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Industrial Specification on Lean Manufacturing Competencies of Manufacturing Unit

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Abstract- One of the most significant industries in India is the manufacturing sector. The introduction of several industries like textile producer, papermaking, automotive parts manufacturing, health and safety, electronics manufacturing, pet food and supplies and industrial repair etc., has made the global market more competitive recently, and businesses are finding it difficult to improve their product lines and, consequently, their clientele. Industry competition is a significant concern. One essential method for raising industry competitiveness is competency development. It thoroughly examines the differing significance of manufacturing competencies and the forces behind industrial competitiveness based on the overall performance of a company. Therefore, one can examine the manufacturing competences of the automobile industry to gauge the overall competitiveness of the automobile manufacturing sector. This study highlights the significance of certain manufacturing competency elements on industrial competitiveness. The significance of manufacturing skills is growing daily in the tractor manufacturing business, and this study offers numerous variables of manufacturing competencies affecting industrial competitiveness.

Keywords- Competitive, Competitiveness, Aggregate, Competency, Explores, Significance.

1. INTRODUCTION

Today's manufacturing entities face a myriad of challenges. They are tasked with getting products to market faster, lowering costs while improving quality and increasing customization, and competing in a globalised world all the while finding winning approaches to improve product innovation.

Easynet's innovative solutions and global network support manufacturer's needs in a variety of ways:

(a) Collaboration - Helps Manufacturers Bridge the operational and strategic gaps with their vendors, streamlines supply chains, and create the efficiencies which reduce costs and improve revenue.

(b) Globalization - Creates new opportunities for global commerce outside of domestic markets through shared information such as product enquiries, orders, materials requirements, and sales and technical support.

(c) Mass Customization - A trend driven by consumers searching for individuality. Manufacturers are forced to adapt processes and react efficiently to changes in demand.

With our vertically aligned specialists, we are able to understand these challenges that your business faces and more. Partnering with industry leaders in the manufacturing field, Easynet are able to offer you the solution your business needs.

Companies must develop and manage production networks that are lean and flexible enough to operate cost-effectively in these uncertain times. Key challenges include increasing the efficiency of shop-floor operations, improving overall equipment effectiveness, managing global networks, and aligning the objectives of manufacturing with other key functional areas. To succeed, companies must answer questions such as these:

i. Have we aligned our manufacturing capabilities with our overall business strategy?
ii. Does our global production network fully optimize costs and scale?
iii. Are we in sourcing and outsourcing the right things?
iv. Can we improve utilization and gain capacity without adding cost?
v. How can we improve demand management and production planning and increase flexibility in these uncertain times?

1.2. COMPETENCY MODEL

There is a wealth of information available for the development and use of competency models. To simplify the process, competency modeling experts reviewed the literature as well as past competency models developed for a wide range of corporations and government agencies. They identified the competencies most commonly referenced as contributing to success in the workplace, and incorporated the findings in a single reference source that can be used to guide efforts to construct competency models. This reference consists of a set of "building blocks" for competency model development, which is referred to as the Building Blocks Model. Each building block is a competency area defined by key behaviors. The building blocks are grouped by type and are arranged in tiers.

Tier 1 is to be filled in with the competencies specific to a sector within an industry.

Tier 2 is to be filled in with industry-wide competencies.

Tier 3 Workplace Competencies represent motives and traits, as well as interpersonal and self-management styles.

Tier 4 Academic Competencies include cognitive functions and thinking styles.

Tier 5 Personal Effectiveness Competencies are often referred to as soft skills.

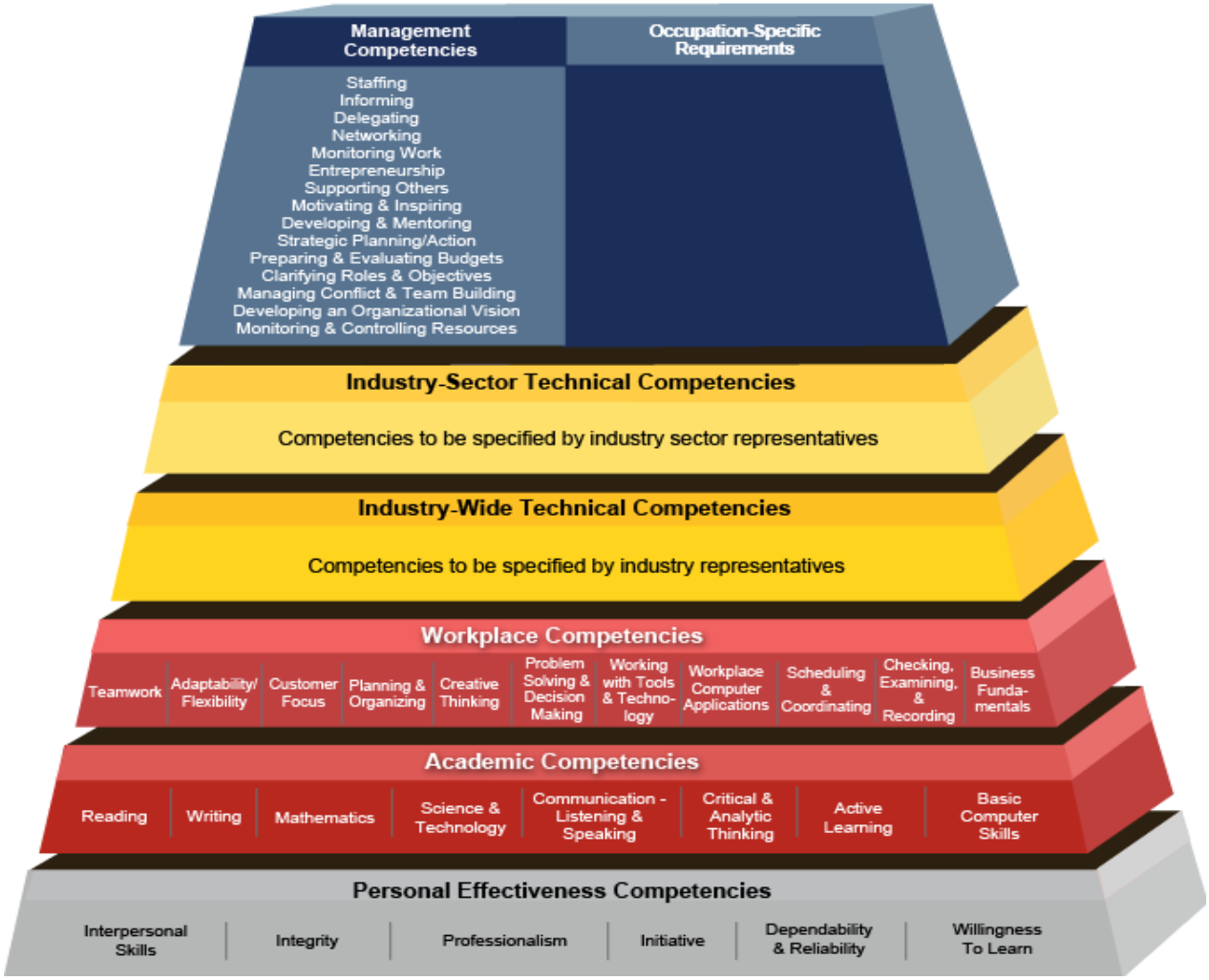

Figure 1.1 Building Blocks for Competency Models (wikipedia.org)

1.3 COMPETENCY MODEL DEVELOPMENT PROCESS

As global business competition shifts from efficiency to innovation and from enlargement of scale to creation of value, management needs to be oriented towards the strategic use of human resources. Under these circumstances, the ability of companies to effectively carry out competency based human resources management (HRM) is becoming more and more crucial for their survival. A competency based HRM system captures the differing worth of individual contributors, facilitates multiple career paths and allows

flexibility in reward-related decisions, which are important to address with the changing nature of organizations.

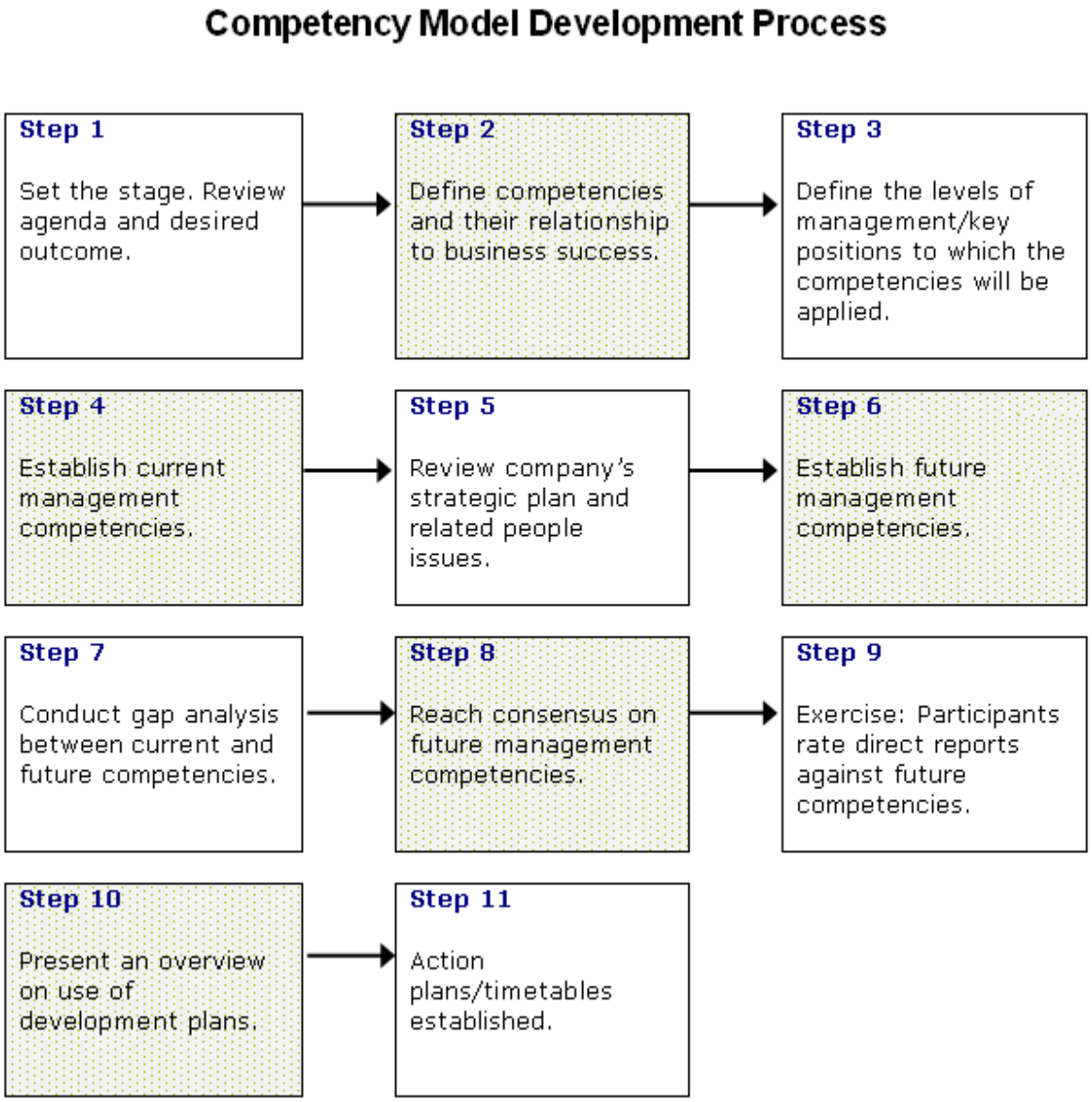

Figure 1.2 Competency Model Development process (www.careeronstop.org)

1.4 APPLICATION LEVELS OF A COMPETENCY

i. Advanced

Demonstrates high level of understanding of the particular competency to perform fully and independently related tasks. Frequently demonstrates application that indicates profound level of expertise. Can perform adviser or trainer roles. Work activities are carried out consistently with high quality standards.

ii. Proficient

Demonstrates a sound level of understanding of the particular competency to adequately perform related tasks, practically without guidance. Work activities are performed effectively within quality standards.

1.5 Manufacturing Competencies

A competency is the ability to apply or use a set of related knowledge, skills, and abilities to perform critical work functions or tasks in a defined work setting. Competencies often serve as the basis for skill standards that specify the level of knowledge, skills, and abilities required for success in the workplace as well as potential measurement criteria for assessing competency attainment. To implement management subjects in a company always means to combine professional sector specifications with generally accepted concepts. Therefore we assure comprehensive sector know-how within our core competencies to provide an ideal combination of method and professional knowledge for successful projects. Furthermore it is a central success factor and requirement for each our consultants to respond to the individual challenges of each company environment and to convert this into direct project success.

a) Applies basic engineering principles and the appropriate technical solution to a problem
b) Applies principles of engineering science and technology, techniques, procedures and equipment to the design and production of various goods and services
c) Applies the basics of electricity
d) Identifies and selects the appropriate hand or small electric tools or diagnostic equipment for the work
e) Solves problems where a variety of mechanical, electrical, thermal or fluid faults could be at fault.

1.6 COMPONENTS OF MANUFACTURING COMPETENCIES

The term idea generation is actually a misnomer. This is because in many companies ideas do not have to be 'generated. They do, however, need to be managed. This involves identifying sources of ideas and developing means by which these sources can be activated. The aim of this stage in the process is to develop a bank of ideas that fall within the parameters set by new product strategy.

1. Product concept (Idea generation)
2. Creativity
3. Invention
4. Evolution
5. Product design and development
6. Computer aided design (Technology)
7. Product life cycle
8. Finite element method (FEM) and Finite element analysis (FEA)
9. Simulation and modeling
10. Aesthetics
11. Ergonomics
12. Technical specifications
13. Process planning
14. Machine selection
15. Material selection
16. Statistical Process Control (SPC)
17. Demand order information
18. Raw material
19. Material availability.
20. Import
21. Inventory
22. Warehouse
23. Transportation
24. Automated equipment
25. Production and control

26. Computer aided Manufacturing
27. Precision Knowledge
28. Green manufacturing
29. System integration
30. Robotics
31. Hydraulics and Pneumatics
32. Assembly
33. Finishing
34. Process control
35. Quality control
36. Inspection
37. Product testing
38. Life-cycle analysis

1.7 CASE STUDY OF ESCORT

Indian tractor market is through a very crucial period. Being the largest tractor market in the world in unit terms; it is going to witness tremendous competition it has not seen till now. The key concern for Escorts in this war of competition, are:

a) Adverse Govt. policies.
b) Economic slowdown.
c) High competition.
d) Recession in global economy.
e) Fluctuations in exchange rates.
f) Low farm mechanization practices.
g) Inadequate credit practices being promoted.
h) Farm income getting stabilized.

These factors have to be overcome to push the tractor sales. The other players competing with Escorts are M&M, EICHER, SONALIKA, NEW HOLLAND STANDARD etc. M&M which is one of the toughest competitors to ESCORTS have gained much higher popularity and market share. The reason behind is that farmers in India prefer low fuel consuming tractor.

1.8 COMPANY PROFILE

Escorts are one of the country's biggest tractor makers. The company manufactures farm equipment, automotive components, railway ancillaries, construction machinery, shock absorbers and telecom equipment. It has a joint venture with Long Manufacturing of North Carolina for the manufacture, assembly and sale of tractors.

1.9 COMPANY FLASHBACK

The company pioneered farm mechanism in 1948 by launching Escorts Agricultural Machines Limited by taking the franchise from the U.SO. Based Minneapolis Moline,Wisconcin only to market tractors, implements, engines and other farm equipment. In 1960 started its own manufacturing from Fakirabad. Today, escort agri machinery group has a nationwide network with over 600 dealers, 100 parts stockiest and 30 area offices. Their national share stands at 20%. The company has developed its own in-house state-of-the-art technology R&D facility. The main focus of the R&D facility is to develop new and better products - products that can offer improved performance with lower fuel consumption and least maintenance and parts requirements.

1.10 OBJECTIVES

1. To assess satisfaction level of customer regarding fuel efficiency
2. To know satisfaction level regarding quality, maintenance etc
3. To assess whether customers are satisfied with price of the farmtrac tractors
4. To know influencing factor to purchase the farmtrac tractors

1.11 STRATEGY

Strategy is an art of troop leader; office of general, command, and generalship is a high level plan to achieve one or more goals under conditions of uncertainty. Strategy becomes ever necessary when it is known or suspected there are insufficient resources to achieve these goals. Strategy is also about attaining and maintaining a position of advantage over adversaries through the successive exploitation of known or emergent possibilities rather than committing to any specific fixed plan designed at the outset.

The Escorts new jai kisan series recognizes the new market order for varied needs of the Indian farmer, changing tractor uses for specialized applications and usage of modern and heavy-duty implements &

attachments, thereby offering wider options for agricultural, infrastructure as well as specialized applications for land development activities.

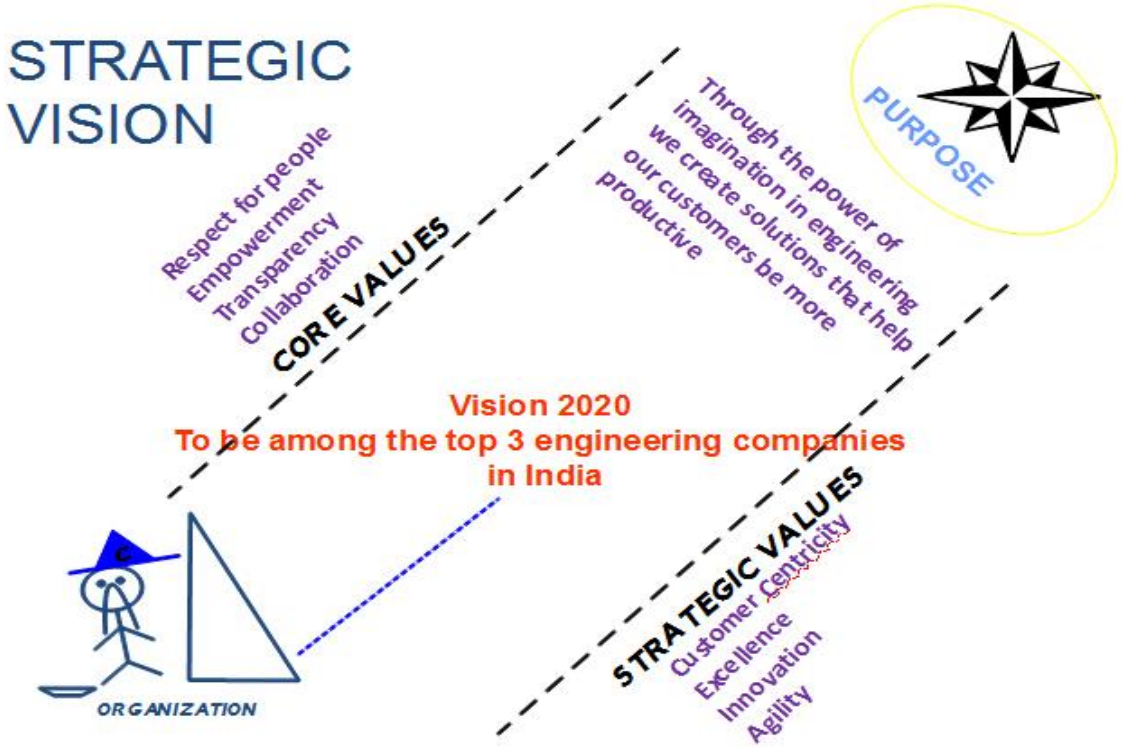

Figure 1.3 Strategic vision

The company strategic values define how we will achieve the envisioned future. These must be embedded into our manner of thinking and ways of work.

Escorts tractor India, Private Limited operates on a principle, which is followed worldwide by all Escort companies. Maintaining a global viewpoint, we are dedicated to supplying products of the highest quality, yet at a reasonable price for worldwide customer satisfaction. Escort philosophy is based on the company's guiding principle.

Respect for the Individual Escort recognizes and respects individual differences. The respect for individual stems from the following three points: Initiative, Equality, and Trust. It is the contribution from each individual in the company that has made our company what it is today and that, which will take us into the future.

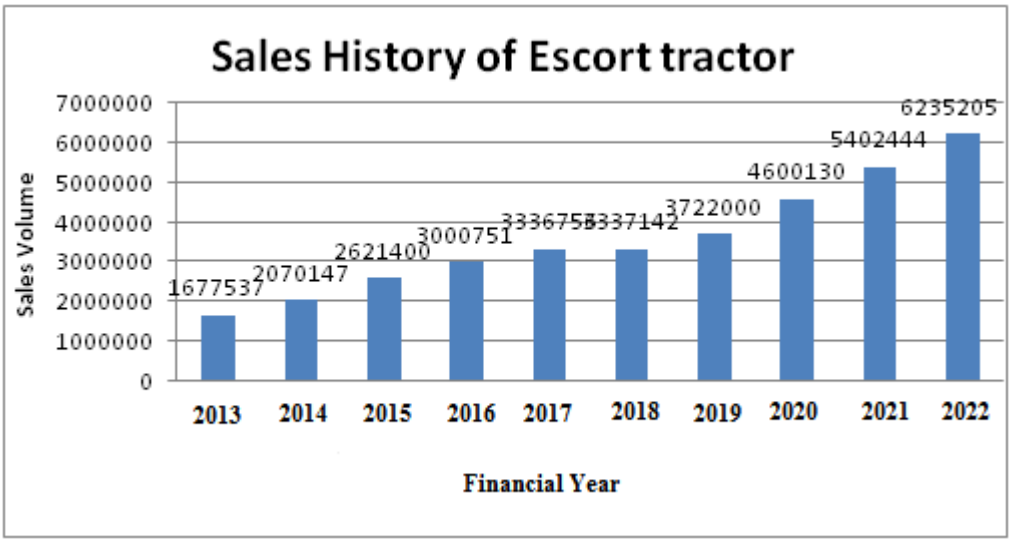

Fig 1.4 Number of units sold

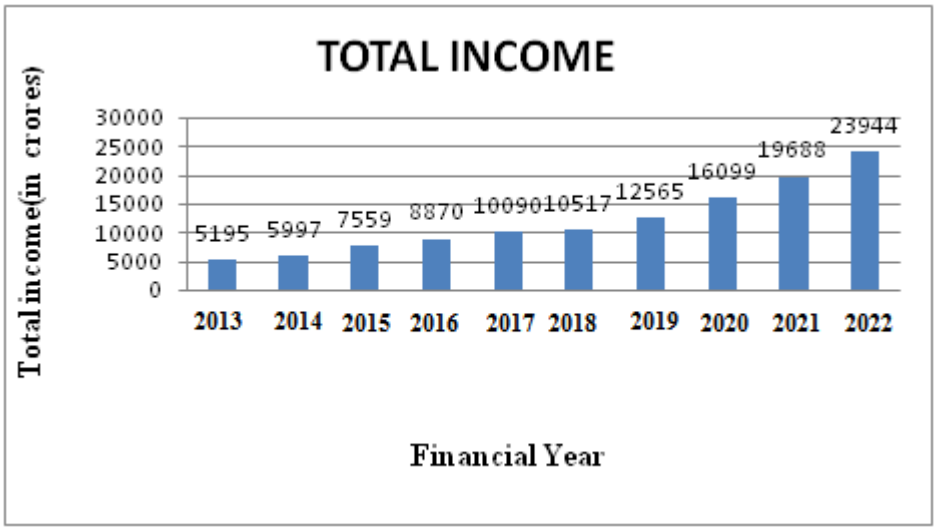

Fig 1.5 Number of units sold

The Three Joys

In line with Escort Philosophy, conducts all its daily activities in pursuit of the following joys:

a) The joy of manufacturing high quality products.

b) The joy of selling high quality products.

c) The joy of buying high quality products.

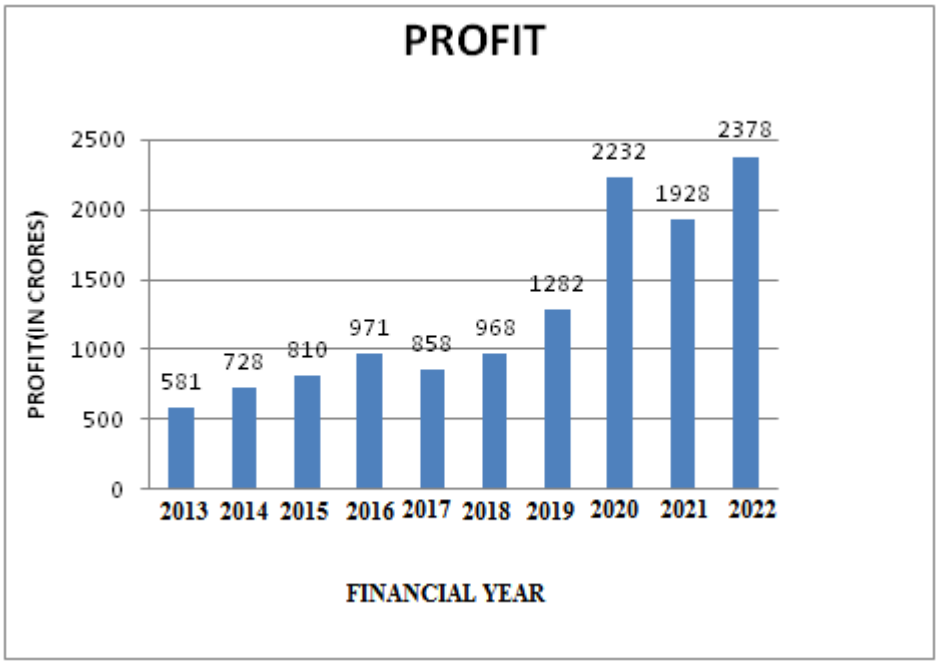

Fig 1.6 Number of units sold

1.12 CONCLUSION

The case study was prepared at Escort Limited Agri Machinery Group Faridabad plant. It has been analyzed that the sales have improved with an improvement in competitiveness of manufacturing unit.

Following conclusions have been made:-

1. The manufacturing unit is technically sound and is fully equipped with the latest machinery.
2. Profit of the manufacturing unit has been improved.
3. Market share has enhanced.

1.13 FUTURE SCOPE

1. The work can be carried out in other areas of India.

2. The work can be extended in other automobile sectors.

3. Strategy issues can be studied with this work.

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