CHAPTER - 1

INTRODUCTION

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Chapter - I

Introduction

Important features of Engineering Industries:

The Indian Engineering Industry has now truly emerged as a dynamic sector in the country's industrial economy. Indeed it has put India on the map of Industrial World and given us much needed self-reliance in vital areas. Since independence, it has gathered momentum and has passed through a steady transition in keeping with domestic needs and the requirements of the international markets. From a modest beginning, the engineering industry now produces a very wide range of products like Plant & Machinery for steel, chemicals and fertilisers, cement plant, sugar and paper machinery, electrical and construction machinery, power generating transmission and distribution equipment, machine tools, railway rolling stock, commercial vehicle, earth moving equipment, leather, textile mill machinery and a large number of other industrial goods and consumer durables. The diversified and modern technological base has been developed through indigenous development and research combined with selective import of technology from abroad.

Today, the Indian engineering industry produces goods worth over Rs.805 billions. It accounts for over 40 per cent of the total output of the country. This sector of the industry employs over 3 millions people. At present investment in the engineering industry is estimated over Rs.400 billions.

The engineering industry has been identified as one of the thrust areas for export promotion. According to the latest available data provided by EEPC (Engineering Export Promotion Council), engineering exports in the first two years of present decade has registered at the rate of 38 and 39 per cent respectively.
Engineering exports for 1990-91 was amounted to Rs.32550 crores and for 1991-92 it was Rs.4525 crores. The target fixed for 1992-93 was of Rs.6250 crores. The overall export during 1992-93 indicates a healthy trend.

**Engineering Industries - Importance & Problems:**

Engineering Industries have great importance in our national economy. The engineering industry is a main industry carrying lion-share of economic development. Around 75% development and employment share of industrial development goes to engineering industry.

After independence government concentrated on industrial development. The 5-year plans provided many facilities for development of industrial sector. The central government has given state-wise facilities for the development of industry. The Maharashtra government has also worked accordingly through MIDC (Maharashtra Industrial Development Corporation), SICOM (State Industrial Corporation of Maharashtra), MSFC (Maharashtra State Financial Corporation), DIC (District Industrial Center) and MSIDC (Maharashtra State Industrial Development Corporation). During the period of 1970 to 1990, industry was growing rapidly. We can say this was a boom period for Industry, specially Engineering industries. The Maharashtra State was very aggressive during this period and many other statics employment attracted towards Maharashtra State.

After 1990, recession’s started all over the world and in India too. Maharashtra State also affected by this recession. The growth became slow and slackness came in the Industry. Due to this problem Engineering Industry suffered a lot and many other industries too. Many became sick and some of sick industries ran to BIFIR - for restructuring of funds.
The area of engineering industries covers capital goods, textiles, transport equipment and electrical machinery as follows:


Textiles :- Textile Machinery

Transport Equipment :- Automobile and Road Transport equipments.

Electrical Machinery :- Electrical Motors.

**Capital Goods Industry**

**Machine tool Industry in India:**

India today produces a wide range of CNC (Computer Numerical Control) controlled machines such as horizontal and vertical machining centers and various other CNC controlled special purpose machines. We are self sufficient in terms of general purpose machines such as lathes, shaping machines drilling machines, grinding machines etc. Except for the fine optically controlled accessories, almost all accessories for machine tools are manufactured in India.

But the share of CNC machines in the total production is less (only 41%), compared to industrially advanced countries (70%). But the share is expected to increase by the year 2005 indicating a shift in user preferences.

**Emerging trends in Technology and Manufacturing:**

Manufacturing is changing from “Steady state operation to extremely flexible one”. Flexibility means “agility”, meaning a manufacturer’s entire corporate response to shift in market needs.
An agile manufacturing system should be able to produce products at a cost normally associated with high volume production systems, while retaining the agility in the market demand. It is centered on the concept of speed i.e. responding quickly to changes in the market place. Since an agile system is more complicated than a conventional system, software tools like simulation and modelling are needed to provide insight into the design and implementation of the system.

**Boilers and Pressure vessels:**

Boilers and pressure vessels are components of great importance in the process industries. Although India produces a large volume of boilers and pressure vessels, the amount exported is extremely low.

**Technology:**

Initially riveting plates were used to make boilers. With the advent in welding technology, today boilers are almost entirely made by welding. Improvements in material technology have reduced the weight and size of boilers and improved efficiency. Submerged arc welding, multispindle programmed automatic drilling and such other manufacturing techniques have now become common in the production of boilers. Controls have shifted from mechanical to electrical and from electrical to electronics.

**Boiler Industry in India:**

Some of the strong points of Indian boiler industry are:

(a) A strong technical know-how due to different collaborations.

(b) Ability to adapt new technology with regard to fuels etc.
(c) Less expensive but more skilled labour and the ability to innovate.

Some of the weaknesses are:
(a) Lack of focus on quality and reliability.
(b) Poor understanding of packaging, transportation and shipping.
(c) Non availability of good quality control equipment and
(d) Poor quality of documentation.

**Future:**

Fuel efficiency has been the main thrust so far. Since, any improvement in fuel improves efficiency. Wastage of fuel due to the asynchronous procedures response to load factor and such control factors are likely to assume great importance.

Fuels used traditionally are likely to change due to the growing importance given to clean environment. Coal slurry, classified fuels, biologically converted biomass, solar power etc. are the possible alternatives.

**Textile Machinery**

**Technology Perspectives**

**Introduction:**

Along with the development of textile industry, the Indian Textile machinery industry is also expanded. This industry is presently in a position to manufacture the entire range of textile machinery.

However, some sophisticated textile machines are still imported. Lower machine productivity has been a major cause for sickness in textile industry.
Modernization is essential to improve productivity, quality as well as cost effectiveness. In this context the technology perspectives and options available to the Indian textile industry are also locked.

**Ginning and spinning:**

Ginning is the process of removal of cotton fibres or lint from seeds. Spinning is the sequence of operations to convert fibres into yarn. These operations are opening, cleaning, carding, drawing, combing, roving, spinning and plying.

**Available technology:**

In India, most of the gins are low production (40 kg/hr) single roller and double roller gins. They are obsolete. The gins abroad are high production saw gins. The opening mills in India are traditional, starting with bale openers (manual or mechanical) and ending with lap forming scutcher. Extremely efficient machines that combine several cleaning stages (CVT 4-Trutzchler) have been developed abroad. Modern bale pluckers ensure very high level of opening. Automatic programmable feeds are used. Chute feed is becoming widespread both in India and abroad. The carding machines in India have semi high and high production facilities. Modern mills use high production cards, with multiple licker-ins, larger cardigan area, on line nip counting, auto-levelling and auto-doffing. Worsted cards have advanced technology to deliver at 100 kg/hr. in drawing. The modern frames have very high delivery speeds (800 m/min), single delivery is equipped with autolevellers and Silver machines.

**Electrical Machinery:**

Electric motors play a pivotal role in industrialization. They range from few watts to several megawatts, from low voltage to high voltage, low speeds to very high speeds. The design of such motors consists of stator, bearings and rotor design.
Development

Silicon Steel

Steel having silicon is made by cold rolling process. There is possibility of using amorphous steel for very large motors. For motor upto 10 hp, non-silicon steel is used.

Insulation

The insulating enamel of winding wires used in a majority of motors is polyester based with thermal class B. Polyester-based enamel with thermal class F is also available. For critical applications, polyetherimide and polyamide of thermal class-H are also considered. Mica and Kapton are now being used for class-H.

Bearings

Active magnetic bearings have been developed. Cooling systems are very simple now.

Transport Equipment

During the last nine decades, the change had been from horse or steam driven to automobiles, trucks and aeroplanes. In future, starting from unmanned space vehicles and photonic rocket ships travelling at the speed of light, human journey to space might become common.

Many break-through to new frontiers in all phases of our life are taking place at present and transportation is no exception. Various factors such as population explosion, object poverty, constraint of resources, directions and strategies of yester-years are acting as barriers to these advances, in our socio-economic life.
If modern technology results into solutions, by-products of which are detrimental, we have missed some dimensions of that technology.

**Automotive Technology:**

It is proposed to make assessment of the existing technology at macro level, forecast technological developments in the next decade and consider their suitability and adaptability to Indian conditions. Attempt will also be made to visualize the appropriate technological base that would be required although qualification of resources has been found to be difficult, if not impossible.

**State of Art:**

Indigenous development of technology initially focused on adapting the foreign designs to Indian conditions. Considerable R&D efforts have been put in and new vehicular concepts were introduced. These efforts were however limited, perhaps, because of excessive regulation by the Govt., lack of economies of scale due to low market volumes and inadequate resource base. In spite of this, individual manufacturers have updated product line-up and some of their vehicles have been exported. There have been several achievements of these indigenous technologies. Low market volumes and small scale nature of auxiliary manufacture, on which the automotive industry depended, tended to limit investments in technological development in these areas.

**Automotive Technology - Present Scenario:**

Indigenous development of technology initially focussed on adapting the foreign designs to Indian conditions to match the performance, durability and reliability data. Indigenous technology has been limited by:
(a) Excessive legislation by government.

(b) Lack of economies of scale due to low market volumes and inadequate resource base.

Some of the indigenous technologies are:

(i) Conversion to direct injection systems in commercial
diesel engines.

(ii) Up-gradation in load carrying capability of trucks.

(iii) Development of multi-axle vehicles and modernization.

Ancillary industry has also contributed in:

(i) Introduction of new braking systems

(ii) Alternatives in replacement dynamos etc.

Collaboration with Japanese automotive industries for cars, light vehicles etc. has been undertaken, e.g. Maruti Udyog with Suzuki Motors. Telco and Ashok Leyland have produced vehicles with indigenous technologies.²

II **Engineering Industries in Maharashtra:**

As in case of India, industrial structure in Maharashtra, the premier industrial state in the country is dominated by a large number of small scale units. But the contribution of large scale and medium scale units, as in India, is larger in terms of both output as well as value added. Comparisons over a decade suggest that capital investments in Maharashtra are growing at a faster rate than the all India level. Conversely, the rate of growth of employment at the state level has been lower than the macro level. The industry in Maharashtra, is more efficient than the all-India level, as is suggested by the relatively lower fixed capital to net value added and fixed capital to gross output ratio.
Maharashtra has also been a major contributor to the gross output. Ever since 1987-88 the State's share in the gross output has hovered around 20% and in 1992-93 it was an imposing 21.2% of the total. Other traditional competitors of Maharashtra Viz. Gujarat, Tamil Nadu, U.P., Andhra Pradesh & Madhya Pradesh have lagged far behind Maharashtra in this respect. Nevertheless, if one takes into account the total share of these 7 States, it amounts to more than 70% of the total output generated. Other States in the country only account for less than 5% each of the output.

Finally, although the general picture at the State as well as All India level is that of a fairly healthy growth, the locational imbalance, static levels of efficiency and falling employment should be viewed as negative factors which require firm tackling.³

III Special Features:

Size of Units:

All the Units taken for the study are old than 17 years and registered with the stock exchange. These units are public limited and comes under the category of large scale. Following details provides the size of individual units.

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* Capacity expressed in numbers.
Removing regional imbalance:
To remove regional imbalance, Government has declared subsidy, tax benefit and export benefit for the development in rural area. To decide benefit category, Govt. has created four zones for Industries. These categories are as follows:

A Zone - No benefit
B Zone - Very little benefit
C Zone - Medium benefits
D Zone - Maximum benefits

Delicensing: Govt. has removed licencing policy to speed up the Industrial Growth. Permission is necessary only in case of Chemical & Explosives Industries. Initially, licence was necessary to start any type of Industry. To get License, lot of documentation & reports were required. Now, job is very simple comparatively.

Globalization & Liberalization: Since 1992, Govt. has declared liberalization schemes to promote Industrial Development and invited foreign investments through globalization policies. This has given a boost to the growth rate of Industrial sector.

Relaxation in Taxes: Govt. has reduced the rates of Income Tax. Govt. has also simplified the Excise and Custom duty structure to promote Industrial Development. Small Scale Industries can also enjoy tax benefits due to increase in exemption limit in terms of duration and amount.
IV Financial Pattern:

"Financial Liberalisation" has been a major part of the New Economic Policy since 1991. The reforms in the real sector were accompanied by major changes in institutions and rules of the financial markets. Financial liberalisation has also had its impact on the ways of financing the industry. We focus on the major sources of external finance viz. banks, financial institutions and capital market.

Trends in Bank Credit:

A major change in the working of the banks during post-liberalisation period was affected by the emphasis on sound financial health of the banks. Most of the nationalised banks and the newly emerging class of private sector banks and foreign banks laid stress on improving the quality of their credit basket and on recovery targets. Changes made in the accounting norms made banks more cautious about the risk elements of a loan. These factors have certainly hit the expansion of bank credit since 1991-92.

Role of Financial Institutions (FIs):

Even before the financial liberalisation, India had a well-established network of development financial institutions. Almost all these institutions were government owned and controlled. During the pre-reforms period, they had an easy access to subsidised sources of funds. But, with the onset of reforms, two major changes were brought about in functioning of the FIs: interest rate deregulation and contraction of subsidised sources of funds.
Stock Markets : The Alternative :

Even while the expansion of bank credit slowed down in post-reforms period and disbursements of FIs grew at a lower rate since 1993-94, industry could finance its growth with the help of the huge amounts raised in the primary capital market.

In 1992, Securities Exchange Board of India (SEBI) Act was passed and the office of Controller of Capital Issues (CCI) was abolished. Under the SEBI's regime, stock markets were opened up for foreign investors, companies going for new issues were forced to disclose all the relevant information and the markets became transparent. This proved to be a major boost for investors' confidence as the amount raised in primary capital market recorded almost 200 per cent growth in 1992-93. Since then, primary issue market has become a dominant source of external finance for Indian Corporates.

Relative Significance of Alternative Sources :

The composition of external sources of industrial finance has undergone major changes in the post-reforms period. While borrowings contributed major share of funds to the industry upto 1992-93, a complete reversal of roles was witnessed in 1993-94 and 1994-95. Capital market replaced borrowings to capture the top slot. This is also reflected in the declining debt equity ratio.

During 1991-92, bank credit expanded at a much lower rate, even though deposits showed a normal growth. The leading rates were pegged high in view of the mounting inflationary pressures. However, performance of FIs was impressive as disbursements increased by 35 per cent.4
V Objective of the Study:

In the interest of a sound financial policy, every company should also analyse its accounts periodically. The financial statements are frequently voluminous, cumbersome and detailed to the point where they are almost useless to top management.

"The analysis and interpretation of the financial statements results in the presentation of information that will aid in decision making by business managers, investors and creditors as well as other groups who are interested in the financial status and operating results of the business."

The process of analysis can be summarised as follows,

(i) The figures should be arranged logically, group wise, head-wise, previous year and current year for the comparison and analysis.

(ii) The figures are nearest to thousand or lakhs have to simplify the process of analysis.

(iii) The analysis is designed to make a careful study of past financial records.

(iv) The analyst should utilize his knowledge of the financial statements to draw up or particular programme tailored to fit a specific need.

(v) The analysis of financial statements of a business enterprise may be conducted either internally or externally.

While analysing the statement analyst attempts to interpret and draw the conclusions from the statements. The financial statements are intended to give an accurate picture of concern's financial conditions and operating results in a condensed form. The overall objective of a business is to earn a satisfactory return on the funds invested in it, and maintain a sound financial position. The financial statement analysis objectives are different for various users i.e. management, investors, creditors, labours, Government and others.
Importance to management - Management can get an overall view of the financial operations and condition of the company, which enables them to plan and control company's activity more effectively.

Importance to investors - Investors are concerned with the safety of their investment and the ability of the company to earn profit. The investors are interested in earnings per share. They calculate the shares book value and market value and find the price earning ratio.

Importance's to creditors - Creditors are interested in the company's ability to meet its financial obligations. A creditors will be interested in ascertaining whether the company can employ the funds loaned to it in such a way that it will be able to meet current interest obligation and repay the loan when it falls due.

Importance to government - Government regulates economic activities by analysis of financial statements. The earning ratios and turnover ratios are used as barometers to indicate the health of an industry as a whole.

Importance to labour - Labour has an interest in the operating results and the financial strength of a company. The remuneration of the worker is generated from the company's revenues. The workers wage to a great extent depends upon the success of the firm.

Importance to others - The news agencies, trade association, labour bureaus, economics, stock exchange and resemble workers are interested in the financial results of the companies.
Techniques of financial statement analysis:

Following techniques are commonly used for analysis of financial statement:

1. Ratio analysis
2. Trend analysis
3. Funds flow analysis
4. Common-size statement analysis

VI Statement of the problem:

The study and research work based on secondary data i.e. collection of financial reports for last 11 years of each industry. We have collected financial data for 6 different industries. The collection of old financial data was a tedious job. For collection of costing data i.e. manufacturing wages and salary and administrative salary, manufacturing expenses and administrative expenses, fixed expenses and variable expenses etc Reseacher has personally visited to the industries and collected the data. At the time of visit, he has seen the process of manufacturing product, inventory, labour working conditions and marketing strategy of the products. For the purpose of financial statement of analysis of engineering industry the profit and loss account and balance sheet have been tested and presented in a condensed form. The statements of cost of goods sold, showing total cost under various heads are collected. To compell the data of different types of product, capacity and nature of production, process has been studied. The figures are re-groped, recasted and arranged in condensed form for camparision.
VII Research Methodology:

The study is mainly based on secondary data. However, researcher has visited to the sample units except Ispat industries. Researcher has worked as Finance Manager for Taparia Tools for around 10 years and for Kalyani Breaks around 2 years. Research has also served other Engineering industries for around 13 years. Therefore the researcher has access to the information regarding employees, production and marketing. He is well aquainted with the process of production and costing of the product. Hence necessary data has been collected precisely and accurately.

The financial statement analysis and its study has its own limitations. One has to rely entirely on the published financial accounts and annual reports of the industry. The financial statements in the form of annual reports are the only source of data for study. One has to draw the conclusions through the analysis of these statements. Therefore the annual reports of all the industries were collected for the study. The present study is conducted on the basis of data for last 11 years i.e. from 1992 to 2002. It would help to give proper emphasis on the conditions that governed the production aspects of every industry.

While analysing the financial statements of these industries, their manufacturing cost, factory cost, trading accounts, profit and loss accounts and balance sheet have been recasted and converted into vertical form. All accounts have been rearranged for the comparison of units. The figures taken from the financial statements have been rounded upto two decimal places and expressed in lakhs of rupees. While analysing the financial statements the techniques of percentages, common size statement and ratio analysis have been adopted. The statistical techniques are also used for the study.
VIII Sample design:

In the present study only 6 Public Ltd. Engineering Companies of Maharashtra are considered. The units are selected on the regional basis. The regions are

(a) Western Maharashtra
(b) Kokan
(c) Central Maharashtra
(d) North Maharashtra (Khandesh)
(e) Vidarbha

The selection of units is made as per the growth of industries i.e. from western region to eastern. Three units are selected from western region. Two units from central region and one unit from eastern region. These are as follows:

Western Maharashtra : (i) Taparia Tools Ltd. - Nasik
                      : (ii) Mukund Ltd. - Mumbai.
Kokan : (iii) Zenith Ltd. - Khopoli.
Marathwada : (iv) Bajaj Auto Ltd.-A‘Bad
North Maharashtra : (v) K.B.X. Ltd. - Jalgaon
Vidarbha (Eastern) : (vi) Ispat Industries Ltd. - Nagpur.

The Engineering Industries have grown up in western region, specially in Mumbai due to Infrastructural facilities. These facilities latter on provided in the Central Maharashtra and in eastern region i.e. in Vidharbha and Khandesh. The Maharashtra government tried to remove the imbalance of industrial growth by giving extra tax benefits, subsidy and export benefits in the backward area.
The performance of these 6 engineering units is measured and conclusions are drawn. It will certainly provide guide-lines to the Management, Government, Shareholders, Creditors and Employees to take decisions in the growth of Engineering Industries.

IX Scope of the study:

Period for the study is of 11 years for selected engineering industries. During the period units faced the problem of raw material, labour trouble, tradition and competition of product. Industries faced the problem in maintaining the quality of the product. Due to these problems profitability of the engineering units was affected a lot. During the period we observed that engineering units are not doing well as per the expectation.

X Hypotheses to be tested:

Following are the important hypothesis which are to be tested:

1. How far the under-utilization of the plant capacity affect the profitability?

2. Are the administration and non-operating experiments are higher and affecting the profitability of the concern?

3. Is the interest cost is higher or reasonable?

4. Whether the prime cost and manufacturing cost are within the limits or it should be controlled?

5. Is the short term financial position of Engineering industry is sound or weak?

6. Is the long-term financial position is sound or weak?

7. Whether the working capital is appropriate for Engineering Industry?

8. Current ratios are favourable or not during the period?
9. What is the profit trend during the period, is there any set back?
10. What is the earning per share?
11. What % of the dividend are distributed during the period?

XI Chapter Scheme:
The study is presented as under:

The 1st chapter deals with the meaning of financial statement and its analysis and general background of engineering industry. It also covers statement of the problem, objectives of the study, list of the hypotheses, methodology and chapter scheme.

Chapter II is devoted for brief history of each engineering industry selected for the study.

Chapter III deals with the behavior of manufacturing cost over period of 11 years and comparison of all the units at regional level and between the factories.

Chapter IV is an analysis of profitability of each units and comparision amongst the selected industries.

Chapter V To test the short term and long term financial strength of the engineering industries.

The last chapter summarizes the findings, draws conclusions based on their performance and suggests some measures for improving the performance of engineering industries in general.
References:


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(3) MEDC Monthly Economic Digest, Special Number, January 1997, P-57.

(4) MEDC Monthly Economic Digest, Special Number, January 1997, P-41.


(6) I.M. Pandey - Essentials of Management Accounting.
