary 1994, P. 387)

The inventory management is assumed to be required to maintain an adequate supply of correct materials at the lowest total cost. The responsibility of determining the material requirement implied by the marketing forecast and liaising with the purchasing department for their acquisition, receiving and storing the materials safely and in good condition for its subsequent issue and identifying surplus stock and taking action to reduce it. (Muhlemann, Dakland, Lockyer 1996, P. 384)

Inventory management provides a cushion for future price fluctuation. About 90 percent part of working capital is invested in inventories and it is necessary for every management to give proper attention to inventory management. A proper planning of purchasing, handling, storing and accounting form a part of inventory management. An

efficient system of inventory management will determine. (Sharma and Gupta 1984, P. 22.23)

- What to purchase?
- How much to purchase?
- Where to purchase?
- Where to store?

From the above definitions, we can conclude that the inventory management involves planning of the optimal level of materials i.e. raw materials, work in process goods, finished goods and supplies and spares parts etc. It includes control of relevant costs and convenient timetable for procurement with economic order size, warehousing, shipping and supply. It is staffed by trained and efficient employees and must be directed by the top level management. It involves both financial and physical dimension and these dimensions are interrelated and can be looked in isolation.

2.1.6 Objectives of Inventory Management

Inventory management is a pivotal part of profit planning for manufacturing and merchandising companies. Materials costs often account for more than 50% of the total costs in manufacturing companies and over 70% of total costs in retail companies. (Hongren 2002, P. 712)

Inventory is the most important factor to all manufacturing organization in today's world. So it is necessary to manage it properly because both situation of inventories i.e. either excessive or inadequate are not desirable to the industry. There are two danger points within which the firm should operate. The objectives of inventory management should be determined and maintained at an optimum level of inventory investment. The aim of inventory management is to avoid excessive and inadequate level of inventories of maintain sufficient inventory and efficient customer service and to centralize in investment in inventories. (Pandey 1994, P. 886)

The major danger points of excessive inventories are as follows:

- The unnecessary tie up of the firm's funds and loss of profit.
- Excessive carrying cost.
- The risk of liquidity.

The major danger points of inadequate level of inventories are as follows:

- Production hold up.
- Failure to meet delivery commitment.

The aim of inventory management thus should be to avoid excessive and inadequate level of inventories and to maintain sufficient inventory for the smooth production and sales operations. Efforts should be made to place an order at the right time with the right source to acquire the right quantity at the right price and quality. An effective inventory management should:

- Ensure a continuous supply of materials to facilitate uninterrupted production.
- Maintain sufficient stocks of raw materials in period of short supply and anticipate price change.
- Maintain sufficient finished goods inventory for smooth sales operation and efficient customer service.
- Minimize the carrying cost and time.
- Contact investment in inventories and keep it at on optimum level.

After considering all the objective of inventory management maintained above, we can say that inventory management is the life blood of an organization. So without well of inventory organization cannot flourish. (Pandey 1986, P. 904)

2.1.7 Cost Concept of Inventory

After the great depression of 1930s and before 2nd World War American company as well as world economy played by capacity utilization, material shortage, inflation and high interest rate. So, cost and balancing of cost lie heart of all production and inventory control problems.

Cost is certainly a considerable factor in purchasing, producing and maintaining inventory. Minimization of cost with the optimum uses of available resources is the basic objective of inventory management. Various factor should be composed and are applied in order to get optimum and ideal inventory to bring the least cost consequence in the company. Lack of adequate knowledge regarding inventory policies to production manager derives critical situation for economic purchase.

The goal of inventory management is to provide the inventories for sustaining operating at the lowest possible cost. The first step in inventory management is to identify all the cost. Purchasing and maintaining inventories typical cost associated with the inventories are described below:

2.1.7.1 Purchasing Cost

Purchasing costs are the costs of goods acquired from outside suppliers including incoming freight or transportation costs. These costs usually make up the largest single cost category of goods for sale. Discounts for different purchase order size and supplies creditors affects purchasing costs.

2.1.7.2 Ordering Cost

Ordering cost known as purchase cost or set up cost or procurement cost. This is the sum of fixed cost that are incurred each time an item is ordered. These cost are not associated with the quantity ordered but primarily with physical activities required to process the order. For purchase items, these would include the cost to enter the purchase order and or requisition any approval steps, the cost to process the receipt, incoming inspection, invoice processing and vendor payment, and in some cases a portion of the inbound freight.

Ordering cost increases with the number of orders, thus more frequency in inventory acquired, higher the firm's ordering cost. On the other hand if the firm maintain large inventories level there will be a few orders placed and ordering cost will be a few small. Thus, ordering cost decrease with the processing sixe of inventory.

Ordering cost are the costs of placing an order if the items are purchased from others or production set up costs if produced within the firm. Ordering cost include the costs of running a purchasing department, personal and telephone or letter writing expenses associated with placing orders and the costs of preparing specifications. Ordering cost would also include the related costs of receiving and inspecting the materials and the cost of paying invoices. Another type of ordering cost is represented by quantity discounts (negative cost), which may be available if the size of the purchase order is large enough. (Weston and Copland 1992, P. 816)

Ordering cost are normally assumed as fixed cost and stated as rupees per order. Ordering cost for the specified period is called total ordering cost. Hence, the total ordering cost for the period can be calculated as:

Total Ordering Cost (TOC) = Number of Orders x Ordering Cost per order

$$\text{Hence, TOC} = \frac{A}{Q} \times O$$

Where,

TOC = Total Ordering Cost

Q = Ordering Quantity

A = Annual Requirement

O = Ordering Cost per order

2.1.7.3 Carrying Cost

Carrying cost also called holding cost. Carrying cost is the cost associated with having inventory on hand. It is primarily made up of the cost associated with the inventory investment and storage cost.

The cost which are incurred for holding a given level of inventory are called carrying cost. They include opportunity cost of funds invested in inventory, insurance,

taxes, storage cost and cost of determination and obsolescence. It is a common practice to calculate opportunity cost of fund invested in inventories, not the interest on borrowings. Opportunity cost is the earnings foregone on the best available investment opportunities. The storage cost will comprise the cost of storage space in term of rest and depreciation on building, store handling expenses and clerical and staff service cost incurred in recording and providing special facilities such as fencing, lines, racks etc.

Carrying/ Holding Costs are incurred for keeping stock in the store. It includes rent, insurance, security, heat, light, power, taxes, theft, leakages, spoilage, maintenance and running, material-holding cost etc. “Total carrying cost generally increase in direct proportions to the average amount of inventory carried. Inventory carried in term depends upon the frequency with which orders are placed. (Weston and Brigham 2004, P. 103)

Total Carrying Cost = Average inventory x Carrying Cost per unit

$$TCC = AI \times C$$

$$\text{Or, } TCC = \frac{Q}{2} \times C$$

Where,

TCC = Total Carrying Cost

AI = Average Inventory

C = Carrying Cost per unit

Q = Quantity order

From the above definition, we can conclude that the inventory carrying costs are associated with maintaining or holding inventories. An organization has to bear various types of cost to maintain inventories; however the following description gives more clear view on inventory carrying costs.

i) Capital Opportunity Cost

Funds associated with inventories are not available for the other users. Therefore, the opportunity cost is determined by the alternative uses for the capital that would return 10% then the capital cost of the inventory is 10%.

Capital opportunity cost consist of expense of rising funds (invested of capital) to finance the acquisition of the inventory. If funds were not locked up in inventory, it would have earned return from any other business. This is the opportunity cost of fund or financial cost component of the cost. (Khan and Jain 1992, P. 128)

ii) Handling and Storage Cost

The facilities required to store an inventory produces costs such as rent, heat and light. Often storage facilities are available and have no alternative use; in that case the cost of storage are fixed and do not vary inventory; however these costs will begin to increase as more items are put in stock. At the point when storage cost begin to rise, they begin to influence decision on the optimum inventory level. The same considerations apply to handling costs. Normally, these are fixed. On occasion however, special cases arises in which the per unit handling costs fluctuate with the size of inventory. This may occur because of overcrowding, which restricts mobility, because of inefficient stocking or because less desirable warehouse space is used. (Garret and Silver 1968 P. 418)

iii) Insurance and Taxes

Since insurance costs and taxes are directly related to the total value of the inventory. So, it is also included as a part of carrying cost. Most of the goods in inventory require insurance. The cost of the insurance and taxes vary according to the size and value of inventory, because inventories often represent a significant investment of a firm's capital, conservative management practice calls for insurance protection. Naturally, the cost of insurance will vary according to the size and the value of inventory. The same is true of taxes. Some states levy inventory taxes, for example an various dates, throughout the year, the more inventory a firm has on hand on those dates the higher their tax bill will be where such taxes are in effect. Prudent inventory management may dictate periodic reduction in inventory to coincide with the dates on which the assessment are made. (Garret and Silver 1968 P. 419)

iv) Spoilage and Shortage Cost

This is another type of inventory carrying cost. When goods are kept in ware house or in storage they can be spoiled or deteriorated. Deterioration rate vary from product to product as per the nature. Whatever may be the reason of their deterioration it can be said that assets of the company will be reduced and can be termed as cost of holding inventories.

v) System Cost

Another type of inventory carrying cost which is associated with the administration of the inventory system is known as system cost. These costs are incurred for gathering information cost, supervision cost, physical stock checking cost and record keeping equipment costs. It is difficult to determine whether these examples will be high or low expect by making a comparison among actual inventory system.

2.1.7.4 Stock Out Cost

Stock out cost is associated with demand. The depletion in stock results in loss of sales or back order costs. When the sales are lost due to stock out, the firm losses both profit margin on unmade sale and firm's goodwill. If the customer uses business elsewhere, future profit margin may also be lost and back order cost is needed to convince customer to use again after inventories have been replenished. Back order cost includes loss of goodwill, money paid to re-order goods and notification to customers when goods arrive. (Adam and Ebert 2000, P. 462)

If the stock of goods goes out of stock before the demand for the product is terminated is called stock-out situation. There are two types of stock out. The first occurs if an item is not available for sale or to meet the production schedule but can be obtained through an emergency procedure. The second occurs, if the goods cannot be obtained even by emergency procedure. In this case, firms can loss profit from revenue, goodwill from the customers and even more than that.

Ordering costs, carrying cost and the stock out cost are three vital cost of maintaining inventory. Stock out cost is maintained under uncertainty as a safety stock, whereas ordering cost and carrying costs are computed under both certain and uncertain situation. Hence, the total cost of maintaining inventory under certainty is computed as:

Total Cost = Total ordering cost + Total carrying cost

$$TC = TOC + TCC$$

Hence,

$$TC = \frac{A}{Q} \times O + \frac{Q}{2} \times C$$

2.1.8 Inventory Management Technique

An efficient inventory management system facilitates smooth production activities and provides safe delivery system to customers. On other hand, excessive inventory is in idle resources for the organization and can provide costly whereas little inventory burdens production and supply problems in the organization. The quantitative approach of inventory management furnishes the basic information to control over the burden of excessive and deficit inventories. It provides both numerical and logical information to the organization to maintain optimum level of stock so as to minimize the inventory costs.

To manage its inventories effectively, a firm should use a system approach to inventory management. A system approach considers all the factors in a single model that effect the inventory. A system for effective inventory management involves sub system (Hampton 1986 P. 233)

2.1.8.1 Economic Order Quantity (EOQ)

This technique makes a balance between demand and supply of inventory. Due to the balance between demand and supply no more carrying cost will occur. Most economic point is determined by this technique.

The Economic Order Quantity is an important concept in the purchase of raw materials as well as in the storage of finished goods and in transit inventories. This technique is widely used these days in many countries irrespective of under developed or developing in nature. This technique (model) determines the optimal order quantity of an individual item of inventory, given its forecast usage, ordering level and carrying cost. Economic Order Quantity is that level of inventory order which minimize the total cost

associated with the inventory management. The cost consists of (i) Ordering Cost, (ii) Carrying Cost (Khan and Jain 1993, P. 72)

The optimum order size is the order quantity that will result in the total amount of the ordering and the holding costs being minimized. This optimum size is known as the Economic Order Quantity (EOQ).

Economic Order Quantity technique is the most important inventory control. EOQ attempts to establish the most economic balance between carrying cost and ordering cost determining the quantities to be ordered. The economic order quantity is that inventory level which minimizes the total ordering cost and carrying cost. The relationship between the ordering cost is called cost factor. To determine the optimal order quantity (EOQ) we need to know the per unit of carrying cost for one year (C), the cost of ordering (O), and the yearly demand for the product (A).

From the above definitions, we can say that EOQ as the optimum order size that will result in the lowest total cost for an item of inventory. EOQ seeks that how much inventory should be purchased in order to minimize the total costs.

Assumption of EOQ

The EOQ model, as the techniques to determine the economic order quantity, explained by us, is based on these restrictive assumptions:

1. Demand for the items is constant and uniform throughout the period.
2. The item cost doesn't vary with the order size (that is no quantity discounts).
3. Lead time (time from ordering to receipt) is constant.
4. Ordering as well as carrying at the same time (that is no order condition)

Determination of Economic Order Quantity

Economic order quantity can be calculated by using different methods. These are:

a) Mathematical/Short-cut/Formula Method

The Economic Order Quantity (EOQ) model can be used to calculate the order size that minimize total inventory cost by using mathematical method.

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

Where,

EOQ = Economic Order Quantity

A = Annual Requirement of Product

O = Ordering Cost per order

C = Carrying cost per unit

b) Trial and Error/Tabular Method

This is another approach to calculate the economic order quantity. Under this approach calculation of cost (ordering cost and carrying cost) at different order size, the economic order quantity is that inventory level which minimizes the total of ordering and carrying cost.

The trial and error method approach to find out the economic lot size can be illustrated by a simple example

Annual Requirement : 2000 units

Ordering Cost : Rs. 40 per order

Carrying Cost : Rs. 1 per unit

Required: Economic Order Quantity using trial and error method

Calculation of EOQ by using Tabular Method

Order Size (L)	2000	1000	500	400	250	200
No. of Order (A/Q)	1	2	4	5	8	10
Average Inventory (Q/2)	1000	500	250	200	125	100

Total Carrying Cost ($Q/2 \times C$)	1000	500	250	200	125	100
Total Ordering Cost ($A/Q \times O$)	40	80	160	200	320	400
Total Cost ($IV + V$)	1040	580	410	400	445	500

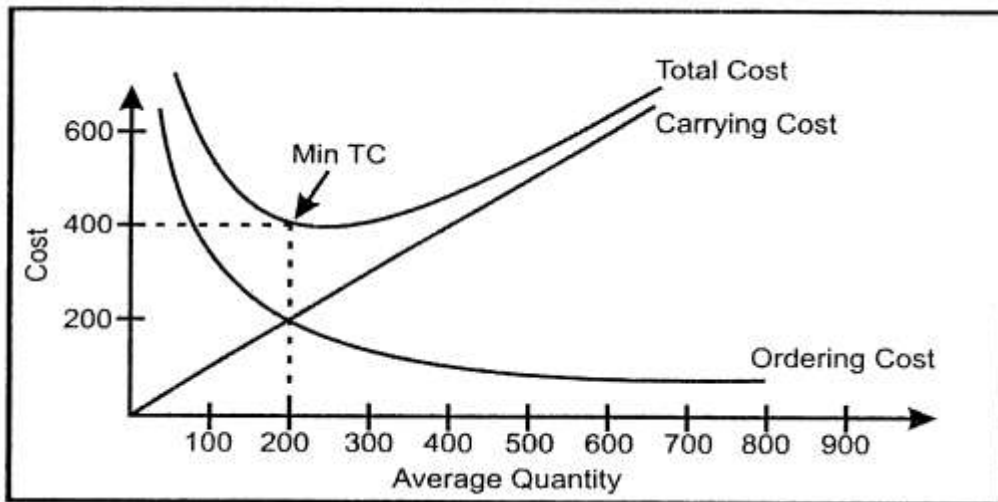
The EOQ is 400 units because the total cost is minimum where carrying cost is equal to ordering cost.

c) **The Graphical Approach of EOQ**

The economic order quantity can also be found graphically. The following figure illustrated the EOQ functions.

Figure 2.1

Graphical Approach of EOQ



In figure 2.1, vertical axis represents, carrying, ordering and total cost and horizontal axis represents the average quantity or order sizes. Total carrying cost increase as the order size increase. Because on an average a large inventory level will be maintained and ordering cost decline with increase in order size. The behavior of total cost line is noticeable since it is a sum of two types of costs that behave differently with order size. The total cost line represents the summation of both the carrying and ordering cost. Note that the total cost line is at a minimum for an average quantity of

200 units and occurs at the point where the ordering cost and point where the holding cost equal ordering cost.

2.1.8.2 Re-Order Level (ROL)

Re-order level is the point at which the storekeeper should initiate purchase requisition for fresh supply. Whenever an item of stock touches the re-order level, the purchase procedure is automatically activated so that fresh stock can be procured in time. Re-order level depends upon the lead time, rate of consumption and economic order quantity. (Munakarmi, Shiva 1999, P. 384)

The re-order point is the level of inventory at which the firm places an order in the amount of the economic order quantity. If the firm places the order when the inventory reached the re-order point, the new goods will arrive before the firm run out of goods to sell. Before computation of re-order point, some factors that are vital in calculation of re-order point should be considered.

i) Lead Time

The term lead time refers to the time normally taken in receiving the delivery of inventory after placing orders with the suppliers. Lead time may also be called as the delivery or procurement time of inventory. There is a direct relationship between lead time and inventory. As lead time increases, inventory increases correspondingly. Thus lead time is defined as the duration of the lapses between the recognition of the need for an item and its fulfillment. The lead time is obviously more in case or procedure oriented organizations, specially manufactured items, imported materials and when hand-to-mouth buying is practiced. Inventory is more if the lead time is more. Hence, it is necessary for the material manager to reduce lead time.

$ROL = \text{Lead Time} \times \text{Usage rate}$

ii) Goods in Transit

If a new order must be placed before the previous order is received, a goods in transit inventory will build up. Goods in transit are those goods that have been ordered but have not been received. (Brigham and Basely 2004, P. 434)

There will be goods in transit at the time of re-order, if the lead time is longer than the order period or ordering frequency. Goods in transit can be determined as follows:

- If the lead time is two times greater than order frequency, there will be one goods in transit.
- If the lead time is three times greater than order frequency, there will be two goods in transit and so forth.

$$\text{ROL} = (\text{Lead time} \times \text{Usage rate}) - \text{Goods in Transit}$$

iii) Safety Stock

In a normal condition re-order point was computed under the assumption of certainty. It is difficult to predict usage and the lead time accurately. The demand for material may fluctuate from day to day as from week to week. Similarly, the actual delivery time may be different from the normal lead time. If the actual usage increases or the delivery of inventory is delayed, the firm can face a problem of stock out which can prove to be costly for the firm. Therefore, in order to guard against the stock out, the firm may maintain safety stock – some minimum or buffer inventory as cushion against expected increased usage and delay in deliver time. (Pandey 1994, P. 895)

2.1.8.3 Minimum Stock Level

This is the lower limit below which the stock of any items should not normally be allowed to fall. Carrying of minimum stock avoids situation of stock out resulting in the stoppage of production. This stock is a buffer stock or safety stock to be used only under abnormal condition or in emergency. In the determination of minimum stock level, following points are taken into consideration.

- Re-order Level
- Average rate of consumption

- Average lead time-the period of time between ordering and replenishment (Re-order level)

Minimum Stock Level is determined by following formula.

Minimum Stock Level = Re-order Level – (Normal Consumption x Normal Lead Time) (Munakarmi 1999, P. 386)

2.1.8.4 Maximum Stock Level

This is the stock level about which stock should not be allowed to rise. It is an upper limit beyond which the quantity of any item is not normally allowed to rise. The maximum level is fixed by considering the following points.

- Re-order Level
- Minimum Consumption rate during lead time
- Minimum lead time or re-order period
- Re-order quantity

Maximum Stock level is determined by following formula

Maximum Stock Level = Re-order level + Re-order quantity – (Minimum consumption x Minimum re-order period)

2.1.8.5 Danger Stock level

It is the level beyond which materials should not fall in any case. If the danger level arises then immediate steps should be taken to replenish the stocks even if the most cost is incurred in arranging the materials. If materials are not arranged immediately there is possibility of stoppage of worker. Danger level of stock is determined by the following formula.

Danger Level = Average consumption x maximum emergency period

2.1.9 Perpetual Inventory System

The perpetual inventory system is the way of maintaining the record of inventory items in such a way that the stores indicate stock on hand for any time. Maintenance of regular stock records is commonly known as perpetual inventory. In fact, perpetual inventory implies a complete and updated account of each item of stores both on records and physical goods. It points out continuous day to day checking of stocks and maintenance of up to date record of stocks.

Perpetual inventory means maintenance of such records (stock control cards, bin cards and storage ledger) as will reflect the receipt, issue and balance of all items in stock at all times. The perpetual inventory system is generally supplemented by a program of continuous stock taking which ensures that physical stocks are book figures. The object of perpetual inventory record is to ensure that production is not interrupted due to want of materials to facilitate regular checking to avoid closing down for stock taking, and to provide basis for verification of physical quantity in stock. (Sharma 1984, P. 93-94)

2.1.10 Always Better Control (ABC) Analysis

Usually a firm has to maintain several types of inventories. It is impractical and impossible to control all these inventories with equal attention. The firm should therefore, classify inventories to identify which items should receive the most effort of the firm in controlling. Thus the firm should be selective in its approach to control investment in various types of inventory. This analytical approach is called the ABC approach and tends to measure the cost significance of each item of inventories. The high value items are classified as "A items" and would be under highest control. "C Items" represent relatively least value and would be under simple control. "B Items" fall in between these two categories and require reasonable attention of management. The ABC plan concentrates on importance of the relative value. This approach is also known as proportional value analysis.

The following steps are involved in implementing the ABC plan.

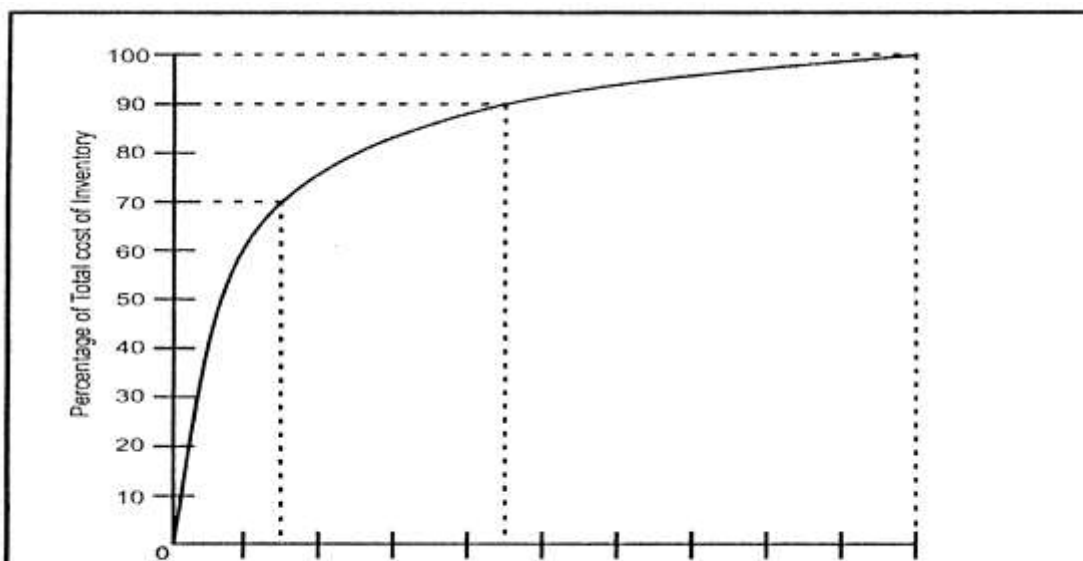
- Classify the items of inventories, determining the expected use in units and the price per unit for each item.
- Determine the total cost of each item by multiplying the expected units by its unit price.
- Rank the items in accordance with the total cost, giving first rank to the item with highest total cost and so on.
- Complete the ratios (percentages) of number of unit of each item to total units of all items and the ratio of total cost of each item to total cost of all items.
- Combine items on the basis of their relative value to form three categories A, B and C (Pandey 1979, P. 350)

A common break down of inventories according to ABC groups is given in below.

Group	Percentage of Items	Percentage of Total Annual Value of Inventories
A	10-20	70-85
B	20-30	10-25
C	60-70	5-15

Fig. 2.2

Graphical Presentation of ABC Analysis



Under the ABC classification of inventory, a firm needs to classify its inventory items on the basis of their numeric and usage value. It may be easy for small firm to classify its inventories into ABC, but it is quite complex task for the firm that holds large number of items of different usage value and different quantity.

The following points should be kept in mind for ABC analysis for better control over inventories:

- When items can be substitute for each other, they should preferably treat as one item.
- More emphasis should be given to the value of consumption and not to price per unit of item.
- All the items consumed by an organization should be considered together for classifying as A, B and C instead of taking them as spares, raw materials, semi finished and finished items and then classify as A, B and C.
- There can be more than three classes and the period of consumption need not necessarily be one year.

2.1.11 Just-in-Time Management

Just in time inventory system is one of the recently developed inventory management concept, which assume the purchase of inventory just in time of use. JIT refers to acquiring materials (inventory) as needed time only. JIT is more efficient by purchasing and storing fewer inventories. The objectives of JIT is maintain inventory as low as possible. Sometimes it may also be at zero level. Thus, JIT means that inventories are received in time or inventories are purchased in time of use. It is only possible when

suppliers are reliable and there is confidence for making delivery of goods on time. Since in JIT goods are just ordered when required, there is no time to check the quality and other. So, there should be a guarantee for supplying quality goods at time. Generally developed countries where communication and transportation systems are developed use JIT.

Advantages of Just-in-Time management:

- Just in time inventory system reduces the amount of money tied up in inventory of raw material and finished goods.
- This system creates saving of area (space)
- It does not require maintaining large inventory storage facilities.
- Just in time inventory system minimizes wastage.
- It helps to improve the labor efficiency.

2.1.12 Pricing and Issuing

The primary basis of accounting for inventory is cost, which has been defined generally as the price and consideration given to acquire assets. As applied to inventories cost means principle the sum of applicable expenditure and charges directly or indirectly in bringing an article to its existing condition and location.

Pricing the inventory is one of the most interesting and widely used subject matter in accounting process. Many organizations are interested in the various methods of pricing inventory because it has a direct effect on the net income. Inventory valuation approach is important in the aspect of income tax. One method of inventory valuation may lead to lower tax liability than other inventory valuation method. There are a number of methods, which may be employed for the inventory valuation but the most significant method is cost and other method is lower of cost or market. Both methods give different results.

Theoretically the value includes all expenses up to the point of placing materials at the processing plant. Therefore, the value includes the invoice price less trade discount, the freight, cartage and insurance on incoming materials and expenses of purchase,

receiving, storing and record keeping and carriage from the stores up to the process plant. Hence, in order to work out correct costs of job or work order, all these types of expenses should be included in the value of materials issued. However, in practice, it is a difficult task because the clerical work involved in making minute calculation for the inclusion of these expenses will be much more than the benefit derived. (Jain and Narayan 1991, P. 261)

There are a number of generally accepted methods of determining the cost of inventories at the close of the accounting period. These methods are to identify a suitable method as a basic of inventory valuation. The selection of a suitable method assumes significance in view of the fact that it has a direct bearing on the cost of goods sold and consequently on profit. Therefore, the method can be selected in the light of the probable effect on profit over a period of years. Keeping this view in mind the following methods to value inventory mentioned.

2.1.12.1 First in First out (FIFO) Method

In this method is commonly known as FIFO. The principle is that issues are priced in chronological order of the purchase and at their cost price. The materials received first are to be issued as soon as the material requisition is received. (Sharma 1984, P. 75)

This method is used under the assumption that the materials which are received first are issued first. Hence, the price of the first batch or lot purchased is charged for all issues until the stock of that batch or lot is exhausted. In other words, the issues are priced in the chronological order of receipt. In this case, issued to production/maintenance are valued at historical price and stock is valued at the latest purchase price.

FIFO is the most commonly used method for valuing inventory. It is simple to use and appear to coincide with established merchandising principle of selling the oldest items first.

2.1.12.2 Last in First out (LIFO) Method

As the name LIFO, the use of inventory is valued on the basis of the inverse sequence of receipts. The LIFO method of costing is based on the principle that materials entering production are the part of the most recently purchased. It is assumed that the most recent cost, normally replacement cost is the most significant in matching cost with revenue in the income determination. Under this, the cost of the last lot of materials received is used to price material issued until the lot is finished, then the next lot pricing is used, and so on through coming lot. This method has become popular since the procedure became acceptable method for use in determining the income taxes. Unlike weighted average in the inventory is less than the beginning inventory. In such a case, the firm must be able to identify the oldest remaining items for inventory purpose.

2.1.12.3 Standard Price Method

In this method of pricing issues is based upon a standard price for a standard price for a specific period. The standard price is a pre-determined price or national price and is not based on actual purchase price. While determining the standard price various influencing factors like quantity of purchase, quantity discount, anticipated price fluctuation and transportation cost are taken into consideration. This method is specially designed where standard costing is in vogue. The standard price for all issues is predicted at the commencement of the accounting per difference between the standard and actual price of purchase is known as material price variance and is transferred to various accounts.

2.1.12.4 Market Price Method

Under this method, materials are issued at the price at which they can be replaced, that is at the market price prevailing on the date of issue. This method could be applied principally to materials purchased in advance for use in large quantities, in anticipation of economic/ profitable use and in such items of stores, which are either absolute or lying unused for a long time in store. It reflects current cost of production and may be useful in such cases where quotations used on competition market price of materials are sent.

However, it may be difficult to ascertain current price of each item of material at the time of issue. It is also not based on actual incurred and therefore, may add confusion and complication in cost accounting.

2.1.13 Purchase Management

Purchasing means procurement of goods and services from some external agencies. In other words, purchasing means procurement of materials, parts and components to procedure desired goods and services in organization. The main objective of purchasing is to purchase or procure correct equipment, materials, parts, components and supplies in the right quantity of right quality from right origin at right time and cost.

Purchasing to a manufacturing concern is of extreme important because it has its bearing on every vital factor concerning the manufacture, i.e. quality, quantity, efficiency, economy delivery, volume of production etc. It is the scientific purchasing that can save much money, time and efforts of the management.

In a large manufacturing concern, a separate purchase department is set up with the object of regularizing all purchases. The top management lay down the purchase policy and accordingly necessary materials are purchased by the purchase department. It is the function of the purchase department to decide, what to purchase, when to purchase, from where to purchase, how to purchase and finally at what price the material should be purchased. (Sharma 1984, P. 47)

From the above definitions, we understand that purchasing management is relating with the overall organizational activities and it is influenced by various factors. Purchasing department has to tackle with all these purchasing factors to strengthen the organization's purchasing efficiency.

2.1.13.1 Objectives of Purchasing

The responsibility of the purchasing department is to buy materials of the right quality in the right quality in the right quantity at the right price from the right sources

and delivery at the right place. This is the way of starting the objective of sound purchasing management. (Gupta, P. 27)

The major objectives of scientific purchasing may be state as follows:

- To support company operation with an uninterrupted flow of materials and service.
- To develop reliable alternate sources of supply.
- To develop good vendor relationship and good continuing supplier relationship.
- To buy competitively and wisely.
- To keep inventory investment losses (due to deterioration, obsolescence and theft) at a practical minimum.
- To achieve maximum integration with the other department of the firms
- To train and develop highly competent personal who are motivated to make the firm as well as their department succeed.
- To develop policies and procedures, which permit accomplishment of the proceeding several objectives at the lowest reasonable operating cost.

2.1.13.2 Purchasing Procedure

Materials may be purchased through a centralized organization for all manufacturing centers or different producing centers may be allowed to make necessary purchase locally. However, the purchase department has to follow a set procedure for the purchase of materials. Through the form and routine may differ in some concerns depending upon the nature and requirements of the concern. (Sharma 1989, P. 47)

The purchase department follows the following procedure for purchasing necessary materials:

- Purchase requisition
- Decision for purchase
- Study of market condition and source of supply

- Selection of vendor
- Purchase order
- Follow up of order
- Receiving of materials

2.1.14 Storage

Proper storage of goods is very essential for effective production planning. Materials when received are to be properly examined, tested and kept in a proper place known as "store room". Store keeping thus may be described as physical storage of materials carried into the store room in a scientific and systematic manner with a view to (i) saving them from all kinds of damage and loss, (ii) exercising over all control over their movement. Proper storage of materials helps in minimizing production cost and providing efficient service. Proper storing of materials needs suitable classification and codification. In a large enterprise, a separate storage department is set up for efficient storing and handling of all materials received. This department is entrusted with the physical possession of materials in the organization. (Sharma 1984, P. 55)

2.1.14.1 Function of Stores Department

The store department pays very important functions in an organization. It is therefore, essential that the overall responsibility of organization and functioning of this department should be entrusted to a capable and qualified person. The following are some important functions of properly organized store department.

- Receiving of good into store
- Acts as a storage and depot for different types of goods
- Protection and preservation of materials and goods
- Proper classification and codification of materials
- Issue of materials

- Checking the invoice with materials received note and purchase order in respect of quality and quantity of materials received
- Maintains stock of materials
- Maintain proper records

2.2 Review of Related Thesis and Articles

Public and Private Manufacturing companies in Nepal deserve a crucial role for the socio economic development of our country. It enjoys a strategic and crucial position in our mixed economy. They have been established in many sectors overall development of the country with different goals and objectives. But now a day the question mark has been raised about their success. Many Public Companies convert into Private Companies and few companies were already closed.

Inventory management is a wide subject but no one pay attention in this field. Many modern techniques to control inventory management have been realized. In Nepal, many public and private enterprises have been established as well as analysis has been made nut only the aspect of financial performance. The researchers made in this area are taken into consideration for the sake of review to examine how inventory management system is practiced in Him Shree Foods Industry Pvt. Ltd. An attempt is made to review some of the researchers, which have been submitted in inventory management in the context of Nepal.

Mr. Deepak Raj Tiwari (2061) carried out a study on the topic "A Study on Inventory Management of Salt Trading Corporation Limited". The objectives of the study were to analyze the performance of corporation on the basis of selling and cost price of inventory, to analyze inventory turnover ratio, to identify the present practice of procurements of various inventories, to reveal the goods purchasing policy, to compare between profit and purchasing cost of various inventories and analyze the present inventory position of the corporation. During the study, he has found that the selling price and the cost price of the products are in increasing trend. Due to the traditional marketing, corporation can not earn target profit, EOQ Model is not followed while

purchasing, the margin of safety stock, maximum stock and minimum stock level is only in paper not in practice, investment on inventory stock is in large quantity due to defective purchasing policy. The inventory turnover ratio is satisfactory.

He has recommended to the corporation, EOQ model should be applied while purchasing, should extent its hand to rural areas, should have prepare purchase plan and sales playing strategies.

Saru, Ram Kumari (2064) carried out the study on the topic "Planning and Controlling of Inventory of Manufacturing Industries (Gosheli House)". The basic objective of study were to identify the authorize person for inventory planning and controlling, to analyze the tools used in planning and controlling of inventories, to analyze the materials purchasing techniques, to analyze the inventory turnover ratio of Gosheli Packaging House. During the study she found that the top level management has not paying more attention to make inventory planning and controlling. No separate section of purchasing, production and sales department, no preparation of complete inventory planning, diversified purchasing methods are used to procure materials, the company has not determine EOQ, ROL, maximum and minimum stock level while purchasing and sale, FIFO method have applied for the inventory issued and use, perpetual inventory system is adopted, inventory turnover ratio is not satisfactory.

She has recommended to the company's top level management should paying more attention to prepare the planning and controlling of inventories policies, should have .prepare purchase budget, should have follow the scientific tools and techniques for inventory planning, inventory should be classified according to ABC system.

2.3 Research Gap

The purpose of this research is to develop some expertise in one's area, to see what new contribution can be made and to receive some ideas, knowledge and suggestions in relation to inventory management of Him Shree Foods Industries Pvt. Ltd. Here, it is clear that the new research cannot be found on that exact topic, i.e. Inventory Management of Manufacturing Industries in Nepal: With Reference to Him Shree Foods

Industries Pvt. Ltd. Therefore, to fulfill this gap, this research is selected. To complete this research work: many books, journals, articles and various published and unpublished dissertations are followed as guideline to make the research easier and smooth. Previous researchers could not cover all the aspects of inventory management of Him Shree Foods Industries Pvt. Ltd. The previous studies can't be ignored because they provide the foundation to the present study. In other words, there has to be continuity in research. This continuity in research is ensured by linking the present study with the past research studies.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is a systematic means of solving the research problems. It is the process of arriving at the problem through the planned and systematic dealing with collection, analysis and interpretation of facts and figures. Science the basic objective of this study is the inventory management system of Him Shree Foods Pvt. Ltd. in Pokhara. So, suitable research methodology as demanded by the study is followed.

3.2 Research Design

This study is based on a case study research design. Case Study research design describes in general pattern about the choosen field and five years data of Him Shree Foods Pvt. Ltd. are collected and analyzed using various management and accounting tools and presented on the table and charts.

3.3 Population and Sample Size

This study is a case study. Therefore, total population and sample size is not taken mention, however convenience sample method is used for selection of a study unit.

3.4 Source of Data

For the reliability and effectiveness of research work, true and fact information are necessary because information are the life blood for any research. In this study both the primary and secondary data has been used. The primary data are collected from questionnaire, personal interviews as well as unstructured dialogues and discussions with staff of Him Shree Foods Pvt. Ltd. The secondary data are collected from the office records, previous studies and reports, office records, published and unpublished brochures, smarika and annual reports etc.

3.5 Data Collection Techniques

The most important part of the research is data gathering procedure. It consists of obtaining information from somebody's hands. So, it is therefore very difficult activity of the whole research process. Researcher has to make frequent visits to company in order to collect the required data.

The required data are collected in a period of about two months through the various techniques. Primary data are collected from observation, informal interaction and dialogues and structured questionnaire with the selected respondents. Secondary data are collected from the office records, previous studies and reports, office articles, published and unpublished brochures, smarika and annual reports etc

3.6 Methods of Data Analysis

The data are collected from various sources. The data are managed, analyzed and presented in the proper tabular, percentage and bar diagram formats. To achieve the objectives of the study various tools and techniques like EOQ, ABC analysis, ITR and ICP are applied.

Economic Order Quantity (EOQ) is that level of inventory order which minimize the total cost associated with the inventory management. EOQ can be determined by the following methods:

- a. Mathematical/Short-cut/Formula Method:** EOQ can be calculated by below formula:

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

Where, EOQ = Economic Order Quantity

A = Annual Requirement of Product

O = Ordering Cost per order

C = Carrying Cost per unit

b. Trial and Error/Tabular Method: Under this approach calculation of cost (ordering cost and carrying cost) at different order size, the economic order quantity is that inventory level which minimizes the total of carrying cost.

c. The Graphical Approach of EOQ

ABC Analysis classifies inventories to identify which items should receive the most effort of the firm controlling. The high value items are classified as “A items” and would be under highest control. “C items” represent relatively least value and would be under simple control. “B items” fall in between these two categories and require reasonable attention of management.

Inventory Turnover Ratio (ITR) shows the relationship between the cost of goods sold and average inventory or net sales and closing inventory. ITR shows how quickly inventory can be sold.

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Good Sold}}{\text{Average Inventory}}$$

Or

$$\frac{\text{Sales}}{\text{Closing Inventroy}}$$

Cost of Goods Sold = Purchase + Opening Stock + Direct Expenditure- Closing Stock.

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

Inventory Conversion Period (ICP) indicates the number of days to complete raw materials into finished goods.

Inventory Conversion Period = Days in a year X Inventory Turnover Ratio

3.7 Limitation of Methodology

This research is done for the fulfillment of the requirement for the degree of Master of Business Studies (M.B.S). There is limitation of resources and time. This study

has to be completed in framed limited time. This study is based on the available information and used the methods that have been formulated for inventory management.

This study is focused on the basic purpose of the study which is inventory management in Him Shree Foods Industries Pvt. Ltd. Formulas formulated and tested have been used in the assumption that it is idle for the condition of Him Shree Foods Industries Pvt. Ltd. Information has been tried to gather being more focus on the formulae to be used for the presentation and analysis of the study. Major finding are based on the use of accounting tools and techniques i.e. EOQ, ABC Analysis, Inventory Turnover Ratio (ITR) and Inventory Conversion Period (ICP).

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Background

The main objective of this study is to examine the existing position of inventory Management. Mainly this chapter contains two major sections. Data presentation and Analysis which are collected from primary source i.e. questionnaire, informal interview and secondary source i.e. annual report, published and unpublished brochures, office records etc. Graphical presentation such as bar diagram, tabular forms etc. are presented wherever appropriate in the first part. In the second part major findings are present, which are from the first part.

The firm should maintain a sound inventory position to run its business operation in this competitive world. Both excessive as well as inadequate inventory positions are dangerous from the firm's point of view. So, management should maintain appropriate inventory position to meet its objectives.

The basic objectives of this study are to analyze the present position of inventory of Him Shree Foods Pvt. Ltd. In order to achieve this objective collected data are represented and analyze in this section.

4.1 Presentation and Analysis of Data

4.1.1 Present Inventory Position of Him Shree Foods

The present inventory position of Him Shree Foods Pvt. Ltd. can be analyzed as follows:

4.1.1.1 Proportion of Raw Materials on Total Inventory

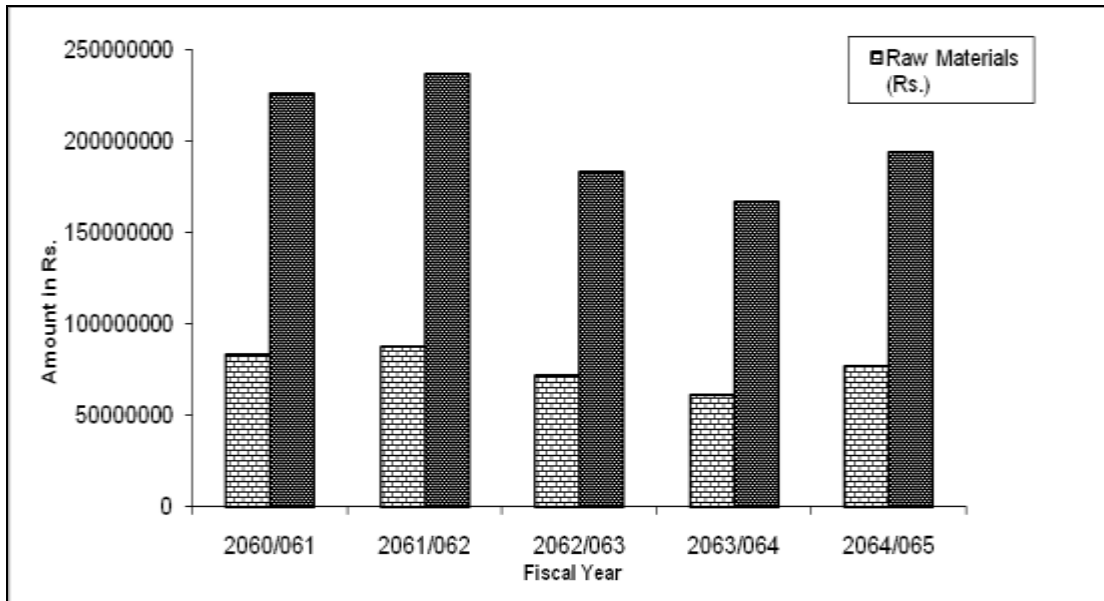
Raw Materials is major factor in any manufacturing company. It takes major portion of inventory. The major raw materials used by the Him Shree Foods Pvt. Ltd. are maida, Palm oil, Palmolien, Noodles Wrapper, soup wrapper, Bulletin, Soup powder etc. The value of raw materials is in monetary form to analyze. Last five-years raw materials position of Him Shree Foods Pvt. Ltd. presented as follows:

Table 4.1
Proportion of Raw Materials on Total Inventory

Fiscal Year	Raw Materials (Rs.)	Total Inventory (Rs.)	% of Finished Goods on total Inventory
2060/061	83,551,175	226,142,361	36.95
2061/062	88,126,268	237,475,929	37.15
2062/063	72,175,710	183,245,225	38.89
2063/064	61,189,008	166,874,860	36.66
2064/065	77,250,389	194,239,452	39.77
Total	381,392,550	1,007,977,827	-
Average	76,278,510	201,535,565	37.88

Source: Office Records of HSF

Figure 4.1
Level of Raw Materials on Total Inventory



From study of figure 4.1, the value of raw materials, from the fiscal year 2060/061 to 2064/065 are Rs. 83,551,175, Rs. 88,126,268, Rs. 72,175,710, Rs. 61,189,008 and Rs. 77,250,389 respectively. So, on total value of inventory from the fiscal year 2060/061 to 2064/065 are Rs. 226,142,361, Rs. 237,175,929, Rs. 183,245,225, Rs. 166,874,860 and Rs. 194,239,452 respectively.

The maximum use of raw materials in the fiscal year 2061/062 is Rs. 88,126,268 which covers the 37.15% of total inventory and the minimum use of raw materials in the fiscal year 2063/064 is Rs. 61,189,008 which covers the 36.66% of total inventory. The average use of raw materials and total inventory is Rs. 76,278,510 and Rs. 201,535,565 respectively which is 37.88% of total raw material on total inventory uses.

From the above figure 4.1 the proportion of raw materials in total inventory is increasing in 2061/062, 2062/063 comparatively but decreasing in the fiscal year 2063/064 and increasing in the fiscal year 2064/065.

4.1.1.2 Proportion of Finished Goods on Total Inventory

Finished goods inventory is valuable assets of every industries. It is required for the smooth operation of marketing. The packed noodles are the finished product of Him Shree Foods Pvt. Ltd. which named RARA, Aaha, Fewa. The value of finished goods are presented below from the fiscal year 2060/061 to 2064/065.

Table 4.2

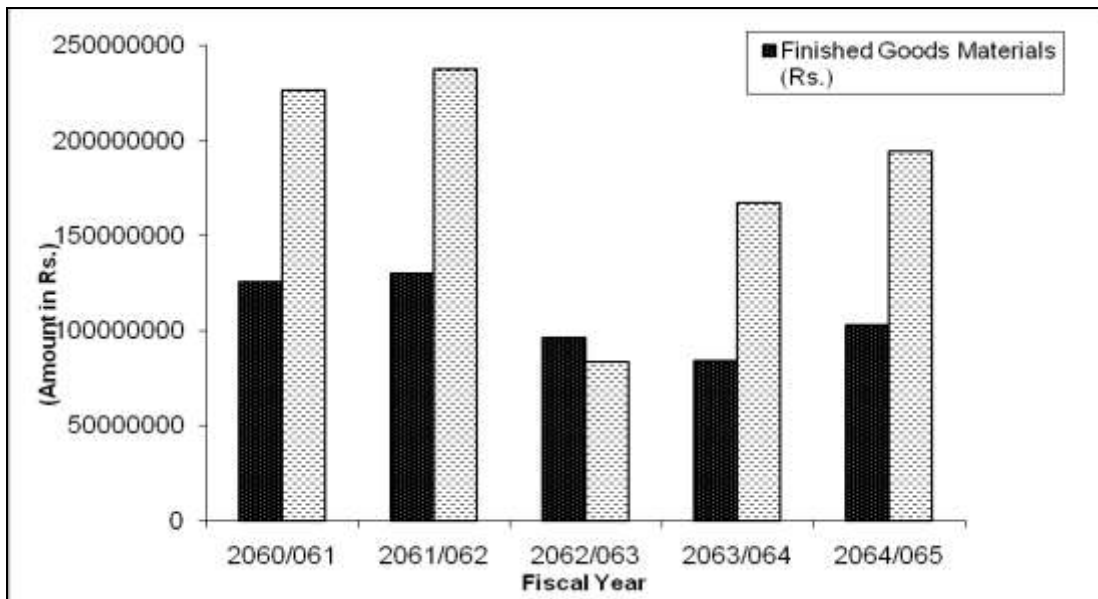
Proportion of Finished Goods on Total Inventory

Fiscal Year	Finished Goods Materials (Rs.)	Total Inventory (Rs.)	% of Finished Goods on total Inventory
2060/061	125,501,274	226,142,361	55.49
2061/062	129,732,459	237,175,929	54.69
2062/063	96,088,982	83,245,225	52.44
2063/064	83,885,447	166,874,860	52.96
2064/065	102,752,863	194,239,452	52.90
Total	537,961,025	1,007,677,827	-
Average	108,492,205	201,535,565	53.83

Source: Office Records of HSF

Figure 4.2

Level of Finished Goods on Total Inventory



From study of figure 4.2, the value of finished goods inventory from the fiscal year 2060/061 to 2064/065 are Rs. 122,501,274, Rs. 129,732,459, Rs. 96,088,982, Rs. 88,385,447 and Rs. 10,272,863 respectively. So on the total value of inventory from the

fiscal year 2060/061 to 2064/065 are Rs. 226,142,361, Rs. 237,175,929, Rs. 183,245,225, Rs. 166,874,860 and Rs. 194,239,452 respectively.

The maximum value of finished goods inventory is Rs. 129,732,459 in the fiscal year 2061/062 which covers the 54.69 percent of total inventory and the minimum value of finished goods inventory in the fiscal year 2063/064 is Rs. 88,385,447, which covers the 52.96 percent of total inventory. The average value of finished goods for five years is Rs. 108,492,205, which covers the 53.83 percent of total average inventory.

From figure 4.2, the proportion of finished goods on total inventory is decreasing the fiscal year 2062/063 but slightly increasing in year 2063/064 and again decreasing in the following year.

4.1.2 Calculation of Inventory Turnover Ratio

Inventory turnover ratio shows the relationship between the cost of goods sold and average inventory or net sales and closing inventory. It measures the efficiency on inventory management and how quickly inventory can be sold. It shows the speed with which stock rotated into sales. In general, high inventory turnover ratio is better than low inventory turnover ratio. A high inventory turnover ratio indicates the efficient inventory management.

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Good Sold}}{\text{Average Inventory}}$$

Or

$$\frac{\text{Sales}}{\text{Closing Inventory}}$$

Cost of Good Sold = Purchase + Opening Stock + Direct Expenditure - Closing Stock.

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

Due to unavailability of proper data, here the model sales by closing inventory is used to calculate the inventory turnover ratio.

Table 4.3

Calculation of Inventory Turnover Ratio

Fiscal Year	Sales (Rs.)	Closing Stock	Inventory Turnover Ratio
2060/061	125,501,274	4,557,281	27.54
2061/062	129,732,459	8,703,816	14.91
2062/063	96,088,982	1,900,658	50.55
2063/064	88,385,447	1,691,376	22.31
2064/065	102,752,863	3,491,283	29.43
Total	542,461,025	3,491,283	-
Average	108,492,205	698,256	28.95

Source: Office Records of HSF

As indicated in table 4.3, the inventory turnover ratios from the fiscal year 2061/062 to 2064/065 are 27.54, 14.91, 50.55, 22.31 and 29.43 times respectively. On the study of above table the inventory turnover ratios were fluctuate in five years period. The highest inventory turnover ratio is 50.55 times in the year 2062/063 and lowest inventory turnover ratio is 14.91 times in the year 2061/062. The average sales of the Him Shree Food Pvt. Ltd. was Rs. 186,185,188 for last five years and average inventory turnover ratio is 28.21 times which is satisfactory.

4.1.3 Inventory Conversion Period

Inventory Conversion Period indicates the number of days to complete the raw materials into finished goods. The least inventory conversion period, the more efficient the firms inventory management and the longer inventory conversion period, the less efficient the firms inventory management. To assess the inventory efficiency the study evaluate the inventory conversion period as follows:

Table 4.4

Calculation of Inventory Conversion Period

Fiscal Year	Days in a year (No. of working days)	Inventory Turnover Ratio	Inventory Conversion Period (days)
2060/061	300	27.54	10.89
2061/062	300	14.91	20.12
2062/063	300	50.55	5.93
2063/064	300	22.31	13.44
2064/065	300	29.43	10.19
Total	1500		60.57
Average	300	28.95	10.36

Source: Office Records of HSF

As indicated in table 4.4, the inventory conversion periods from the year 2060/061 to 2064/065 were 10.89 days, 20.12 days, 5.93 days, 13.44 days and 10.36 days respectively.

The highest inventory conversion period was in the year 2061/062 which is 20.12 days and lowest inventory conversion period was in the year 2062/063 which is 5.93 days. It shows that inventory conversion periods were fluctuating in last five years period. The average working days of HSF were 300 days and 10.36 days was the inventory conversion period for the last five years.

4.1.4 Determination of Economic Order Quantity

To calculate EOQ, only raw materials are considered. Him Shree Foods Pvt. Ltd. has used various types of raw materials, which includes maida, palm oil, palmolien, Gluten, Soup powder, MSG, Guargamn etc. To calculate the EOQ for each and every item is difficult and lengthy process. Therefore EOQ of major raw materials like Maida, Palm Oil, Gluten have been shown as follows:

4.1.4.1 Annual Demand of Maida

Annual demand of maida for last five years period has been given below.

Table 4.5

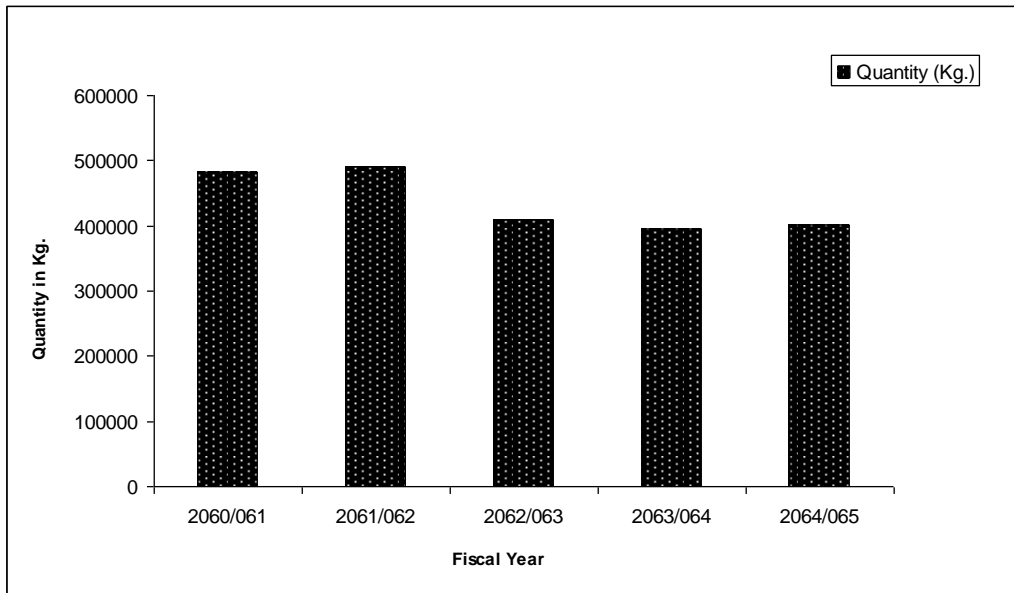
Annual demand of Maida

Fiscal Year	Quantity (Kg.)
2060/061	483,215
2061/062	491,523
2062/063	410,256
2063/064	395,935
2064/065	401,256
Total	2,182,185
Average	436,437

Source: Office Records of HSF

Figure 4.3

Annual demand of Maida for last five years period



As per figure 4.3, the annual demand of maida from the fiscal year 2060/061 to 2064/065 was 483215Kg, 491,523Kg, 395,935Kg, 401,256Kg respectively.

The maximum usage of maida in the year 2061/062 was 491,523Kg and minimum usage of maida was in the year 2063/064 i.e. 395,953 Kg. The average usage of maida for the five years period was 436,437Kg. It shows that the annual usage of maida is fluctuate in last five years period.

4.1.4.2 Economic Order Quantity for the year 2064/065 of maida

a) Mathematical / Formula Method

Annual Demand (A) = 401,256Kg

Carrying Cost (C)= Rs. 2.56

Ordering Cost (O)= Rs. 15,468 per order

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

$$= \sqrt{\frac{2 \times 401256 \times 15468}{2.56}}$$

$$= 69634.24 \text{ kg}$$

Calculation of No. of order

$$\text{No. of order} = \frac{\text{Annual Demand}}{\text{EOQ}}$$

$$= \frac{401256}{69634}$$

$$= 5.76$$

$$= 6 \text{ times (Approx)}$$

b) Trial and Error Method

Table 4.6

Trial and Error Method

No. of order	Order Size (Kg.)	Average Inventory	Carrying Cost	Ordering Cost	Total Cost
1.	401,256	200,628	513,607	15,468	509,075
2.	200,628	100,314	256,804	30,936	287,740
3.	100,314	50,157	128,402	61,872	190,274
4.	80,251	40,125	102,720	77,340	180,060
5.	66,876	33,438	85,601	92,808	178,409
6.	57,322	28,661	73,372	108,276	181,648
7.	50,157	25,078	64,199	123,744	187,943

Source: Office Records of HSF

On the basis of table 4.6, the highest cost Rs. 529,075 at a single order of 401,256Kg and the lowest cost Rs. 178,409 at the 6th Order size is 66,876Kg. Therefore, the company should place the 6th time Order a with the 99,876Kg order size to maintain the lowest total cost.

4.1.4.3 Annual Demand of the Palm Oil

Annual demand of palm oil for last five years period has been given below.

Table 4.7

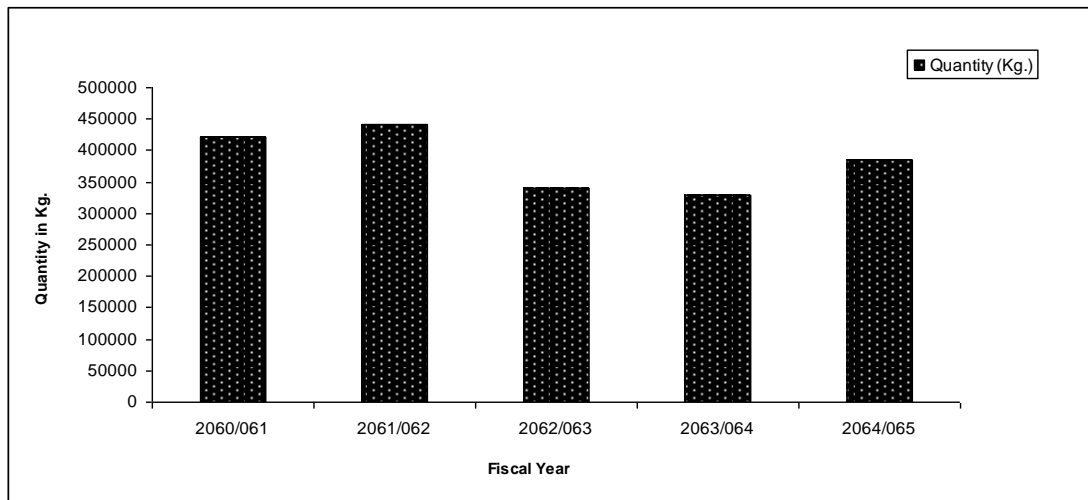
Annual Demand of Palm Oil

Fiscal Year	Quantity (Kg.)
2060/061	421,054
2061/062	442,313
2062/063	339,477
2063/064	329,908
2064/065	384,652
Total	1,917,404
Average	383,480.8

Source: Office Records of HSF

Figure 4.4

Annual Demand of Palm Oil for Last Five Years Period



On the study figure 4.4, the annual demand of palm oil from the year 2060/061 to 2064/065 was 421,054Kg, 442,313Kg, 339,477Kg, 329,908Kg and 384,652Kg respectively.

The maximum usage of palm oil in the year 2061/062 i.e. 442,312 Kg and minimum usage of palm oil in the year 2063/064 i.e. 329,908Kg. The average usage of

palm oil for the five years period was 383,480Kg. It shows that the annual usage of palm oil is fluctuate in the last five year period.

4.1.4.4 Economic Order Quantity for the year 2064/065 of Palm oil

- a) Mathematical/Formula Method

Annual demand (A)=421,054Kg.

Ordering Cost (O)= Rs. 384,226

Carrying Cost (C) = Rs. 33.88

(Source: Unpublished record of HSF)

Now,

$$\begin{aligned} \text{EOQ} &= \sqrt{\frac{2AO}{C}} \\ &= \sqrt{\frac{2 \times 421054 \times 384226}{33.88}} \\ &= 97,724.975 \\ &= 97,725 \text{ Kg.} \end{aligned}$$

- b) Calculation of No. of order

$$\begin{aligned} \text{No. of order} &= \frac{\text{Annual Demand}}{\text{EOQ}} \\ &= \frac{421054}{97725} \\ &= 4.30 \text{ times} \end{aligned}$$

- c) Trial and Error Method

Table 4.8

**Calculation of EOQ of Palm oil under Trial and Error Method for the year
2064/065**

No. of order	Order Size (Kg.)	Average Inventory (Kg.)	Carrying Cost (Rs.)	Ordering Cost (Rs.)	Total Cost (Rs.)
1.	421,054	210,527	7,132,654	384,226	7,136,497
2.	210,527	105,263	3,566,310	768,452	4,334,762
3.	140,351	70,715	2,377,529	1,152,678	3,530,207
4.	105,263	52,631	1,783,138	1,536,904	3,320,042*
5.	84,210	42,105	1,426,517	1,921,130	3,347,647
6.	70,175	35,087	1,188,747	2,305,356	3,494,103
7.	60,150	30,075	1,018,941	1,689,582	3,708,523

Source: Office Records of HSF

On the study table 4.8, the highest total cost Rs. 7,136,497 at a single order i.e. 421,054Kg. and the lowest cost Rs. 3,320,042 at 4 order size i.e. 105,263Kg. Therefore, the company should place the 4 times order a year with the 105,253Kg order size to maintain the lowest total cost.

4.1.4.5 Annual Demand of Gluten

Annual demand of Gluten for the last five years period has been given below.

Table 4.9

Annual Demand of Gluten

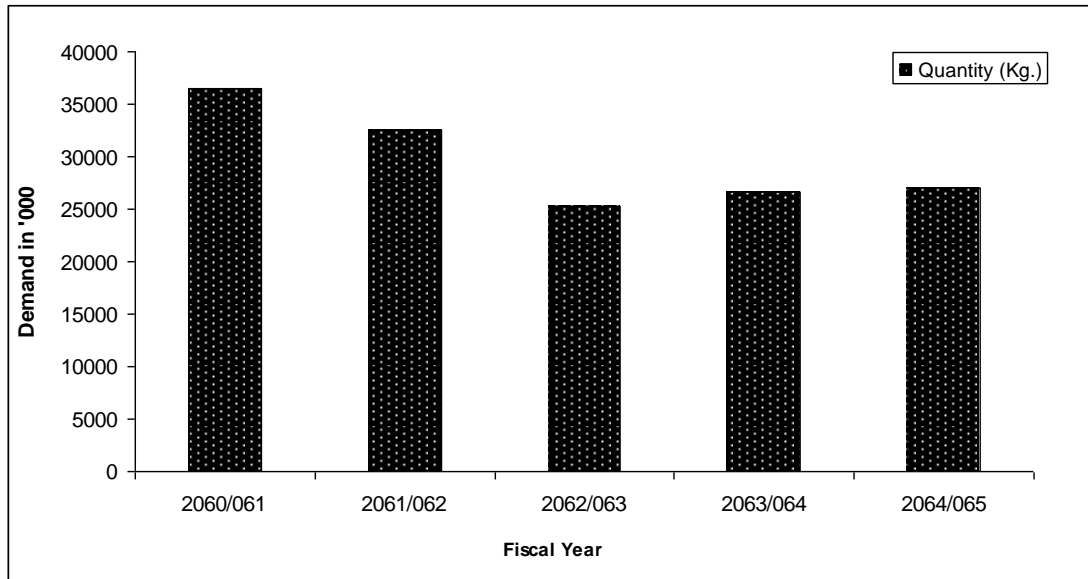
Fiscal Year	Annual Demand (Kg.)
2060/061	36,550
2061/062	32,628
2062/063	25,269
2063/064	26,606
2064/065	27,068

Total	148,121
Average	29,624.2

Source: Office Records of HSF

Figure 4.5

Annual Demand of Gluten for the last five years period



On the study of figure 4.5 or table 4.9, the annual demand of Gluten from the year 2060/061 to 2064/065 was 36,550Kg, 32,628Kg, 25,269Kg, 26,606Kg and 27,068Kg respectively.

The maximum usage of Gluten is in the year 2060/061 i.e. 36,550 Kg and the minimum usage of Gluten is in the year 2062/063 i.e. 25,269Kg. The average usage of Gluten for the five years period was 29,624.2Kg. It shows that the annual demand of Gluten is fluctuate in the last five years period.

4.1.4.6 Economic Order Quantity for the year 2064/065 of Gluten

a) i) Mathematical/Formula Method

Annual Demand (A)= 27,068Kg.

Ordering Cost (O)= Rs. 85,725

Carrying Cost (C) = Rs. 13.25

Now,

$$\begin{aligned} \text{EOQ} &= \sqrt{\frac{2AO}{C}} \\ &= \sqrt{\frac{2 \times 27068 \times 85725}{13.25}} \\ &= 18715 \text{ kg.} \end{aligned}$$

ii) Calculation of No. of Order

$$\begin{aligned} \text{No. of order} &= \frac{\text{Annual Demand}}{\text{EOQ}} \\ &= \frac{27068}{18715} \\ &= 1.45 \text{ times} \\ &\cong 2 \text{ times} \end{aligned}$$

b) Trial and Error Method

Table 4.10

Calculation of EOQ of Gluten under Trial and Error Method

No. of order	Order Size (Kg.)	Average Inventory	Carrying Cost	Ordering Cost	Total Cost
1.	27,068	13,534	139,325	85,725	265,050
2.	13,534	6,767	89,663	171,450	261,113
3.	9,022	4,511	59,711	257,175	316,950
4.	6,717	3,358	44,494	342,900	387,394
5.	5,412	2,706	35,855	438,625	464,480

Source: Office Records of HSF

On the study of table 4.10, the highest total cost Rs. 464,480 at the 5th order i.e. 5,413Kg order size and the lowest cost Rs. 261,113 at the 2nd order i.e. 13,534kg order size. Therefore the company should place the two times order size a year with the 13,534Kg order size to maintain the lowest total cost.

4.1.5 ABC Analysis

According to the concept of ABC analysis the term of inventory with regard to raw materials of Him Shree Foods Pvt. Ltd. are categorized as A, B and C on the basis of their values as shown in the table below.

Categorization of raw materials according to ABC Analysis

Category of Item	Inventory of Raw Materials Items
A	Gluten, Food Colour, Flavor inhancer, MSG, Soup Powder, Ajitide, Leak Flake
B	Palm Oil, Palmolien, Chilly Powder, Dry garlic, packaging materials
C	Maida, Salt, Saya Sauce, Cartoons

Source: Office Records of HSF

Table 4.11

Categorization of Raw Materials inventory according to ABC analysis with their volume and value.

Category	Items (Kg)	% of Items	Value (Rs.)	% of Value
A	112,536	8.75	30,251,328	49.77
B	359,860	28	19,362,291	31.86
C	813,325	63.25	11,165,205	18.37
Total	1,285,721	100	60,778,824	100

Source: Office Records of HSF

On the study of table 4.11, the table shows that the item 'A' covers the minimum proportion of Raw Materials i.e. 9% on total units of Raw Materials but highest proportion of value i.e. 49.77%. The item 'B' covers the 28% of Raw Materials on total units and covers the 31.86% value of R.M. On the other hand, item 'C' covers the highest proportion of raw materials i.e. 63.25% but covers the lowest proportion of value i.e. 18.3% of total inventory.

4.1.6 Purchasing procedure practice in Him Shree Foods Pvt. Ltd.

Purchasing is the most important function of inventory management. Him Shree Foods Pvt. Ltd. has purchased different types of raw materials. Such as Maida, Palm Oil,

Palmolien, Gluten, Soup powder etc. for the production of Noodles. The company purchased different types of raw materials by using following purchasing procedure.

4.1.6.1 Collection of Requisition

The purchase manager collects the requisitions from the store department to take decision for purchase.

4.1.6.2 Decision for purchase

After receiving the purchase requisition from the store the purchase manager decides what, when and how much to buy.

4.1.6.3 Selection of Purchase

All the required raw materials for the company are not available in local market. So, the company has to import from third country like India, Thailand and Singapore. For the selection of supplier company should invite bids or tender from listed suppliers and on the studying the terms of supply, quality, quantity and price of goods the suppliers should be selected out of bidders or tenderizers. But sometime company has imported required materials directly from the registered supplier without inviting bids or tender by opening L.C. and sometimes company has imported required materials other than listed suppliers without taking consent of board.

4.1.6.4 Purchase Order

After selecting the best supplier, purchase order is prepared by the purchase department and sent to the vender authorizing him to supply to specified quantity and quality of materials at the stipulated terms, at the time and place mentioned in it.

4.1.6.5 Storage

Proper and effective storage helps to minimize production cost and provide efficient service. In Him Shree Foods Pvt. Ltd. the materials are storing in such a way

that allows free flow of materials with minimum cost and does not hinder the production, operation and delivery of goods.

4.1.6.6 Codification of Materials

Codification helps in proper maintenance of stores and facilitates in mechanized accounting. Among various method of codification, Him Shree Foods Pvt. Ltd. practices alphabetical method. In this method, the materials are coded using the first alphabetical of the name of the materials as the starting point of codification and sub-alphabet is used wherever necessary.

For example,

Maida	-	Md
Palm Oil	-	Po
Palmolien	-	Pm
Soup Wraper	-	Spw
Chicken Soup	-	SPCK

The finished products of Him Shree Foods Pvt. Ltd. are noodles like RARA, Aaha, A-One, Mazako, Aaha-50, RARA Junior, Fewa Chicken, Fewa Mutton, Few Vegetable etc. All these noodles are coded on the basis of their weight and flavour. For example,

RARA.	-	RR75
Aaha	-	AA70
Fewa Chicken	-	FWCK65
Fewa Mutton	-	FWMth65
Mazako	-	MZKO 35

4.1.7 Stock Maintenance

Every manufacturing company has to maintain its stock in systematic manner so that the company has not faced any problem with regarding the stock. In Him Shree foods Pvt. Ltd. the physical stock available in the store. They are counted, weighted, measured, listed and then properly recorded in Bin Card in volume as well as in store ledger in volume and its value.

Him Shree Foods Pvt. Ltd. practices physical checking method also. In this method raw materials and finished goods are counted and checked on weekly and monthly basis and report is submitted to the store manager.

4.2 Major Findings

By analyzing the data, the most remarkable findings related to this study have been presented as follows:

1. The main raw materials of Him Shree Foods Pvt. Ltd. are maida, palm oil, Palmolien, Gluten, food color, soup powder, wrapper, soup wrapper etc. and finished products are RARA, Aaha, Aaha-50, Mazako and Fewa etc.
2. The Him Shree Foods Pvt Ltd. purchase raw materials through local market, India and third countries as far as the availability and necessity.
3. The company just started paper work of EOQ model but not follows exactly EOQ model, ROL model for the management of inventory. Basically their focus on demand and supply.
4. The percentage of raw materials on total inventory from the fiscal year 2060/061 to 2064/065 is 36.95%, 37.15%, 38.89%, 36.66%, 39.77% respectively and the average is 37.88% during the study period.
5. The trend of purchasing materials of Him Shree Foods Pvt. Ltd. is fluctuating in every year.
6. The percentage of finished goods to total inventory from the fiscal year 2060/061 to 2064/065 is 55.49%, 54.69%, 52.44%, 52.90% respectively and the average is 53.83% during the study period.

7. Inventory turnover ratio is an indicator of the efficiency of management. The ITR of Him Shree Foods Pvt. Ltd. is fluctuating during the study period. In the fiscal year 2060/061 the ITR of the company is 27.54 times but it is decreases in year 2060/061 to 14.91times. In the year 2062/063 it increased drastically to 50.55 times and again decrease in the next year 2063/064 to 22.31 times. In the year 2064/065 it increase to 29.43 times. The average inventory turnover ratio during the study period was 28.95 times.
8. Inventory conversion period shows the number of days to complete the raw materials into finished goods. The lowest inventory conversion period shows more efficient than the longer conversion period. The lowest conversion period was 5.93 days in the year 2062/063 and the longest conversion period was 20.12 days in the year 2061/062. The average conversion period of Him Shree Foods Pvt. Ltd. during the study period was 10.36 days.
9. The Him Shree Foods Pvt. Ltd. has applied the ABC analysis. According to ABC analysis, Him Shree Foods Pvt. Ltd. categorized Gluten, Food colour, Flavor, inhancer, MSG, soup Powder, ajitide, Leak Flake in item 'A', Palm Oil, Palmolien, Chilly Powder, dry garlic, packaging materials in item 'B' and maida, salt, soya sauce,
10. Cartoons are in item 'C'. In order to minimize inventory cost the company paid more attention to handled item 'A' than item 'B' and 'C'.
11. The informal interview with the purchasing manager of Him Shree Foods revealed that the company adopted the centralized purchasing system of raw materials. While selecting the suppliers the websites of potential suppliers are browsed and the preferable one is selected and corresponding for the required materials with quality, quantity and terms and conditions.
12. Regarding the questionnaire the Him Shree Food Industry Pvt. Ltd. has applied cash and credit basis for the purchasing materials and adopted FIFO method for issue of inventory.

13. Regarding the questionnaire the company used to prepare the inventory planning. Sometime the middle level management and the purchasing manager has made and handled the inventory.
14. Finished goods and raw materials are coded alphabetically on the basis of brand, weight and flavor.
15. The stock of raw materials and finished goods are checked at the end of the week and month regularly and as per the need of the company.
16. The stock of raw materials and finished goods are recorded in Bin Card and store ledger that both the quantity and value can be verified as per the need of the company.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 Summary

Government of Nepal has facilitated or helped to establish different types of manufacturing industries during the different plan, periods with different objectives, i.e. provision of private utilities, acceleration the rate of economic growth, establishment of welfare oriented society, create opportunities for employees and to contribute significantly in the national development as well as to assist in the economic development of the country.

The establishment of import substituting industries like noodles has great importance. It is also one of the means among others to achieve the goal of economic development in our country. In agriculture based country agro-based industry like noodles producing industries minimize the import of noodles on one hand and employ the local resources such as labour and materials with in the country on the other hand. Him Shree Foods previously known as Gandaki Noodles Pvt. Ltd. was established in 2039 B.S. in Pokhara Industrial states as an agro-based import substituting industry with an objective to help the countries economic growth.

Inventory management is one of the most important function in any organization. A firm can not achieve its goal unless inventories are controlled effectively and capitals is allocated efficiently. Inventory functions are associated with production, marketing, finance and administration etc. Inventory constitutes the most significant part of the current assets. It should therefore be managed efficiently to avoid unnecessary investment. Timely and modernized inventory management results in the better service to custom by reducing total cost of production. Therefore this study deals with the inventory management of Him Shree Food Industries Private Limited.

The main objective of this study is to analyze and examine the present position of inventory management system of Him Shree Food Pvt. Ltd.

For this study, case study research design has been used to tabulate, analyze and interpret the primary and secondary data collected from informal interviews and office records. The collected date are interpreted by using tabulation, bar diagram, EOQ and other statistical tools i.e. average, percentage ratios etc.

The analysis of this study includes the inventory management of Him Shree Foods Pvt. Ltd. and analysis of its effect on present position of inventory management through tabulation, bar diagram, EQQ, Ratio Analysis. For this purpose the data covering from the five fiscal year i.e. 2060/2061 to 2064/065.

During the study it has been found that the main raw materials used in Him Shree Foods Pvt. Ltd. were maida, palm oil, plamolien, gluten, soup powder, MSG etc. Some of them were bought from local market and some of them imported from India, Thailand and Singapore. Proper scientific tools and techniques like EOQ, ROL were not applied for purchase of material but to handle and store the material ABC analysis was used. For the collection of requisition, selection of supplier and to take purchase decision appropriate methods was used. Regarding the stock maintenance the company used Bin Card, Store Ledger and Physical Checking.

5.2 Conclusion

All the data of the study and observation of the researcher are taken from the interview of the purchase or store officers and the record of the company. It seems that

the company is not following scientific method to control or manage the inventory systematically. It is very necessary to apply theoretical and practical method in ordering and carrying necessary to apply theoretical and practical method in ordering and carrying the inventory. This study is just a small parts to fulfill the partial requirement of MBS. So it helps to improve and requires attention to bring some improvement in inventory management of Him Shree Foods Pvt. Ltd.

The conclusion of this study as revealed from the analysis can be stated as follows:

1. The company purchased raw materials through local market as far as possible and purchased from India, China or other third countries.
2. The company just started paper work about EOQ model but not follows the EOQ model, Re-order level for purchasing decision as well as inventory management. Normally, the decision is made on the basis of demand and supply. As a result the leading noodles manufacturing company of Nepal is not able to follow the scientific techniques of inventory management.
3. The percentage of raw materials and finished goods inventory on total inventory was not so fluctuate. It is slightly less or more than the average during the study period.
4. The inventory turnover ratio and inventory conversion period was found fluctuated during the study period. It is found that the highest inventory turnover ratio and the lowest inventory conversion period was in the year 2062/063. It shows that the production and sales was very effective and efficient in that year.
5. The company has been practiced centralized purchasing. The company is following the modern technology i.e. e-mail, internet, while selecting the suppliers.
6. The classification and codification of raw materials and finished goods inventory is done by alphabetical method which prevents the reputations of goods and helps to standardize the inventory. It is applied, because easy to understand and operate frequently.

7. The stock of the materials and finished goods are recorded in Bin Card and store ledger to get the information about the value and volume. Stock of materials are checked in every week as well as every month. It is traditional method but in practice because it is very popular and established method.

5.3 Recommendation

The management of inventory in Him Shree Foods Pvt. Ltd is not only necessary but also compulsion for the better performance. If the company initiates step of the appropriate management of inventory, certainly it will cope its set objectives successfully. This study is just a small part of fulfill the partial requirements of MBS. From the studies, some findings are extracted.

Concerning these findings, it may be appropriate to make some suggestions and recommendations. Although these suggestions may not enough as well as could very easily giving negative reflection, but certainly suggest the areas that can be improved and require attention to bring some improvement in inventory management of Him Shree Foods Industry Pvt. Ltd.

1. The objective of inventory management is to control the inventory and reliable investment of working capital for materials. For these purpose Him Shree Food Industry Pvt. Ltd. should use scientific tools and techniques for inventory management.
2. It is found that Him Shree Foods Industries Pvt. Ltd. has not used EOQ model for optimum level of inventory management system. However if possible maximum stock level, minimum stock level, re-order level as well as economic lot size should be fixed. This helps the management to strike balance of working capital.
3. The inventory turnover ratio and inventory conversion period of five fiscal years are found to be fluctuating which is considered to be adverse for the organization. Therefore the management of the company is suggested to be careful in ordering, purchasing, stocking and consumption of materials in the future which is maintain uniformity of inventory turnover ratio and inventory conversion period.

4. The company highly depending upon India and other countries for raw materials. It is recommended that to develop our national economy the company should give more priority to the domestic suppliers for these raw materials which are available in the country.
5. Full authority and responsibility should be given to the concern department. Proper co-ordination should be maintained with the department.

BIBLIOGRAPHY

Adam, Evertte E. and Ebert, Jr. Ronald Jenbert (2000), *Production and Operation Management*, New Delhi, India: Prentice Hall of India Pvt. Ltd.

Chary, S.N. (1994), *Production and Operation Managemen*, New Delhi: Tata Mc Graw Hill Publishing Co. Ltd.

Garret, L and Silver, M (1968), *Production Management Analysis*, New York: Harcourt Brance Javanovic Inc.

Hampton, J. John (1986), *Financial Decision Making*, New Delhi: Prentice Hall of India Pvt. Ltd.

Ilongren, F.D. (2002), *Cost Accounting*, New Delhi: Prentice Hall of India Pvt. Ltd.

Jain, S.P. and Narayan K.L. (1991), *Cost of Accounting*, New Delhi: Kalyani Publishers.

Khan, M.Y. and Jain P.K. (1992), *Financial Management*, New Delhi: Tata Mc Graw Hill Publisng

Khanal, Peshal (2062), *Educational Research Methodology*, Kathmandu: Sunlight Publication.

Kothari, C.R. (1996), *Quantitative Techniques*, New Delhi: Vikash Publishing House.

Manandhar, K.D. and Shrestha, K.N. (2054), *Production and Operation Management*, Kathmandu: Valley Publishers.

Mohan, M. and Goyal, S.N. (1997), *Principles of Management Accounting*, Agra: Sahitya Bhawan Publication.

Muhlemann, A. Oakland, J. and Lockyerk (1996), *Production Management*, New Delhi: Mc Graw Hill India Pvt. Ltd.

Munankarmi, S.P. (1999), *Cost and Management Accounting*, Kathmandu: Educational Publishing House.

Pandey, I.M. (1993), *Financial Management*, New Delhi: Vikas Publishing House Pvt. Ltd.

Pradhan, Radheshyam (2004), *Financial Management*, Kathmandu: Buddha Academic Publisher and Distributors Pvt. Ltd.

Regmi, L.K., Joshi P.R., Chaudhary, A.K. and Fago, G. (2003), *Production and Management*, Kathmandu: Buddha Academic Publisher and Distributors Pvt. Ltd.

Sharma, Puspa Raj (2064), *Research Methodology with SPSS*, Kirtipur: Publishers Durga Sharma.

Starr, M.K. and David, W.M. (1962), *Inventory Control Theory and Practice*, New Delhi, Englewood Chiffs: N.J. Prentice Hall Pvt. Ltd.

Welsch, G.A., Hiton, R.W. and Gordon, P.N. (2001), *Budgeting Profit Planning and Control*, New Delhi: Prentice Hall of India Pvt. Ltd.

Weston, J.F and Copeland, T.E. (1992), *Managerial Finance*, New Work: The Dryden Press.

Weston, J.F. and Brigham (2004), *Essential of Managerial Finance*, New York: Hartcourt Brance College Publishers.

Saru, Ram Kumari (2064), *Planning and Controlling of Inventory of Manufacturing Industries*, A Study of Gosheli Packaging House, unpublished Master Degree Diss. Submitted to P.N.C., Pokhara.

Tiwari, P.R. (2061), *A Study on Inventory Management of Staff Trading Corporation Ltd.*, unpublished Master Degree Diss. submitted to P.N.C., Pokhara, (T.U.)

Appendix - 1

Questionnaire

Information Page

Sir/Madam/Miss

I request to you fill up the following questionnaire. Your valuable opinion will guide to me to prepare master digger's these. I insure that your opinion will not be disclosed for other purposes.

- i) Name of Researcher : Parag Munakarmi
- ii) Name of Campus : Prithivi Narayan Campus
- iii) Research Title : Inventory Management of Manufacturing Industries in Nepal with reference to Him Shree Foods Industries Pvt. Ltd.
- iv) Research Submitted to : Office of Dean, Faculty of Management of Tribhuvan University in partial fulfillment of MBS programme

Please, tick as (%) on the one or more boxes and fill in the blanks as per required.

Name of Respondent :

Name of Firm :

Address of the Firm :

1. Types of Industry:

- a) Partnership [] b) Private Ltd. Co. []
- c) Corporation [] d) Others if any []

2. Objectives of the Company

- a) Profit maximization []
- b) Wealth maximization []

- c) Sales maximization []
 - d) Others if any []
3. What types of purchasing procedure are adopted by H.S.F.?
- a) Centralized Purchasing []
 - b) Decentralized Purchasing []
4. Who controlled the inventory?
- a) Manager [] b) Store keeper []
 - c) Accountant [] d) Supervisor []
5. What are main products produced by the company?
-
6. What are the major types of inventories hold by the company?
-
7. From where the company purchase the materials?
- a) National Market [] b) International Market []
 - c) Local Market [] d) All of above []
8. What are the method used by Him Shree Foods Pvt. Ltd. for holding inventories?
- a) LIFO [] b) FIFO []
 - c) Average cost method []
 - d) Weighted aviate cost method []
9. Which systems are followed to the purchase?
- a) cash [] b) Credit []
 - c) Installment [] d) Other if any []
10. Who collected the purchase requisition slip in HSF?
- a) Purchase Manager b) Purchase Assistant Manager
 - c) Store Keeper d) If other please specific _____

11. Who makes the purchase decision of HSF?
- a) Purchase Manager
 - b) Purchase Assistant Manager
 - c) General Manager
 - d) If other please specific _____
12. Which department prepares the purchase requisition form in HSF?
- a) Purchase Department
 - b) Account Department
 - c) Central Department
 - d) If other please specific _____
13. What type of systems are followed to the purchase marketing?
- a) Tender
 - b) Hand to mouth
 - c) Blanked Order
 - d) If any places specific _____
14. How many quantities are ordered at a time?
- _____
15. How many orders are placed at a month?
- _____
16. What is the lead time to receive the materials?
- _____
17. Who received and checked the materials arrived in HSF?
- a) Purchase Manager
 - b) Assistant Purchase Manager
 - c) Received Clerk
 - d) Others
18. How is the stock maintained in HSF?
- _____
19. Does the company prepare the inventory planning?
- a) Yes []
 - b) No []
20. If yes, who is the authorized person for inventory planning?
- a) Top level Management
 - b) Middle Level Management

- c) Lower Level Management
- d) Participation Management

21. Which inventory policies are used?

- a) Stability policy []
- b) Fluctuation Policy []
- c) Just in Time Policy []
- d) Other please specific

22. Which methods are used while determining inventory planning?

- a) Decision of management
- b) Simple Average
- c) Proportionate
- d) Other

23. What are the methods used by HSF for valuation of inventory?

24. Does the company prepared the inventory planning?

- a) Yes []
- b) No []

25. If use, which tools are used?

- a) EOQ []
- b) ROL []
- c) Safety Stock []
- d) Others []

26. What are the specific problems faced by the HSF while managing the inventories?

- a) Nepal Banda, Strikes, lock out
- b) Unexpected price change
- c) Geographical Problems
- d) If other please specific

27. Are there regular contacts for rate of supplies?

- a) Yes []
- b) No []

28. Who controlled the inventory?

- a) General Manager []
- b) Store Keeper []
- c) Supervisor []
- d) Workers []

29. Which tools are used to inventory control?

- a) Store Ledger
- b) Bin Card

- c) Observation
- d) Others please specific

30. Which method is used for inventory valuation?

- a) Cost method
- b) Average cost method
- c) Market value method
- d) Other if any

31. What are the suggestions for company for correction the inventory management?

Please Mention

"Thank for your kindly co-operation"

BIBLIOGRAPHY

Adam, Evertte E. and Ebert, Jr. Ronald Jenbert (2000), *Production and Operation Management*, New Delhi, India: Prentice Hall of India Pvt. Ltd.

Chary, S.N. (1994), *Production and Operation Managemen*, New Delhi: Tata Mc Graw Hill Publishing Co. Ltd.

Garret, L and Silver, M (1968), *Production Management Analysis*, New York: Harcourt Brance Javanovic Inc.

Hampton, J. John (1986), *Financial Decision Making*, New Delhi: Prentice Hall of India Pvt. Ltd.

Ilongren, F.D. (2002), *Cost Accounting*, New Delhi: Prentice Hall of India Pvt. Ltd.

Jain, S.P. and Narayan K.L. (1991), *Cost of Accounting*, New Delhi: Kalyani Publishers.

Khan, M.Y. and Jain P.K. (1992), *Financial Management*, New Delhi: Tata Mc Graw Hill Publisig

Khanal, Peshal (2062), *Educational Research Methodology*, Kathmandu: Sunlight Publication.

Kothari, C.R. (1996), *Quantitative Techniques*, New Delhi: Vikash Publishing House.

Manandhar, K.D. and Shrestha, K.N. (2054), *Production and Operation Management*, Kathmandu: Valley Publishers.

Mohan, M. and Goyal, S.N. (1997), *Principles of Management Accounting*, Agra: Sahitya Bhawan Publication.

Muhlemann, A. Oakland, J. and Lockyerk (1996), *Production Management*, New Delhi: Mc Graw Hill India Pvt. Ltd.

Munankarmi, S.P. (1999), *Cost and Management Accounting*, Kathmandu: Educational Publishing House.

Pandey, I.M. (1993), *Financial Management*, New Delhi: Vikas Publishing House Pvt. Ltd.

Pradhan, Radheshyam (2004), *Financial Management*, Kathmandu: Buddha Academic Publisher and Distributors Pvt. Ltd.

Regmi, L.K., Joshi P.R., Chaudhary, A.K. and Fago, G. (2003), *Production and Management*, Kathmandu: Buddha Academic Publisher and Distributors Pvt. Ltd.

Sharma, Puspa Raj (2064), *Research Methodology with SPSS*, Kirtipur: Publishers Durga Sharma.

Starr, M.K. and David, W.M. (1962), *Inventory Control Theory and Practice*, New Delhi, Englewood Chiffs: N.J. Prentice Hall Pvt. Ltd.

Welsch, G.A., Hiton, R.W. and Gordon, P.N. (2001), *Budgeting Profit Planning and Control*, New Delhi: Prentice Hall of India Pvt. Ltd.

Weston, J.F and Copeland, T.E. (1992), *Managerial Finance*, New Work: The Dryden Press.

Weston, J.F. and Brigham (2004), *Essential of Managerial Finance*, New York: Hartcourt Brance College Publishers.

Saru, Ram Kumari (2064), *Planning and Controlling of Inventory of Manufacturing Industries*, A Study of Gosheli Packaging House, unpublished Master Degree Diss. Submitted to P.N.C., Pokhara.

Tiwari, P.R. (2061), *A Study on Inventory Management of Staff Trading Corporation Ltd.*, unpublished Master Degree Diss. submitted to P.N.C., Pokhara, (T.U.)

Appendix - 1

Questionnaire

Information Page

Sir/Madam/Miss

I request to you fill up the following questionnaire. Your valuable opinion will guide to me to prepare master digger's these. I insure that your opinion will not be disclosed for other purposes.

- i) Name of Researcher : Parag Munakarmi
- ii) Name of Campus : Prithivi Narayan Campus
- iii) Research Title : Inventory Management of Manufacturing Industries in Nepal with reference to Him Shree Foods Industries Pvt. Ltd.
- iv) Research Submitted to : Office of Dean, Faculty of Management of Tribhuvan University in partial fulfillment of MBS programme

Please, tick as (%) on the one or more boxes and fill in the blanks as per required.

Name of Respondent :

Name of Firm :

Address of the Firm :

1. Types of Industry:

- a) Partnership [] b) Private Ltd. Co. []
- c) Corporation [] d) Others if any []

2. Objectives of the Company

- a) Profit maximization []
 - b) Wealth maximization []
 - c) Sales maximization []
 - d) Others if any []
3. What types of purchasing procedure are adopted by H.S.F.?
- a) Centralized Purchasing []
 - b) Decentralized Purchasing []
4. Who controlled the inventory?
- a) Manager [] b) Store keeper []
 - c) Accountant [] d) Supervisor []
5. What are main products produced by the company?
-
6. What are the major types of inventories hold by the company?
-
7. From where the company purchase the materials?
- a) National Market [] b) International Market []
 - c) Local Market [] d) All of above []
8. What are the method used by Him Shree Foods Pvt. Ltd. for holding inventories?
- a) LIFO [] b) FIFO []
 - c) Average cost method []
 - d) Weighted aviate cost method []
9. Which systems are followed to the purchase?
- a) cash [] b) Credit []
 - c) Installment [] d) Other if any []
10. Who collected the purchase requisition slip in HSF?

- a) Purchase Manager b) Purchase Assistant Manager
 - c) Store Keeper d) If other please specific _____
11. Who makes the purchase decision of HSF?
- a) Purchase Manager b) Purchase Assistant Manager
 - c) General Manager d) If other please specific _____
12. Which department prepares the purchase requisition form in HSF?
- a) Purchase Department b) Account Department
 - c) Central Department d) If other please specific _____
13. What type of systems are followed to the purchase marketing?
- a) Tender b) Hand to mouth
 - c) Blanked Order d) If any places specific _____
14. How many quantities are ordered at a time?
- _____
15. How many orders are placed at a month?
- _____
16. What is the lead time to receive the materials?
- _____
17. Who received and checked the materials arrived in HSF?
- a) Purchase Manager b) Assistant Purchase Manager
 - c) Received Clerk d) Others
18. How is the stock maintained in HSF?
- _____
19. Does the company prepare the inventory planning?
- a) Yes [] b) No []
20. If yes, who is the authorized person for inventory planning?

- a) Top level Management
- b) Middle Level Management
- c) Lower Level Management
- d) Participation Management

21. Which inventory policies are used?

- a) Stability policy [] b) Fluctuation Policy []
- c) Just in Time Policy [] d) Other please specific

22. Which methods are used while determining inventory planning?

- a) Decision of management b) Simple Average
- c) Proportionate d) Other

23. What are the methods used by HSF for valuation of inventory?

24. Does the company prepared the inventory planning?

- a) Yes [] b) No []

25. If use, which tools are used?

- a) EOQ [] b) ROL []
- c) Safety Stock [] d) Others []

26. What are the specific problems faced by the HSF while managing the inventories?

- a) Nepal Banda, Strikes, lock out b) Unexpected price change
- c) Geographical Problems d) If other please specific

27. Are there regular contacts for rate of supplies?

- a) Yes [] b) No []

28. Who controlled the inventory?

- a) General Manager [] b) Store Keeper []
- c) Supervisor [] d) Workers []

29. Which tools are used to inventory control?

- a) Store Ledger
- b) Bin Card
- c) Observation
- d) Others please specific

30. Which method is used for inventory valuation?

- a) Cost method
- b) Average cost method
- c) Market value method
- d) Other if any

31. What are the suggestions for company for correction the inventory management?

Please Mention

"Thank for your kindly co-operation"