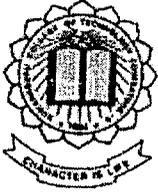# A STUDY ON THE INVENTORY MANAGEMENT OF INDUSTRIAS DEL RECAMBIO PRIVATE LIMITED

By

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of

Department of Management Studies
**Kumaraguru College of Technology
Coimbatore**

A PROJECT REPORT
Submitted to the

FACULTY OF MANAGEMENT SCIENCES

In partial fulfillment of the requirements
for the award of the degree
Of

MASTER OF BUSINESS ADMINISTRATION

August, 2007

DEPARTMENT OF MANAGEMENT STUDIES

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE

BONAFIDE CERTIFICATE

Certified that this project report titled **"A STUDY ON THE INVENTORY MANAGEMENT OF INDUSRIAS DEL RECAMBIO PRIVATE LIMITED"** is the bonafide work of

Ms. **P.GNANAMBIGAI (71206631015)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Faculty Guide

Director

Evaluated and vice-voce conducted on ....

Examiner I

Examiner II

DECLARATION

I, hereby declare that this project report entitled as "a study on the inventory management of Industrias Del Recambio private limited", has undertaken for academic purpose submitted to Anna University in partial fulfillment of requirement for the award of the degree of Master of Business Administration. The project report is the record of the original work done by me under the guidance of Prof.N. jothilingam during the academic year 2007-2008.

I, also declare hereby, that the information given in this report is correct to the best of my knowledge and belief.

Place: Coimbatore

Date: 29 | 10 | 07

(P.Gnanambigai)

Date : 31.07.2007

SUMMER INTERNSHIP PROJECT COMPLETION CERTIFICATE

This is to certify that **Ms. GNANAMBIGAI.P** (Roll No 71206631015) a student of KCT Business School, Kumaraguru College Of Technology, had undergone a project between 19.06.2007 and 31.07.2007 entitled **"The Study On Inventory Management "**.

During the tenure her performance was **Good.**

Signature of the organizational guide

ACKNOWLEDGEMENT

It is inevitable that thoughts and ideas of other people tend to drift into the subconscious when one feels to acknowledge helping derived from others. I acknowledge to all those who have helped me in the preparation of this project work.

I would like to thank the god almighty for his guidance without whom this project wouldn't have become reality.

I wish to express my deep gratitude to the principal Dr. Joseph V. Thanikal for his guidance and encouragement to complete my project work.

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I express my sincere thanks to Mrs.vennila, Administration Manager, Industrias Del Recambio Limited, Coimbatore for granting permission to do my project work.

I extend my sincere gratitude to Mr. S. Perumalraj Industrias Del Recambio Private Limited, for his guidance to complete my project successfully.

Lastly I thank all the employees in the organization who were involved knowingly or unknowingly to make this project work successful.

EXECUTIVE SUMMARY

The present project is the study on inventory management in Industrias Del Recambio. The main objective of the present project is to study the various inventory control methods and to give suggestions for better inventory management through the applications of various inventory control techniques.

The data used were both primary and secondary primary data are collected through informal discussions with the executives of the organizations. Secondary data were collected through records maintained from the company.

The tools and technique used for analysis are ABC analysis, VED analysis, FNS analysis and 80/20 rule. Discussions .based on the data analysis conclusions and suggestions were drawn to improve the future inventory management practices of the company.

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STUDY

CHAPTER -1
INTRODUCTION

1.1 BACK GROUND OF THE STUDY

Inventory Management

Definition

The term inventory management is defined as it involves a retailer seeking to acquire and maintain a proper merchandise assortment while ordering, shipping, handling, and Related costs are kept in check.

Meaning

Inventories are stock of the product a company is manufacturing for sale and components that makes up the product. The forms in which inventories exist in manufacturing Companies are: raw materials, work-in-progress and finished goods. The inventories cost Money to acquire as well as hold them. Hence optimum level of inventories is required to Minimize the total cost of production.

Inventories denote any ideal resources of economic value. Inventories constitute the Principal item in working capital of the majority of the trading and industrial companies. Inventory enter the store of the organization in different form like raw materials, Components, consumable, capital goods, spares etc.
Effective inventory management is necessary to ensure adequate supply at optimum Cost, as inventory act as cushion between supply and demand. There is generally a time Lag between the recognition of the need and its fulfillment.
The greater the time lags the higher requirement for the inventory. It serves as a link between supply of raw materials Production and distribution process.

An effective inventory management should be of

- To Ensure a continues supply of raw materials to facilitate uninterrupted production.
- To maintain sufficient stock of raw materials in period of short supply and anticipate Price changes.
- To Maintain sufficient finished goods inventory for smooth sales operation and efficient customer service.
- To minimize the carrying cost and life time.
- To control investment in inventories and keep it at an optimum level.

OBJECTIVES OF THE INVENTORY MANAGEMENT

The objectives of the inventory management are operational and financial.

Operational objectives

- To ensure continues availability of all type of materials spares and finished Goods so that production may not be held up for want of any material.
- To ensure minimum possible losses through deterioration, wastage and damages.
- To ensure the right type of raw materials is available in right quantity and right time for productive use.
- The materials department has to be providing with necessary information about availability of the raw materials, so as to avoid stock outs as well as the large investment in industries.
- Sufficient stock of finished goods must be maintained to provide better service to customers.
- To eliminate duplication in ordering or replenishing stock
- To ensure perpetual inventory control so that the materials shown in the stock ledgers should be actually lying in the stores.
- To facilitate furnishing of data for short term planning and control of inventory.

Financial Objectives

- To keep material cost under control and to ensure right quality goods at reasonable prices.
- To maintain investment in inventories at optimum level.

Classifications of Inventory

Inventories may be classified by the form as well as function. The form in which Inventories are held may include the following:

1. Production Inventories

Raw material, Parts and components used in the production process.

2. Non-Production Inventories

Office store, machine spare parts and other parts come under this category

3. In Process Inventory

Semi finished goods lying at different stages of production process.

4. Finished Goods Inventory

Products that is ready for sales.

5. Scrap inventory

Obsolete materials are also some times including as inventory.Inventories may also classify by the functions they perform, they are

6. Anticipate Inventory

Anticipation inventories are built up in anticipation of feature demand. They are built up to help level production and to reduce the cost of changing production rates

7. Lot Size Inventory

Items purchased or manufactured greater than needed immediately create lot Size inventory is some time called cycle inventory. It is the position of inventory that depletes gradually as customers orders come in and is replenished cyclically. When suppliers order are received.

8. Transportation Inventory

Transportation inventories exist because of the time needed to more goods from one location to another such as from a plant distribution center or a customer. They are some times called pipe line or movement inventories.

FUNCTIONS OF INVENTORIES

- The basic purpose of inventories is to decouple supply and demand.
- Inventory serves as a buffer between supply and demand.
- Customer demand and finished goods
- Finished goods and component availability.
- Requirements for an operation and output for preceding
- Operation.

ADVANTAGES OF INVENTORY CONTROL

The various advantage of inventory control is:

- Efficient management of inventory ultimately results in the maximization of owners wealth.
- Introduction of proper in victories control system help in keeping inventory investment in the inventories as low as possible.
- Reduce changes of going out of stock Release more capital for other operations.
- Increase profitably of the organization.
- Advantages of price discounting bulk purchasing.

Thus the firm should minimize investment in the inventories. An optimum level Inventory should be determined on the basis of trade off between cost and benefits Associated with the level of inventory.

1.2 REVIEW OF LITERATURE

- The objectives of inventory management, including the relevant related costs, are examined in this paper. A brief review of standard problems, that have been effectively solved, is presented. However, we point out that a serious gap exists between theory and practice in many organizations. Suggestions are made for bridging this gap. Finally, a list is provided of a number of research problems whose implementable solution would have a major beneficial impact on the practice of inventory management. Author- Edward A. Silver
  source- Operations Research, Vol. 29, No. 4, Operations Management (Jul. - Aug., 1981), pp. 628-645.

- The paper inventory control in systems where manufacturing and remanufacturing operations occur simultaneously. Typical for these hybrid systems is that both the output of the manufacturing process and the output of the remanufacturing process can be used to fulfill customer demands. Here, we consider a relatively simple hybrid system, related to a single component durable product. For this system, we present a methodology to analyze a PUSH control strategy (in which all returned products are remanufactured as early as possible) and a PULL control strategy (in which all returned products are remanufactured as late as is convenient). The main contributions of this paper are (i) to compare traditional systems without remanufacturing to PUSH and to PULL controlled systems with remanufacturing, and (ii) to derive managerial insights into the inventory related effects of remanufactured. – Authors-Erwin van der Laan, Marc Salomon, Rommert Dekker, LukVanWassenhove. Source- Management Science, Vol. 45, No.5 (May,1999),pp.733,747

- A literature review by Dallery Z. Babai on inventory management policies. Two approaches are distinguished: the standard inventory management approach and the advance demand information based approach. We focus on the advance demand information based approach. In particular, we study a pure single-stage and single-

item inventory system where demand is given in the form of forecasts. Two forecast based inventory management policies are proposed, namely: the (rk, Q) which is a dynamic reorder point policy and the (T, SK) which is a dynamic order-up to policy. These policies are compared to the standard (r, Q) and (T, S) policies. We also show that in certain cases the two forecasts based inventory management policies and the standard inventory management policies are equivalent. Further, a new safety parameter, called safety quantity, is introduced and compared to the classical safety stock parameter. A practical approach is proposed to compute this safety quantity. Author- Dallery Z. Babai

- Although many studies have addressed the diagnosing of inventory systems, the field of operations management still seems to lack a systemized and integrated approach towards analysing inventory management systems. In this article, a contribution is made to fill this gap by proposing a conceptual framework that has been developed during the past 5 years and which aims at being supportive in assessing and redesigning inventory management systems. The underlying assumption of the framework is that companies can benefit from explicitly addressing an inventory management concept, which includes an assessment of the physical infrastructure of the inventory system, the planning and control structure, the information architecture as well as the organizational embedding of the inventory system. Applications of the approach advocated in this article show that companies often apply a one-dimensional approach regarding their inventory management system. Moreover, our case studies indicate that the process of addressing an inventory management concept may help to make interests and system with constant demand. For any specified number of inventory classes, the model allows expression of the overall system combined ordering and holding cost in terms of (i) the re-ordering frequencies for the items in each inventory class and (ii) the inventory class structure, that is, the proportion of the total system's items that are in each inventory class. The model yields a minimum total maintenance power of relevant stakeholders explicit. [copyright 2007 Elsevier]

class structure on inventory maintenance costs and turnover. If the Pareto curve (a.k.a. Distribution-by-value function) for the Inventory system can be expressed (or approximated) analytically, the model can also be used to determine an optimal class structure, as well as an appropriate number of Inventory classes. A special case of the model produces a simply structured, class-based ordering policy for minimizing total Inventory maintenance costs. Using real data, the cost characteristics of this policy are compared to those of a heuristic, commonly used by managers of multi-item inventory systems. This cost comparison, expressed graphically, underscores the need for normative modeling approaches to the problem of inventory cost management in large, multi-item systems. - Author: Stanford Martin, W.

Source: Journal of the Operational Research Society; Jul2007, Vol. 58 Issue 7, P922-928, 7p, 1 chart, 1 diagram, 1 graph.

1.3 STATEMENT OF THE PROBLEM

- To study effectiveness of inventory management in IRI and to suggest measures of improvement.
- There is a problem in production due to improper inventory management in IRI.Hence the present method of inventory management is to be studied in order a to suggest effective tools and techniques as requested by the management

1.4 OBJECTIVES OF THE STUDY

- To study the present practices of inventory followed by IRI.
- To formulate suitable inventory control measures at raw material stores.
- To develop improved strategies for improved inventory management for different categories.
- To give suggestions through proper findings.

1.5 SCOPE OF THE STUDY

Inventories constitute the most significant part of current asset for majority of the companies. The study enables the company to have proper inventory control measures, so that it can maintain proper stock levels to their requirements. By maintaining proper stock levels the company will be saved from under stocking and over stocking. Hence the production also gets balanced. So the company will be in a proper position to meets the customers wants hence direct profit can be earned by the company.

1.6 METHODOLOGY

1.6.1 Method of Data Collection

Data are collected from two methods; they are classified in to two types' primary data and secondary data:

Primary data

- Discussions with finance department, purchase department and materials department.
- Observation and activities taken at purchase department and stores department production activities.
- Observation in shop floors.

Secondary data

- Records maintained from purchase, stores and finance.
- Manuals provided by stores department.
- Magazines, internet, .etc...
- Data source: www.irecambioindia.com.

1.6.2 Tools for Analysis

The various management tools used for analyzing the data in IRI are

- ABC analysis.
- VED analysis.
- F-N-S analysis.
- 80/20 rule.

1.7 LIMITATIONS

- The industry in view of the secrecy involved in the production department did not permit me to take 100%details of stores.
- The study is being limited to 20 different components used in stores.
- The management refuses to divulge the details of prices of components in stores except for 20 items alone not to all products.
- 80/20 rule can be applied only when details of all components are produced and just for 20 components alone. The study should not be generalized.

1.8 REPORT STRUCTURE

Chapter 1: introduction to study, the first chapter of the project comprises of objectives of the study tells about the aim for which the study is carried out, scope tells about the area for which the study can applied, research methodology tells the type of research model used, limitations explain the constraints encountered during the study and the chapter scheme briefs out every chapter of the study.

Chapter 2: organization profile, this chapter comprises of history of the organization. Organization structure which explains the hierarchy of the company, various departments of the concern are described elaborately in the department's file.companys strength and future plans.

Chapter3: macro and micro analysis are explained, the analysis of automobile industry as a whole looking in to various details and contribution to whole economy are discussed and the role of Industrias Del Recambio Ltd In The Economy is Discussed.

Chapter 4: Data analysis and interpretation chapter comprises tables , their workings are calculated through the collected data through which interpretations are made.

Chapter 5: the final chapter part is conclusion this details the findings of the study and gives suggestion that the researcher put forward to the management as a result of the study.

ORGANISATION PROFILE

CHAPTER-2

ORGANIZATION PROFILE

2.1 HISTORY OF THE COMPANY

INDUSTRIAS DEL RECAMBIO INDIA PVT.LTD is a strategic Spanish venture. A state-of-the art sheet metal industry with its core activity being manufacture and export of automobile ancillary components. This technology intensive company further manufactures pressed, machined and fabricated components to meet the growing needs of the automobile industry globally.

The Company is currently catering to the Indian auto OEM needs and European automotive markets. The Fully Integrated divisions of the company employ over 250 technically qualified engineers, supervisors, and toolmakers and equipped with modern machineries and infrastructure of international standards.Thecompany has invested in advanced technology to meet the demanding quality standards and to achieve an excellence in customer focus and service.

INDUSTRIAS DEL RECAMBIO-S.L. (IR) is the parent of INDUSTRIAS DEL RECAMBIO INDIA PVT.LTD., and its main activity is the production of replacement parts for the automotive after market. Our sole product line is suspension control arms and their components. We are therefore specialists and market leaders in this field our range of parts is the widest in the market and we are well known for our high quality and good service.

The company was established in 1976 in Pamplona, at the North of Spain. This region is one of the richest areas with a great industrial activity specially focused on automotive industry.

The headquarters constructed in 1996 devotes 10.500m2 to product assembly, commercialization and management of the entire group.IR has been opening several manufacturing plants in India, Brazil and Spain equipped with sophisticated machines to meet the highest Inter national quality the area covering in these places includes
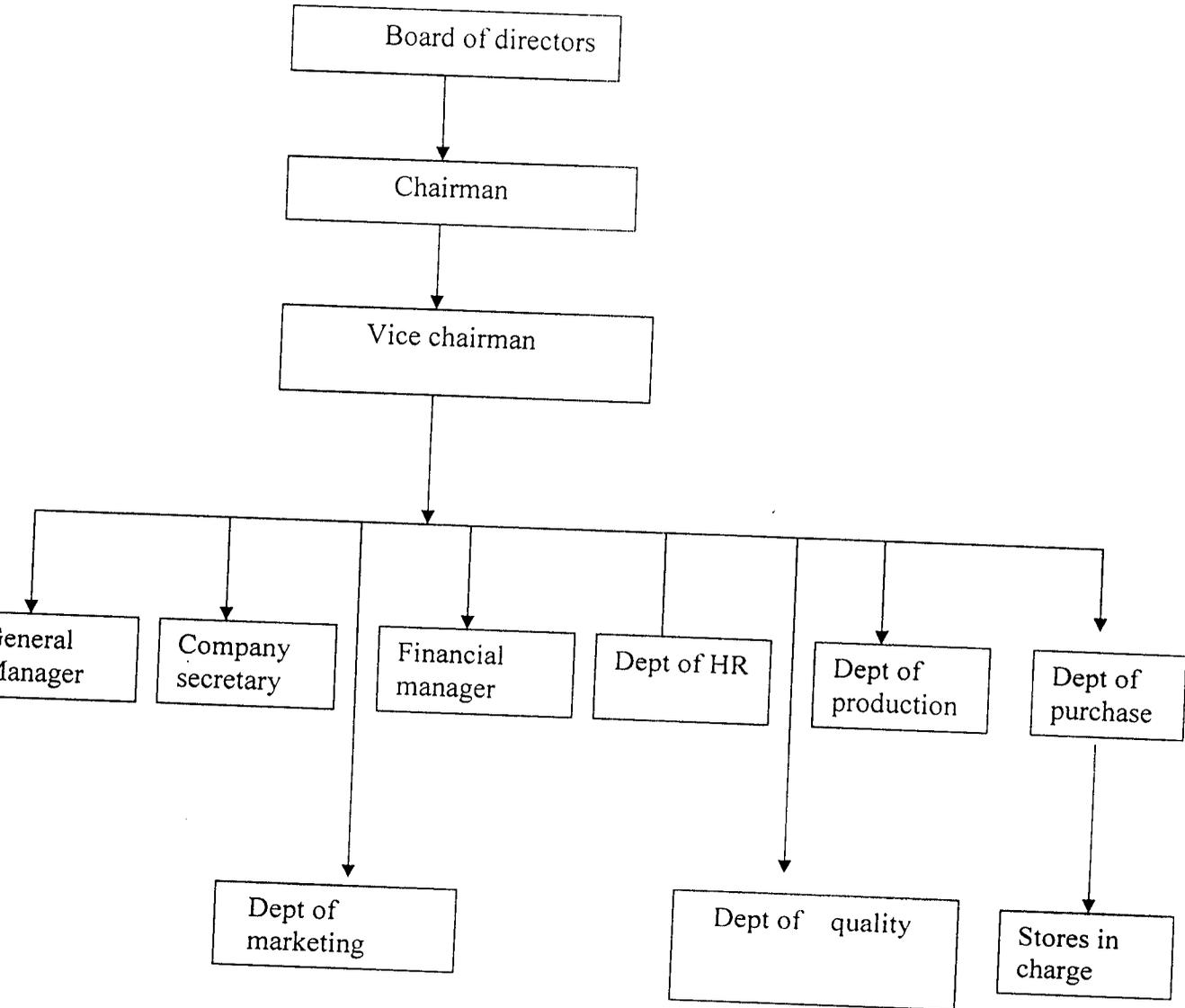
Coimbatore (India) - 8000 sq.mtrs.

Chennai (India) - 8000 sq.mtrs.

Sao Paulo (Brazil) - 2000 sq.mtrs.

Elgoibar (Spain) - 2000 sq.mtrs.

2.2 ORGANISATIONAL CHART

```
                    ┌──────────────────────┐
                    │  Board of directors  │
                    └──────────┬───────────┘
                               │
                               ▼
                    ┌──────────────────────┐
                    │      Chairman        │
                    └──────────┬───────────┘
                               │
                               ▼
                    ┌──────────────────────┐
                    │    Vice chairman     │
                    └──────────┬───────────┘
                               │
```

General Manager	Company secretary	Financial manager	Dept of HR	Dept of production	Dept of purchase

Dept of marketing		Dept of quality	Stores in charge

2.3 PRODUCTS PROFILE

1. **Four wheelers**

   IR 3300, IR302, IR300, IR4046, IR6002, IR8012, IR180302,
   IR1829D2, IR9490, IR9484, IR90, IR824C, IR832832, IR8012, IR4068...

2. **Textile machinery frames of sub parts**

   IR40583, IR6032B4, IR7206A3, IR6007, IR302 ...

2.4 COMPETITIVE STRENGTH OF THE COMPANY

Company is tied-up to several companies in different grades of partnership (from 20% to 80% of shares). They have established a strong position in strategically processes such as:

Stamping

Welding

Rubber parts manufacture

Carbon Steel forging, Aluminum forging and cast iron.

Over 500 Employees are working for IR group, and the entire workforce including all different partnerships reaches 800 people in three continents. During the previous years, the company has seen a great commercial growth due to the constant expansion into new markets and to development of new products.

2.5 FUTURE PLANS

The company's future plans are to extend other one branch in Chennai, to achieve 100%growth in sales and to build new improvemements in technologies and to update them.

2.6 VARIOUS FUNCTIONAL AREAS

FINANCE DEPARTMENT

Finance is the lifeblood of business. Finance is that business activities which is concerned with acquisition and conversion of capital funds in meeting the financial needs and overall objectives of business enterprises. The main function of this department is to provide finance to various departments. Finance department takes care about all the financial activities. It maintains a control over direct and indirect expenses. Direct expenses are those which are directly expended in production and indirect expenses include all the other expenses like salary, wages etc.

HUMAN RESOURCE

The company follows the overarching policy of "Thinking globally and acting locally". The management experience available to this Spanish venture coupled with best local talent available makes this a professionally managed organization. The work force are exposed to in-depth training programs and kept abreast of the dynamic changes in technology.

The Goal of our Human resource Management policy is to cultivate employees and create an environment to attain

PURCHASE DEPARTMENT

Purchasing procedure varies with different business firms but all of them follow a general pattern in the purchase and receipts of materials and payment obligations. The purchase department takes care of all cash and credit purchases. The materials are purchased placing orders based on indent raised from the concerned departments.

The raw materials for IRI are from steel plants of India which covers a geographic location in pune, Hyderabad, Mumbai, Delhi Tamil nadu. In Tamil nadu the raw Materials

are purchased through traders from Madurai and Chennai. A ledger is maintained in this regard. Then the purchase order is send to the supplier.

The purchase orders shall contain a clear description of the products, drawing number, quality, rate, delivery, schedules, Terms payment, mode of dispatch and other relevant data. While calculating the purchase cost the labour cost not only includes salary but also machinery depreciation like electric charges, rent maintenance etc.fixing the cost to supplier will consider with direct cost and in direct cost. Direct cost includes labour and indirect cost includes depreciation, scrap etc.

The various categories of purchase in IRI are as follows

• **Raw material suppliers** - it includes tubes, sheet materials- HRPO SHEETS, CRCA SHEETS.

•**Bought out components** - it includes forged pins i.e., any item that included with raw material.

• **Sub Contracts**-any item done for labour charges. In IRI only value addition is done on the materials.

The following steps are followed for purchasing of material:

o The concerned department that is in need of a particular material will give a purchase requisition slips to the stores department.

o The storekeeper of the material is available in stores they will cancel the purchase requisition and provide the material to the concerned department.

o If it is not available in stores the storekeeper will forward the purchase requisition to the purchase manager in the purchase department.

o In the purchase requisition slip the following things must be mentioned.

QUALITY DEPARTMENT

Quality

Quality though familiar to everyone is one of the most important issues that all sectors have focused on in last 20 to 30 years, as markets have become much more competitive , quality has become the key ingredient for success in today's business . Quality has become a prime focus of business attention because of the impact it has on the sustained performance and customer satisfaction. The quality movement has been growing through out the world for many years; Quality is the need for the hour, crux of the time.

Meaning

Quality is a relative term. It is generally used in reference to the end use of the product. For example one could argue that the gear used in wrist watches is of better quality used in automobile gear boxes. But both the gears are considered of good quality if they perform satisfactorily the intended functions. This quality is defined as the fitness for use.

Dimensions of quality

The different dimensions of quality are

- Performance
- Features
- Conformance
- Reliability
- Durability
- Service
- Response
- Aesthetics
- Reputation

Quality Control

It is imperative that we give more than what we take from our customers and the society. Our products must serve our customers beyond their expectations."

Quality Policy

We provide quality goods to its rapidly expanding customer base. Emphasis is laid on understanding clients need and fostering a long term relationship. IR INDIA supplies components to automobile manufacturers in industrialized European nations of **GERMANY, SPAIN** and **ITALY.** It has established itself successfully and earned a reputation as the supplier of cost competitive superior products with a short lead time.

IR INDIA adopts stringent quality control measures and constant upgrades to ensure superior quality products with zero defects. With quality built in to the process at every stage, it strives to provide reliability of the final product. Latest management techniques like value engineering make the final product cost competitive. IR INDIA pays Particular Attention to Quality of Product, Processes, Services & Bench mark against Global quality Standards. Empowered Continual improvement team work constantly strives to improve product, quality, cost, delivery safety moral and all the other kind of the related aspects.

IR INDIA accredited To ISO/TS16949:2002, TUV Rhineland Group Certification. IR India Products have been tested to meet American & European Standards. TQM, TPM, LEAN Manufacturing, SIX Sigma are practiced to achieve a world class quality, environment and social responsibilities. IR INDIA to assure total health protection to its employee and environmental to its society.

One of the quality policies of the IRI stands as,

- Quality is respect for people
- Quality is constancy of purpose
- Quality is global entry
- Prosperity through Quality

The other Quality policy speaks as follows.

"We are committed to provide world-class products and services with due concern for the environment and safety of the society". This will be achieved through:

- Continuous improvement
- Technology Up gradation
- Cost Reduction
- Total employee involvement
- Improved customer satisfaction
- Effective delivery performance
- Meeting specific customer requirements
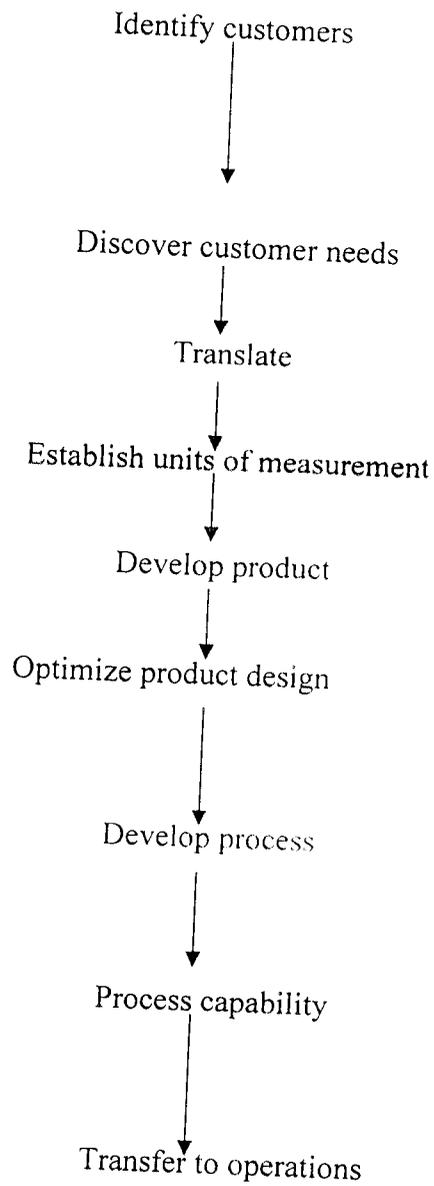- Leveraging latest techniques
- Provision for necessary training

Japanese Principles

IRI follows the Japanese Principle while concentrating on their quality

SEIRI	-	Sorting
SEITON	-	Organizing
SEISO	-	Keeping Work Environment clean
SIEKETSU	-	Set Standards and Flow
SHITSUKE	-	Self Discipline

ROAD MAP

This is the road map of the quality plan is as follows

Identify customers

↓

Discover customer needs

↓

Translate

↓

Establish units of measurement

↓

Develop product

↓

Optimize product design

↓

Develop process

↓

Process capability

↓

Transfer to operations

FUNCTIONS

- The main function of the quality department is to check the quality of the products produced. First the inward inspections on all the goods that are purchased are made. The quality and the grade of the goods are tested for and checking is done in order to find whether there is any complaint. The certification of the goods is verified.

- Online inspection is made in order to find whether there is any defect and problem in the cutting process and all the other process involved in production. Here spot inspection is made.

- Welding inspection is made in order to find whether there is any defect in the welding process if so the necessary steps are taken to correct those defects.

- The last kind of the inspection is the final inspection. This is the full inspection where the random sample of the products produced are taken and inspected. If there is any defect then the product is rejected. The recording of all the samples are made and an inspection report is prepared and submitted to the management

- An online inspection report is prepared regarding the shift details, officer incharge etc.

Control Plan

The plan that is being used for controlling the quality is termed as the control plan. There are three types of control plan. Process FMEA, renewal registers etc.

Observation

A notice board is maintained in front of the quality department in which the photocopies of the defective products are displayed. If there is any defect in the product that is being sent to the customer, the customer sends an image of the defective part and if necessary the goods are also sent. Then further steps are taken and necessary corrections are made.

A corrective action report should be submitted regarding the problem that has occurred, their root cause, corrective action plan, preventive action plan, Verification. Then the audit on the quality department is made which consists of eight processes.

Cages for all their products are their in order to test their sizes, thickness etc in order to confirm that all the products that are manufactured are defect less.

STORES DEPARTMENT

In this department which places orders and receives raw materials on behalf of the manufactures the product are kept in stores department. A storekeeper is appointed to look after the stores. His job is assigned to take care of the spares and to maintain the stores ledger.

The worker who is in need of spare parts may come and collect it at any time with the signature of the departmental heads. This book is known as Issue Order. In the store they keep the account for what are all things stored in the stores. If any item comes into the store they will register it in the book called inward register. From this inward register they will make entry in the material inward receipt from this they pass it to the store ledger and they will equalize the goods issue and the accounts.

In IRI before 30 days time only the company gets the order for manufacturing the materials. Then only the inventory is being checked. Based on this the production plan and pending list is prepared and then the materials are manufactured.

Functions of stores:

- Identification of all material stores
- Receipt of incoming goods
- Inspection of all receipts
- Insurance Claims
- Storage Accounting
- Issues
- Materials Handling

- Packing and Dispatching
- Maintenance of stock records
- Stores Accounting
- Inventory Control
- Stock-Taking
- Disposal of scraps

MARKETING DEPARTMENT

Marketing is a human activity directed at satisfying needs and wants through an exchange process. In IRI marketing is mainly done for satisfying the customer's needs and wants. A market-focused, or customer-focused, in this organization first determines what its potential customer's desire, and then builds the product or service. Marketing theory and practice is justified in the belief that customers use a product/service .Two major factors of marketing in IRI are the recruitment of new customers (acquisition) and the retention and expansion of relationships with existing customers (base management).

IRI follows 4PS for its successful marketing plan. They are as follows

•**Product:** The product aspects of marketing deal with the specifications of the actual goods or services. In IRI the scope of a product generally includes supporting elements such as warranties, guarantees, and support.

• **Price:** This refers to the process of setting a price for a product, including discounts. The price need not be monetary - it can simply be what is exchanged for the product or services.

• **Promotion:** This includes, and refers to the various methods of promoting the product advertising, sales promotion, publicity, and personal selling, brand etc.

• **Placement or distribution** refers to how the product gets to the customer. In other words it's the channel by which a product or services is sold.

These four elements are often referred to as the marketing mix A marketer can use these variables to craft a marketing plan in IRI.

MACRO - MICRO ANALYSIS

CHAPTER-3

MACRO AND MICRO ANALYSIS

MACRO ANALYSIS OF AUTOMOBILE INDUSTRY

The Indian automobile component industry has finally begun to emerge on its own. It has begun to take major steps towards making world class Quality Systems by imbibing the ISO 9000/QS 9000 Quality Systems. Exports have been to the tune of 10% of output in the last decade.

Exports grew from US$2960 in 1995-96 to US$3110 in 1996-97. The principal export items included tractor parts, motorcycle parts, piston rings, fuel injection parts, radiators, and headlamps, auto bulbs etc.However, this section has been long neglected and does not get the due it deserves. We end these lacunae by putting up a whole segment on this important industry. Read on about details on the major auto parts, their dealers, and the places they are manufactured

A small car has as many as 3000 different components, each of which designed separately to work in perfect coherence with each other. Sounds complicated? Yet interesting! Let us peep into the 'black box' and learn a little more than we already know about our favorite vehicle. A vehicle can broadly be seen as comprising of four main sections-The engine Vehicle Frame, Covering body (including interiors in case of four wheelers) Suspension, brakes & wheels

Following India's growing openness, the arrival of new and existing models, easy availability of finance at relatively low rate of interest and price discounts offered by the dealers and manufacturers all have stirred the demand for vehicles and a strong growth of the Indian automobile industry.

The data obtained from ministry of commerce and industry, shows high growth obtained since 2001- 02 in automobile production continuing in the first three quarters of the 2004-

05. Annual growth was 16.0 per cent in April-December, 2004; the growth rate in 2003-04 was 15.1 per cent the automobile industry grew at a compound annual growth rate (CAGR) of 22 per cent between 1992 and 1997. With investment exceeding Rs. 50,000 crore, the turnover of the automobile industry exceeded Rs. 59,518 crore in 2002-03. Including turnover of the auto-component sector, the automotive industry's turnover, which was above Rs. 84,000 crore in 2002-03, is estimated to have exceeded Rs.1,00,000 crore (USD 22. 74 billion) in 2003-04.

Automobile Dealers Network in India:

In terms of Car dealer networks and authorized service stations, Maruti leads the pack with Dealer networks and workshops across the country. The other leading automobile manufactures are also trying to cope up and are opening their service stations and dealer workshops in all the metros and major cities of the country. Dealers offer varying kind of discount of finances who in tern pass it on to the customers in the form of reduced interest rates.

Major Manufacturers in Automobile Industry

- Maruti Udyog Ltd.
- General Motors India
- Ford India Ltd.
- Eicher Motors
- Bajaj Auto
- Daewoo Motors India
- Hero Motors
- Hindustan Motors
- Hyundai Motor India Ltd.
- Royal Enfield Motors
- Telco
- TVS Motors
- DC Designs
- Swaraj Mazda Ltd

Government has liberalized the norms for foreign investment and import of technology and that appears to have benefited the automobile sector. The production of total vehicles increased from 4.2 million in 1998- 99 to 7.3 million in 2003-04. It is likely that the production of such vehicles will exceed 10 million in the next couple of years. The industry has adopted the global standards and this was manifested in the increasing exports of the sector. After a temporary slump during 1998- 99 and 1999-00, such exports registered robust growth rates of well over 50 per cent in 2002-03 and 2003-04 each to exceed two and- a-half times the export figure for 2001-02.

Automobile Export Numbers

Category	1998-99	2004-05 (Apr-Dec)
Passenger Car	25468	121478
Multi Utility Vehicles	2654	3892
Commercial Vehicles	10108	19931
Two Wheelers	100002	256765
Three Wheelers	21138	51535
Percentage Growth	-16.6	32.8

The Key factor behind the Upswing

Sales incentives, introduction of new models as well as variants coupled with easy availability of low cost finance with comfortable repayment options continued to drive demand and sales of automobiles during the first two quarters of the current year. The risk of an increase in the interest rates, the impact of delayed monsoons on rural demand, and increase in the costs of inputs such as steel are the key concerns for the players in the industry.

As the players continue to introduce new models and variants, the competition may intensify further. The ability of the players to contain costs and focus on exports will be critical for the performance of their respective companies. The auto component sector has also posted significant growth of 20 per cent in 2003-04, to achieve a sales turnover of Rs.30,640 crore (US$ 6.7 billion). Further, there is a potential for higher growth due to outsourcing activities by global automobiles giants. Today, this sector has emerged as another sunrise sector.

Even Growth

Opposing the belief that the growth in automobile industry has catered only to the top income-stratum of society, Growth of exports of 32.8 % in the first three quarters of 2004-05, the fastest growth in volumes has come from commercial vehicles as against passenger cars. Between 1998-99 and 2003-04, output of commercial vehicles has grown 2.8 times Compared to the 2.2 times increase in passenger cars. Furthermore, two-wheeler output continues to dominate the volume statistics of the sector. In 2003-04, for every passenger car turned out by the sector, there were 7 two-wheelers produced. In the two wheeler segment, there is a greater preference for motorcycles followed by scooters, with both production and domestic sales of motorcycles increasing at faster rates than for scooters in the current and previous years. However, mopeds have registered low or negative growth. Export growth rates have been high both for motorcycles and scooters.

MICRO ANALYSIS

IRI is having major expansion plans in order to cater to the growing demands for auto components in global market.IRI has won the confidence and acclaimed of original equipments manufacturing in auto industry for productivity,quality,cost and delivery schedules. As a result, the demand for components by way of ordered books is growing every day. In view of the above mentioned facts fully supported by competent technological and managerial capability. The top management has decided to go in for higher investment and expansion. They are also likely to send executives abroad for market study, training and collaborations.

DATA ANALYSIS AND

INTERPRETATION

CHAPTER -4
DATA ANALYSIS AND INTERPRETATION

ABC ANALYSIS

ABC analysis is carried out by grouping items on the basis of their annual cost volume consumption. 'A' group items are those, which have highest value of volume usage, 'B' with intermediate values and 'C' group with the least value. This grouping helps to identify items that enhance inventory performances when properly controlled.

Appropriate inventory management techniques are then used to manage items according to their priority levels. Thus close attention is paid towards managing 'A' group inventories as they contribute significantly to high performance levels, followed by 'B' and 'C' group inventories. The ultimate goal of ABC analysis is to closely supervise the items according to their share in the inventory investment. This helps to reduce time and minimize efforts towards managing those items which though are not properly taken care off, do not show noticeable effect on inventory performance.

TABLE 4.1

The Classification of ABC Analysis in IRI with Annual Consumption Of The Year

NO	COMPONENT	PRICE	UNITS/YEAR	ANNUAL CONSUMPTION RS/YEAR
1	IR3300	266	100	26600
2	IR3301	193	300	57900
3	IR302	325	700	227500
4	IR4046	268	3000	304000
5	IR4068	1500	500	750000
6	IR4065	416	1000	416000
7	IR6002	384	1050	403200
8	IR6007	400	300	120000
9	IR6006	1500	750	376500
10	IR8012	416	6000	300000
11	IR1803O2	52	800	41600
12	IR1829 D2	52	9000	300000
13	IR40583	90	3500	315000
14	IR6032B	58	150	87000
15	IR7206A3	105	2010	211050
16	IR9484	72	7000	504000
17	IR9490	43	10000	82000
18	IR824C	36	6000	438000
19	IR910B6	43	9000	387000
20	IR823382	36	500	18000

TABLE4.2

WORKINGS OF ABC ANALYSIS

NO	COMPONENT	PRICE	UNITS/YEAR	ANNUAL CONSUMPTION RS/YEAR
1	IR4068	1500	500	750000
2	IR9484	72	7000	504000
3	IR824C	36	6000	438000
4	IR4065	416	1000	416000
5	IR6002	384	1050	403200
6	IR910B6	43	9000	387000
7	IR6006	1500	750	376500
8	IR40583	90	3500	315000
9	IR4046	268	3000	304000
10	IR8012	416	6000	300000
11	IR1829 D2	52	9000	300000
12	IR302	325	700	227500
13	IR7206A3	105	2010	211050
14	IR6007	400	300	120000
15	IR6032B	58	150	87000
16	IR9490	43	10000	82000
17	IR3301	193	300	57900
18	IR1803O2	S	800	41600
19	IR3300	266	100	26600
20	IR823382	36	500	18000

TABLE 4.3

TABLE SHOWING CLASSIFICATION OF ABC ITEMS

O	COMPONENTS	PRICE	UNITS /YEAR	ANNUAL CONSUMPTION RS/YEAR	CUMMULATIVE VALUE OF ANNUAL CONSUMPTION	CLASS
1	IR4046	268	3000	304000	804000	A
2	IR4068	1500	500	750000	1554000	A
3	IR9484	72	7000	504000	2058000	A
4	IR1829 D2	52	9000	468000	2526000	A
5	IR824C	36	6000	438000	2964000	A
6	IR8012	416	1000	416000	3380000	A
7	IR4065	416	1000	416000	3796000	A
8	IR6002	384	1050	403200	4199200	A
9	IR910B6	43	9000	387000	4586200	B
10	IR6006	502	750	376500	4962700	B
11	IR40583	90	3500	315000	5277700	B
12	IR302	325	700	227500	5505200	B
13	IR7206A3	105	2010	211050	5716250	B
14	IR6007	400	300	120000	5836250	C
15	IR3301	193	300	57900	5894150	C
16	IR9490	43	1000	43000	5937150	C
17	IR1803O2	50	800	40000	5977150	C
18	IR3300	266	100	26600	6003750	C
19	IR823382	36	500	18000	6021750	C
20	IR6032B	58	150	8700	6030450	C

Interpretation

From the above table it is inferred that 70% contributes under A items, 30% under B items, and 10% contributes under C items.

VED CLASSIFICATION

V- vital, E-essential and D- desirable only based on this classifications production takes place. V-class of has to be stocked adequately to ensure the operation of the plant because the non-adequately to ensure the operation of the plant because the non-availability of component which are of vital nature can cause havoc and stop production. A little risk may be taken in the case of the E-class of spares it includes nuts, bolts tubes, etc...Though they are not vital but essential for production Stocking of desirable spares can even be done away with if the lead-time for their procurement is short. D-class includes painting, fitting, packing, etc... Only if all these features are available it becomes a complete product

Procedure adopted

Classification of components into vital, essential and desirable categories should be made by the technical department or by those in charge of the maintenance of the plant of the units under review. Therefore, all departmental heads were consulted and according to the information given by them they have been classified as VED used for production plan.

Table 4.4

Table showing classification VED analysis

S.No	COMPONENTS	VED ANALYSIS
1	IR3300	V
2	IR3301	V
3	IR302	D
4	IR4046	V
5	IR4068	V
6	IR4065	V
7	IR6002	V
8	IR6007	V
9	IR6006	V
10	IR8012	V
11	IR1803O2	E
12	IR1829 D2	E
13	IR40583	V
14	IR6032B	E
15	IR7206A3	E
16	IR9484	V
17	IR9490	V
18	IR824C	D
19	IR910B6	E
20	IR823382	D

Interpretation

From the above table a vital item contributes 60%, essential items contribute 25% for production, and desirable items contribute 15% for finishing a product.

F-N-S ANALYSIS

- **F-fast moving**
- **S-slow moving**
- **N-normal moving**

FNS is being issued from stores department. Based on the details provided from the stores department, production plan is being scheduled and the goods are being stocked according to the demand in IRI. In IRI the components that are having high demand in the market are termed as fast moving items and are being given first preference. The components that are having normal moving or slow moving are termed as slow moving items and second preference is being given and the components that are non moving are given no preferences as it may not have demand in the market.

Table 4.5

Table showing classification of F-S-N;

S.NO	COMPONENTS	F-S-N CLASSIFICATION
1	IR3300	F
2	IR3301	N
3	IR302	N
4	IR4046	N
5	IR4068	F
6	IR4065	F
7	IR6002	S
8	IR6007	N
9	IR6006	S
10	IR8012	S
11	IR1803O2	F
12	IR1829 D2	S
13	IR40583	S
14	IR6032B	N
15	IR7206A3	N
16	IR9484	S
17	IR9490	N
18	IR824C	S
19	IR910B6	N
20	IR823382	N

Interpretation

From the above table it is inferred that 20% contributes as fast moving items, 35% contributes to be slow moving items, and 45% contributes to be slow moving item.

80/20 RULE;

This rule is being applicable when the whole components are analyzed. By applying the 80/20 rule in IRI we can know which components contribute more value to the company and the others to less importance or vice versa... Based on these rule the changes can be made for further improvement.

CONCLUSION

CHAPTER-5

CONCLUSIONS

5.1 RESULTS AND DISCUSSIONS

1. Based on the ABC analysis it has been found that components

IR 4046

IR4068

IR9484

IR1829

IR8012

IR4065

IR6002

IR910B6

have high value .so highest preference should be given in stocking the items.

2. In FSN analysis it has been found that six items like

IR6002

IR824C

IR9484

IR1829D2

IR6006

IR8002; is slow moving due to some defects. So proper changes have to be made technically.
Three items are fast moving and have high market value. They are

IR3300,

IR4068,

IR1803O2.

3. In VED analysis it has been found that 12 items are categorized as V-items and vital importance is given to those items alone.

The industry is presently not carrying out any inventory control tools and techniques other than ABC analysis. In a 100% export oriented unit it is essential the industry adopts to the latest and most modern techniques like VED, FNS, and 80/20 RULE. Further it is noted that the industry is not carrying out MMF, MSP and PAF.

5.2 CONSIDERED RECOMMENDATIONS

I suggested the company to follow 80/20 rule so that, the company can concentrate in producing the goods that have high importance, it can earn more profit and just in time so that it can reduce the inventory practically, and can produce the goods with out any failure and delay. The production process may also not get stopped. By producing the products with out any delay it creates good image to the company and high profits can be earned at shorter period of time.

Further its better that the company can follow MMF, MSP and PAF to adopt the latest modern techniques

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