Chapter-I

Introduction

1.1. INTRODUCTION

Manufacturing can be demarcated as the physical and/or chemical renovation of resources into finished products or material components on a large scale using machinery, human labor or capital equipment organized together, in contrast to production of handmade goods for regular or small scale use and this manufacturing has been made possible through the Industrial Revolution.

1.2. MANUFACTURING INDUSTRY - THE PRE-INDUSTRIAL ERA

Before industrial revolution there was manufacturing but it was done in homes using hand tools or basic machines. The Industrial revolution brought power-driven, special-purpose machinery, factories, well-organized and mass production in the field of manufacturing. From 1300 to 1750 almost all the general publics’ used grow crops in the same place for home consumption. Children knew to milk cows, churn butter, and be likely to guard and farm animals. Slowly generation after generation, the trend in the rural families inclined towards relying upon tools like wooden plows pulled by beast shad changed little over the centuries but basic machinery was also not available and buying cloth also a luxury. A typical pre-industrial economy was completely depended on peasants.

In 13th century producing handcrafted possessions like cloth weaving, masonry, and furniture in workshops and trading their effort for some money finding a new occupation. An international banking family ‘The Medicis’ had come to rule Florence and had patronized prodigious works of art by Michael Angelo and architectural wonders by Brunelleschi. The mechanical curiosities such as flying machines, parachutes, tanks, machine guns, and robots had originally taken a form in this era in the dreams of Leonardo Da Vinci.
Pre-Industrial cities like Florence befitted to be the centers of learning, mechanical tinkering, craft production, and bold new engineering which later paved the way for the magnificent inventions that occurred during the fertile Industrial Revolution. For instance the compass, based upon the Mechanical clocks, turned out to be a breakthrough invention in sailing and navigating which allowed Europeans to sail across the ocean in the late 15th century.

Advances in knowledge and its crafty application allowed the European nations surpass China and stand ahead of it in terms of technology and military prowess. Chinese invented gunpowder and used it as fireworks and Europeans recognized it as a key invention to fire guns. By the 16th century, Europeans started the mass-production of cannons and gunpowder in undeveloped and unorganized factories.

The success of industrial revolution had given birth to the financial revolution in late 1500 since the markets stretched between Asia and America. The world’s first joint stock company (Ferguson 130-133) was established by the Dutch in Amsterdam in the early 1600s. Then some other companies started to empower themselves through this scheme which is termed as ‘The Dutch stock market’. It was held as a monopoly in trading of nutmeg, cloves, and mace from the “spice islands” of Southeast Asia. This was spread to England and first central bank of England in 1694. The innovations in banking industry removed the cross sea barriers. By 1600s, Europeans became receptive to mechanized curiosities making the mechanical and financial inventions.

The industrial system grew alongside the pre-industrial society with a system called “the cottage industry”. The agricultural families used to work at night in their own cottages spinning, weaving etc.

The Industrial Revolution started moving the work culture from the cottages to the new and well established factories with large new machines that are centralized in one location and are powered by water/steam engines. Since then, the cottage industry merchants were considered as the precursors of the factory owners in industrial times; entrepreneurs who would get the work done through cheap and skilled labor taking ownership of machines. This is how the roots of the Industrial Revolution penetrated deep
down into the preceding centuries. The Agricultural Revolution also started and gave birth to new methods of production.

1.3. MANUFACTURING INDUSTRY OF THE INDUSTRIAL ERA

The industrial revolution shifted production from unorganized to organize. It happened in three waves. The first wave being proposed by Nikolai Kondratieff of 18th century started in England with the inventions allied to the steam engine, textile industry and printing. Carrying the legacy forward the second wave of 19th century started in America embracing rapid developments associated with railroad, automobile and telephones. And the third wave of 20th century was led by Japan, focusing on electronics and automation which has elevated the human existence to the next level.

1.3.1 The Elementary Wave

The European industrial revolution of 18th century impacted on production, consumption, family, and labor, cultural and social structures. It started in Great Britain; later spread to Germany, France and USA. Initially manufacturing was from homes or small workshops later shifted to the factories. The premature inventions being demarcated to cotton weaving, encompassing the spinning mule, spinning jenny, water - powered frame and power loom and cotton etc. by intensifying the pace of the process. The discovery of steam power and new fuels such as coal and petroleum has revolutionized the textiles and manufacturing industries. England never hesitated to amend the economic policy instigating the trade and exports with America in the 1780's and later with India.

1.3.2. The Subsequent Wave

The subsequent wave involved in boosting up the pace of production delivering to the end user much quickly through various aids like new production techniques, mass/continuous manufacturing, assembly line production etc. This assembly line process being mastered by Henry Ford’s collectively with Bessemer and open-hearth processes for steel production had exemplified the revolution. The geographical barriers of the large
manufacturing firms were smashed went across the oceans that minimizes the cost and maximizes the productivity; giving birth to Multi-National corporations. Industrial engineers started investigating the all likely ways to set up a factory layout, transport materials, route jobs, and monitor work through precise scheduling. The highly literate country America pioneered the Industrial revolution. The father of the American Industrial Revolution was Samuel. S from Britain established the first successful textile mill, Du Pont from France who established the first efficacious chemical companies are considered to be the path dwellers of this era.

1.3.3 The Ultimate Wave

The electronics industry was known as ultimate wave of industrial revolution by introducing automation in all the industrial operations. First it was started by America and Europe but later Japan mastered in automation. Government cooperation, flexible organizational structure and manufacturing strategy helped Japan in achieving the second position after USA within short span. Japan imported first industrial robot in from USA in the year 1967 but by 1980 Japanese robots stood as excellent industrial robots and 70 per cent of world’s robots are from Japan. The Japanese firms began emphasizing on technology-driven innovation moving on from the market-driven innovation by investing huge amount on R&D. In the second phase, the government began to trail the protection and promotional policies of research activities and in the third phase, the policies of liberalization were added further to the protection and promotion policies; which has been done to cope up the competition with the USA.

These three waves have acknowledged skilled manpower, quality of products and efficiency of production as the three critical needs enabling manufacturing sector’s growth. Studies have been intensified and several factors governing the location and growth of manufacturing sector which has been categorized as the traditional and the trending. The traditional factors include the reach and access to raw materials, energy sources, water, labor force and potential market; which had later became the issues of minimal concern because of their transferability. Hence the trending factors are being paid higher attention taken to their limited proximity and lack of transferability. The
factors are itemized as access to ancillary industry, availability of educational institutes, technology parks and transportation routes (highways, railroads) or hubs (sea ports and air ports). The fondnesstowardslocation is extremely influenced by the availability of investors, government incentives, real estate prices, climate and cultural life. Once an acute number of manufacturing firms being established in a region, it obviously becomes a favored location for new firms, owing to the presence of various resources already crafted to the manufacturing of a range of products leading to manufacturing clusters.

1.4. MANUFACTURING INDUSTRIES IN INDIA

India being a country ruled by myriad rulers from various corners of the world and by those with multi cultures has learnt an enormous number of trading techniques dictated by myriad principles; and has assimilated immense knowledge about the science and technology being used in this trade related manufacturing and production. Though the trade history of the country sounds quite interesting; it has not been supported with necessary facts because of the poor documentation. Still, getting these few available and documented pieces together gives us a short-lived portrayal about ancient, medieval and post-Independence manufacturing industry of India.

1.4.1 Prehistoric India

The Harappa civilization (4000-3000 BC) had laid down the foundations of manufacturing activities in Indian subcontinent. Precise measures and weights were in existence and casting tools were in use. Metal utensils included spherical saws, bronze drills and pierced needles with twisted grooves. The creation of monumental architecture was done with the involvement of the technologies for lifting, loading and shipping of construction resources, building structuring ramps, scaffolding, and allied tools. The culture of exports and export centers was developed even in those eras with the establishment of ports such as Lothal in Gujarat which specialized in export of smelted copper and bronze. Kautilya's Arthashastra written around 300 BC, connotes the practice for metal extraction and alloying. Later the Sanskrit text takes the discussion a step ahead discussing about the assessment and accomplishment of metal purity. The
Rasvatnakar on paper by Nagarjuna in 50 BC bring up the distillation of Zinc in Zawar, Rajasthan, and excavations by the M.S. University of Vadodara authenticate the presence of kilns used in the distillation of the metal.

The trade being well controlled and supervised by the local rulers of the city; with numerous guilds like carpenters, leatherworkers, smiths, painters etc., under the leadership of a president. The commercial and corporate activities and partnerships in trade is supported with enough evidence. The industrial and export centers were connected by first-class roads, which significantly facilitated transfer; and the same has been accurately supported with the help of Alexander's records that mapped a road running from Penkelaotis (Pushkalavati) near the modern Attock across the river Bias through Takshila to Patalipura (Patna). One more road joined Pushkalavathi and Indraprastha (Delhi) later connecting Ujjayini (Ujjain) glided down the Vindhya range going into the Deccan through Pratisthana later crossing the Tapti and the Narmada rivers.

The Indian exports inventory was further listed down in the Greek literature which included a variety of spices, quality fabrics, aromatics, ivory, quality iron and gems, which were in huge demand. And in return, India imported cut-gems, wine, coral, colognes, papyrus, copper, lead and tin ingots from Rome. However the trade balance was presumed to be in India's favor making a net payment of over fifty million sesterces per year in the form of gold or silver coinage, according to Pliny.

1.4.2 Historic India

The rulers being well educated those days actively supported science and technology through funds from royal treasury. For instance Raja (King) Bhoja (1018-60) of Dhar -Malwa, architected Bhoj Sagar, one of the largest and finest artificial irrigation lakes of medieval India. He was well educated in sciences and arts, and was a great architect, designer and an engineer. Thriving to share his knowledge and skill started an university called Bhoj Shala, and presented the art of depicting a detailed network of roads connecting the rural, urban and trading vicinities in his magnum opus, Somarangana Sutradhara.
Gazing at the metallurgical science knowledge of the ancient Indians, the Iron Pillar (with iron content of 99.72%) of Delhi can be considered as the remarkable replica of their knowledge. The pillar standing 23 feet high, made of wrought iron doesn’t show any signs of rust even today. By the medieval ages, India started producing quite good quality steel and was efficient enough to extract zinc from its ore. Various alloying and distilling techniques were in use. Abul Fazl in Aini Akbari talks about the coating of copper vessels with tin. Alloys of copper lead and tin like Bidari being developed in the Deccan, was extensively used. The outstanding quality and cost competitiveness of Indian foundry and forge industry was documented by writers such as Dharmapal. Captain Presgrave of Sweden reported that the Indian iron which was wrought up into bars was of exceptional quality, possessing all the desirable properties surpassing those of the best Swedish iron.

Several documents proved that there existed the light and airy clothes, food preserving and water management techniques in Medieval India. By 1700, India was the largest exporter of textile in the world making the Cottongoods industry stand in par with the agriculture industry in terms of employment. The then traders and visitors were fascinated by the “perfection of the manufacturer” and the “simplicity of the tools deployed”. It was believed that “on the coast of Coromandel and in the province of Bengal, every single man, woman and child is employed in making a piece of cloth.

India totally missed the Industrial Revolution that was taking place in Europe despite all these possessions of ancient and medieval ages. This was because of the presumption of the Indian lifestyle to be the same throughout for centuries; like it was initially – simple and flourishing because of gentle weather and huge trade surplus. None of the great Indian writers had sensed the consequences of the extending foreign trade.

1.4.3 Sovereign India

Things changed after the foreign invasions to the country but after the independence, India turned out to be an agrarian based economy with quite a less number of industries which were confined to few cities. Export strategy was not encouraged by the nation due to the bitter experience it had and it was seen as a mechanism to handover
raw material and eventually the power to the United Kingdom, Portugal or other invaders; so that they can exploit our resources and sell the finished goods to their colonies. The market was seized with no investments from other nations; no exports and no trade contracts limiting the nation’s resources and the knowledge for itself. This led to the poor social indicators. The government presumed its immediate responsibility as to improve the nation’s social, economic and resource condition and bring rapid progression in the stagnant economy.

After lot of proposals, policies, amendments and change of government leaders; the nation’s legislation raised a new planning platform called the five year plans which got an insightful vision to be achieved every five years. The Second five year plan clearly laid down the road mad, need and necessity for industrialization placing key emphasis upon heavy industries and replicating the vital role of public sector in industrialization. High investment areas like coal, metals like iron and steel, natural resources like energy, coal, mineral oil, transport, arms and ammunition, are categorized as the public sector undertakings with complete control under government giving zero control strategy to the private players. The country’s government took the sole responsibility for the Infrastructure, alleviating inequality of income and wealth and nurturing indigenous progression of technology. In addition to this, the Government made its intervention mandatory in the measurement of fiscal soundness, licensing and direct physical allocation areas of the private enterprises. By the late seventies the rules and regulations turned out to be so stringent that the Private enterprises were completed demotivated and felt discouraged taken to the state’s strict licensing system and governing rules.

Though the prominence was given to the promotion of the Heavy industries in the five year plans; the small scale industries too gained thrust in the functioning because they have to meet the growing demand of consumer goods since the pressure of industrialization is upon capital-intensive heavy industries. The promotional policy instruments for the small sector has been moved to protective allowing them reservations and incentivizing them financially enabling them to withstand competition against the large industries.
Even during the formulation of the Third Five Year Plan (1961-66), the nation was with a very wrong perception about trading with the foreign nations and hence given the major thrust on self-reliance through abolishment of imports. Strategies were called upon nation-wide to substitute these imports with domestic products irrespective of the cost factor associated.

The growth was sensible during the first three Five Year Plans but it seemed to have lost direction in the next three Five Year Plans which was evident looking at the growth of the industrial output which has consistently fallen short of targets laid down in the five year plans. The sixth and the seventh five year plans have shown some progress bringing back the need for industrial growth on to the track. Economists quoted down the reasons for this failure as the lack of appropriate infrastructure facilitating the mounting industrialization. Records show the decline of 6% in the share of infrastructure development of the total public investment from 40% in the sixties to 34% in seventies. Apart from this reason, the failure has been further credited to poorly utilized capacities that has been setup in capital goods industries. This vast investment has led to the poor gross savings contribution of public sector which further sullied to negative values since 1975. The Indian economy’s growth rate was quite sluggish at less than 4% per annum during the initial three decades of this half century i.e. from 1950 to 1980, but the last two decades showed an accelerated growth of nearly 6% per annum. Furthermore the Tenth Five Year Plan target envisioned to almost double the growth rate 10% per annum.

1.4.4. Last decade

Prior to nineties, the primary constraint to Indian economic growth is banning itself from being open to global trade. The export pessimism has stagnated global export rate of the country in the world trade eventually leading to large trade deficits and overvalued currency.

This circumstance enforced the Government of India to take major decisions regarding the foreign trade repulsiveness and arrived at a conclusion to liberalize, globalize and privatize the economy. The new industrial policy has been amended unveiling on July 24th, 1991 which was aimed at jettisoning barriers to entry of global
players and eradicating restrictions of Monopolistic players of the market. Restrictive Trade Practices Act has even been an issue of concern, which was mitigated to encourage the domestic player and industries enabling them to expand facing the foreign competition. The public sector has been restructured promoting the direct foreign investments ranging from 51% to 100% in the selected industries of the country. Industrial licensing system was liberalized for all industries, and for few, it was completely abolished.

Alike all the parts of world that adopt the Liberalization, India too had tasted large decline in output in the early stages of the process of liberalization. The manufacturing sector grew by only 0.2% in 1991-93, the early stages of liberalization. But in the later stages by the end of 1996 it amounted to 14% however falling down drastically to 6% by the end of 1998.

By the end of this decade, the industry was exhibiting a twofold characteristic which is observed due to the intensifying competitive pressure compelling most of the Indian industries to reengineer and reorganize their operations witnessing unexpected and unprecedented alliances, takeovers, mergers and acquisitions. Competition is being experienced from the following perspective:

1. Low price consumer goods from Asian (Chinese specifically) markets,
2. Technologically advanced goods from Japanese market
3. Branded goods from United states
4. Advanced and customized manufacturing strategies of developed and industrialized nations
5. Favorable government policies for Industrial Revolution in countries like Britain, America and Japan

During this 12th five year plan a rigorous strategy to upsurge the seriousness in manufacturing through infusion of Technology in all the levels is proposed. Indian Manufacturing Policy has been formulated giving a boost to the sector.
Salient features of National Manufacturing Policy:

- To increase the share of manufacturing sector by 9 percent in the GDP to 25 percent from the current 16 percent by 2025 and in the pursuit of this practice create an additional 100 million jobs.

- To lay foundation for National Investment and Manufacturing Zones (NIMZs) with world class infrastructure amenities; which will enjoy special policy regime, flexible labor and environment laws, tax concessions, and flexible compliance norms.

- To deploy a Manufacturing Industry Promotion Board (MIPB) that stands equivalent to the level of Union Minister of Commerce and Industry to guarantee the coordination amid the Central Ministries and State Government facilitating the effective implementation of the policy.

- To allocate a Technology Acquisition and Development Fund that aids the acquisition and development of apt and necessary technologies (predominantly green technologies).

- To infuse policy measures facilitating the efficient relocation of assets belonging to non-viable units, with due consideration of protection to the interests of employees and their employment. This will be achieved with the help of appropriate Insurance Instruments/ schemes

1.4.5. Indian Manufacturing Today

Industrial sectors accounts for 19 percent of the nation’s GDP and employs 14 percent of the total workforce standing 12th in the world’s nominal factory output ranking.

Breaking down the entire Industrial GDP contribution to the manufacturing sector, it contributes 15% to the GDP. Today India is in a position to manufacture all the objects that consume a simple technology like bulbs to highly sensitive technology-oriented extra-terrestrial products like missile and satellites. But the irony is that though India pioneers the world market in offshored back-office services, it fails to stand as a commercial and manufacturing center. Other Asian nations like China,
Thailand outperform India in the manufacturing activities. The reasons for this are credited to the irregular and poor electricity supplies, poor transport sources, governance issues, instability in the government formation, labor polices, etc. The country has seen itself and being seen by foreign markets as need driven market, but none has recognized it as the resourceful nation that is being a base for global supplies. Meanwhile technology, governance and manufacturing strategy and policy frameworks advancements in the developed nations called for consolidation of global efficient resource providers in manufacturing sector. But Indian manufacturing efficiency has been crippled because of the family, unorganized and local levels of business and governance. This eventually is again empowering the foreign giants to overtake the Indian companies and resources.

Today the Indian Manufacturing sector is sub rooted into 14 sectors that are exhibiting a twofold characteristic. The fourteen sub sectors namely are in Automotive, Capital Goods, Cement Sector, Ceramics Sector, Chemicals and Fertilizers, Electronics & Electricals, Software & Information Technology, Food Processing, Leather and Footwear, Machine Tools Industry, Metal and Metal Products, Paper, Textiles, Textiles Machinery, Tyre Industry etc.

1.5. MANUFACTURING INDUSTRIES IN ANDHRA PRADESH

Andhra Pradesh is on the southern-east coast of India, which fourth largest state covering an area of 2,76,754 sq.kms and holds fifth position in terms of population. It had robust growth over the decade in both monetary and fiscal terms gained national prominence with its outstanding growth of 9%. From agro based products it diversified into fastest growing industrial hub and stood as the third largest economy in the country. The industrial sector’s contribution to the state GDP resulted at 25.1% which is higher than that of agriculture’s contribution. Industries in the state had developed at an average annual rate of 8.6% in the past five years. Industrial developments suppress the poverty and unemployment conditions in the state and accelerated the socio economic condition, so the state government has given the industrial development as their top most priority.
1.5.1. Resources in Andhra Pradesh

It is having abundant natural resources like coal, limestone, bauxite and other minerals. It also includes fertile land, water, fertile river basins and extensive canal system, efficient agro and climatic conditions. It is known as an agricultural affluent state due to abundant natural resources with second longest coastline of 972 km the states of India and also the largest producer of marine products with 40 per cent in country’s exports. Huge natural gas reserves were found in Krishna Godavari Basin, which is found to be one of the largest Gas discoveries in India in the Eastern Region. The State has abundant water resources from its river system and in the form of reservoirs. It is encouraging to set up greater efficient and cost effective industries.

The State holds the top position in the production of Rice, Chilly, Oil Palm, Prawn, Citrus, Egg and Meat. It has stood among the top five in the production of Fish, Mango, Tomato, Coriander, cotton cashew, flowers, grapes, banana, ginger, and guava. In the state, there exists huge potential for production of variety of processed products.

There are 50 esteemed central and state R & D laboratories, with Centre for DNA, Indian Institute of Chemical Technology, Centre for Cellular and Molecular Biology, National institute for Nutrition, International Crops Research institute for the Semi-Arid-Tropics (ICRISAT), National Geophysical Research Institute (NGRI) etc. generated enormous opportunities in the state in the fields of Pharmaceuticals, Biotechnology, and fine chemicals.

1.5.2. Investments

At present AP is considered to be an economical and attractive destination for investments from domestic and foreign investors. In the World Bank survey, Hyderabad is considered as the place with abundant resources and good choice for investment. Doing Business in India 2009" a report of World Bank, has ranked Hyderabad as the 2nd best Metro city in India. According to CII survey, Andhra Pradesh has been rated as the best performing state in the manufacturing sector among the four states in the south
The strength of the state is based on its fully diversified industrial base. The State includes strong and dominant position in the areas of i) knowledge-based and high-technology such as information technology, biotechnology and pharmaceuticals, aviation and space technology ii) resource-based industries such as mining, cement, steel, textiles, agro-industry and food processing, and iii) labour-intensive industries such as garments and leather products. In engineering industry, the sectors such as machine tools, foundry, forge, electrical machinery and precision tools required for manufacturing, transport equipment’s production has been revitalized. It gained reputation for its components used in PSLV Chandrayan and atomic submarines. It is also pioneer in Cement Production with an installed capacity of 32,89 MTPA, possessing huge deposits of the limestone and coal. It is also top in paper production with existing capacity of 5.50 lakh TPA. It is also known for steel production and variety of building materials likemarbles, granite plates and slates. Moreover Hyderabad, alone holds one-third of India's total bulk drug production. Textile sector was also grown and stood as the 3rd leading producer of cotton in the country.

In power generation state stood in second position and have lowest energy deficit with 2% against national average of 9.3%. and having installed capacity of 13300 MW. It provides power at an economical cost to industries than any other state in India.

1.6. MANUFACTURING INDUSTRIES IN CHITTOOR DISTRICT

Chittoor District is bordered on the North by Anantapur and Kadapa district, on the East by Nellore district and Chengalpattu district of Tamil Nadu on the south. The district is located in between 12° 37’ to 14° 8` of North latitude and 78° 33’ to 79°55` of the Eastern Longitude. It covers an extent of 15.152 Sq.kms and is parted into Chittoor, Tirupati and Madanapalli revenue divisions. According to the statistics, Red loamy covers 57% of the district and Red sandy is of 34%. The remaining 9% is covered by black clay. It have rainfall on both north east (396 mm) and south west monsoons (438 mm). The standard rainfall of the district for South West monsoon period would be around 438 mm and for north east monsoon period is 396 mm. Rainfalls during winter and summer can be considered as negligible. District’s average rainfall stands around 934
mm with an average rain fall of 934 mm. According to the census of 2001, the population of Chittoor district is 37.46 lakhs, of which 18.85 lakhs are males and 17.61 lakhs are females. The density of population is 246 per square km. Out of the total population, male literates stand at 77.6% whereas literacy among female population stands at 55.78%

1.6.1. Resources

It is having agro resources (paddy, Ragi, Groundnut and Sugar Cane), Horticulture (Mango, Cashew nut, Tomato, Papaya and Tamarind), Mineral Resources (Steatite, Soap stone, Road metal, building stones and different colors of Granite) and Dairy Resources.

1.6.2. Resource based Industries:

Because of Mango crop (119539 Acres) with an average of 358617 M.Tonnes per Annum it had 48 Fruit processing Industries with total capacity of 10,000 M tones per annum. The average production of tomato is 35,000 acres producing 3 to 4 lakh M.Tonnes Per Annum. Currently, about 6000 M.Tonnes are being processed in the existing fruit processing industries. Tamarind is abundantly produced in an average of 12000 acres producing 15000 MT. There exist 6 Cold Storage units for storing tamarind and 2 more units for pipeline. As there are about 3,00,000 milk animals in the district yielding about 15 to 18 lakh Liters. of milk per day of this, 8 to 10 lakh liters is processed in all the 12 milk processing units and the processed milk is marketed in Chennai and Bangalore. There are about 150 minerals based units to process steatite, soap stone, granite etc. There are about 2300 power loom units established in and around Nagari area in Chittoor district. 13,000 power looms are working providing an employment of 40,000 people. 13 Spinning Mills with 3.50 lakh spindles capacity producing cotton yarn. There is very good scope for development of Hosiery and Knitted Wear and Readymade Garment Industries. Government identified Tirupati as potential IT-Hub and acquired 147 acres. Even in Tada there is a SEZ which is named as Sri City with more than 500 companies. As per the statistics of factories there around 152 large manufacturing industries in Chittoor District such as Amarraja Group, Lanco, Nutrine Confectionery, Balaji Diary etc.
1.7. INTRODUCTION ON TRAINING

Manufacturing industries became the backbone of Indian economy by providing abundant employability. Some Industries are becoming sick because of technical, financial, labor and other problems. Role of Training may be seen as “ensuring that the Organization has the people with the correct mix of attributes, through providing appropriate learning opportunities and motivating people to learn and thus enabling them to perform to the highest levels of quality and service” (Benley, 1990:25). It is also clear that the Human Resources available at the Manufacturing Industries need to improve their skill set and talent to be considered as Human Capital. This is possible through continuous Training and Development. As the change is constant in all functions, the performance of employees will be directly proportionate to the training programs. So it is vital to train the Employees to enhance the capability level and skill set (G.Sowjyanya and Rajasekhar, 2012). Companies may be small or large, but the essence of training will be the same for the Employees working in any kind of Organization. Training in small business sectors will be considered as an extra burden as it leads to additional cost to the Organization. But it enhances the skills of the Employees and would help them to stand out ahead of their competitors. So the success of any Company depends on the efficiency of Human Resource department or the Owners/Managers who are responsible in taking decisions with respect to training activities (Harry Matlay, 1999). Human evolution itself is a part of history of training; the Stone Age people got themselves trained to fulfill their basic needs. The metal age people had gone one step further and learnt the art of using metal and cooking. Thus every page and stage of human civilization will contain training in the backdrop. Even in the Monarchial Era, the Kings used to send their wards to Gurukul for learning, which is nothing but a form of residential training (Dr. B. Janakiram, Training & Development, 2012). From early 20th century training and development was started as profession and resulted in forming various training associations including American Management Association in 1923. World War I and II resulted in huge training programmes due to unskilled and uneducated workers. During World War II most of the trained workers joined in armed forces that used simple method of show, tell, do and check. This resulted in various training programmes like training
within Industry, job instruction training, job relation training, job methods training, job safety training etc. After the World War II majority of the Companies identified the significance of training. Henry Ford’s assembly line required specific and focused training than ever before (S. Vijayasamundeeswari, 2013). The share of automobile & service sector in increasing the GDP of any country is noteworthy. It is important in a way that this sector providing maximum employment to the people, directly and indirectly.

The Indian manufacturing sector is facing incredible competition and facing challenges from the Liberalization. The concept of Global Village and diversified customers has influence on the Manufacturing Companies. Hence the importance of the employees was identified as the key factor of HRD intrusion to remain and succeed in the Global competition. HRD endeavors in organizational development by training and development results in employee performance. Every organization will be successful if it can retain its talent through quality training and proper training evaluation.

In the current scenario companies are using training and development as a tool to impart professional knowledge, skills, change in attitudes, habits and to develop personality traits and facilitate them to enhance their potential to the maximum possible extent. Training is defined as ‘use of means to specific learning, often with the use of techniques that can be identified and continually improved’. It is known as ‘a sequence of experience or opportunity designed to modify behavior in order to attain stated objective’ (Hasseling P, as quoted by Hamblin AC in Evaluation and control of Training, Mc Graw Hill, Maidenhead, 1974 p.6). Majority of the companies are spending their time, money and other resources on training their people. Massive efforts are being made to understand the contribution of training in the success of an Organization (Bersin, 2003). Effective Training engages the participants to reflect their behaviour and work on adopting their personal and inter personal welfare. Training and development attracts, retains and enhances the skill set and performance of employees by imparting knowledge, change in attitudes and increase in skills. Important methods include In-basket, Case study, Business Games, Role plays, Drama based Training, Sensitivity Training, Behavior Modeling, Coaching, Understudy assignments, Job rotations, Multiple
Management Plans, Conferences, Lectures, Programmed instruction etc, (VSP Rao, 2010). Training is incessant and perennial activity hence training evaluation shifted from an individual program to incessant examination of the competence and efficacy of receptiveness in the organization (Davenport, 2006). Executives play vital role as leaders, project manager and coach with responsibilities of directing the team to the vision, taking care of operational activities and picking the people and improving the performance through counseling and training (Bob De Contreras, “What does Manager Do). Executives are the indispensable resources and priceless Assets of an Organization. They generate creative ideas, translate them into concrete action plans and produce results. When they succeed, they are able to keep everyone in good humor, including shareholders, employees and the general public. They are hailed as “invincible corporate heroes” and even treated as prized possessions of a Country. When they fail, they destroy the scarce corporate resources and make everyone to suffer. The outcomes of managerial actions, thus, are going to be deep, profound and decisive. To get ahead in the race especially in a complex, dynamic and ever-changing world, Executives need to develop their capabilities that go beyond those required by the current job (VSP Rao, 2010). At present companies are conducting both in-house and outdoor trainings the Executives but encouraging the concept of learning outside the Company as the outdoor training programs are latest & innovative. Outdoor training is not just climbing the rocks indeed it involves more effort, planning and cost to influences one's behavior and attitude towards the Organization. Few will learn how to get along with others, while others learn trust and enhance self confidence. A difficult decision at work often requires one to view a problem in a different light. Outdoor activities create awareness and a shift from the common pattern of thought that aids in improving lateral problem solving skill (Neha Lehl in her article “Importance of out of classroom Corporate Training, Chillibreeze writer).
1.8. TRAINING & DEVELOPMENT IN INDIA

Many manufacturing companies targeted on increasing the Production and strengthening this activity during the years of 1980-90. Many training programs were focused towards enhancing the technical skills of the employees. The employees were selected as Apprentice or Trainee Engineers and were given on the job training, later basing on the performance they were absorbed in the regular employment. The sales forces are trained on basic selling skills. The Companies started giving importance to Health, Safety and Quality at the Manufacturing sources during the end of the year 1990. The Companies changed the strategy and started focusing on development of Human Resources after Globalization effectively. Due to stiff competition in the market on aspects like product quality, price and deliverables, HR Department was given importance and the Human Resources were identified as Human Capital. Manufacturing Industries believed training is the tool to develop the people skill and that which can make the Industry to sustain and face the competition prevailing. All the cadres in the Manufacturing Industries were imparted training not only to enhance their job related knowledge but also to improve their behavioral skills. Quality has become very important aspect in all the functions of the Company. Innovation is given first place and people are encouraged to come out with new ideas. Many training programs were designed and held to enhance their job skills and soft skills. A separate department called Training and Development was created at the Corporate Offices and separate budget are allocated for training and development. Focus is to develop the employee self-confidence, team spirit, commitment, enhancing quality in all the functions of company. Hence some companies adapted feedback system for the executives for analyzing the training needs and for assessing the outcomes to conduct need based training programs.

In recent trends organizations are giving more emphasis on systematic training and development to achieve organizational effectiveness. The belief shifted to improved quality manpower will support the organization in meeting the present objectives of the organizations. Hence the training initiatives termed as strategic priority rather than as a
reactive approach. Training became business development tool and became essential in all the fields like production, marketing, sales, etc. In spite of ensuring outstanding results from training in the present scenario in India, there exist differences in terms of training practices in India against the rest of the world, most precisely in terms of investment in training and training evaluation.

Most of the Organizations are spending on their employees with an expectation that it would enhance their individual performance and in turn it enhances the overall performance of the organization. Hence trainings are said to be the change agent for any organization. In the current scenario, the concerning factor is not on deciding whether to train or not, it is about how to train the employees effectively.

The recent trend in the corporate world is to stress more on enforcing systematic approach to training and development so as to achieve higher level of organizational effectiveness. The main emphasis on training is because of the absence of required quality and quantity in terms of manpower to support the present and future objectives of the organization. Initiatives to training are thus considered to be the HR’s strategic responses to the changes in this dynamic world.

Corporate India also has termed training initiatives as the strategic priority rather than as a reactive approach, and can be used as a catalyst for change to get used to this dynamic world. In Indian organizations, training systems has been transformed to ensure a smarter workforce in order to obtain best outcome. Training has its need in every field such as Marketing, Sales, Production, Human Resources, Logistics and Purchase. It is seen as a business development tool and has it role in ensuring good results from the business. Training will not ensure the organisation with good results if it seen as an isolated function of the organization. It should have its role in the organization and should be considered as a prominent subsystem of the organizational system. In spite of ensuring outstanding results from training in the present scenario in India, there exist differences in terms of training practices in India against the rest of the world, most precisely in terms of investment in training and training evaluation.
Most of the Organizations invest significant amount of money into training activities to their employees with the expectation that it would enhance the performance of the employees which ultimately improve the productivity of the organization leading to the organizational development. Though training is considered to be the best way to make the employees learn the changes in the industry, the investment made should compensate with the achievement of the organisational effectiveness.

Transformation in any business initiates with the training activity. Investment in training not only aids the organization by making cost effective, but also makes sure that the desired objectives of the organization are achieved at the earliest. Therefore trainings are said to be the change agent for any organization which ensures the long term goal of the organization is achieved. In the current scenario, the concerning factor is not on deciding whether to train or not, it is about how to train the employees effectively.

1.8.1. Corporate Training initiatives in India

From last ten years corporate had taken excellent training initiatives with apparent structure on the training policies and practices from training need analysis to training evaluation. Infosys built world’s largest training centre with an investment of Rs. 260 crore. Companies like Satyam, Sun Pharma and Toyota had their own training centres. Satyam had a centre to cater the training needs. Accenture is using internet based learning resources. Organizations are giving priority in enhancing the personalities, problem solving skills and leadership skills of their employees.

Indian companies have become innovative not only in how they recruit but also in whom they recruit and where they look for talent. Most of them have developed a recruitment philosophy to hire for overall skill and aptitude rather than specialized domain and technical skills. They rely on training and development to bridge skill gaps. Instead of hiring only from top engineering universities, technology companies recruit from second- and third-tier colleges all across the country and also in arts and science schools. Similarly, companies in the banking and hospitality industries hire from call-centers and the information technology sector. Diversity programmes are also being implemented, both out of necessity and social purpose. Women and older workers in
particular are being targeted by technology companies and call centers, which are also reaching out to rural and disadvantaged communities.

In the technology sector, new-recruit training programmes typically span two to four months. In other industries programmes ranges from two to four weeks. The training curricula are generally highly sophisticated and teach not only the required technical skills but also the basics of topics like industry operations, customer management, communications, and team building. Formal induction training is typically followed by on-the-job training programmes in which employees are assigned specific tasks under the supervision of trainers and managers. It also covers the training and development in Retail FMCG sector, Banking and insurance sector, Automobile sector, Telecom sector, Pharmaceutical and Hospitality sectors.

1.9. TRAINING AND DEVELOPMENT BEFORE AND AFTER GLOBALIZATION

Many manufacturing companies targeted on increasing the Production and strengthening this activity during the years of 1980-90. Many training programs were focused towards enhancing the technical skills of the employees. The employees were selected as Apprentice or Trainee Engineers and were given on the job training, later basing on the performance they were absorbed in the regular employment. The sales force were trained on basic selling skills. The Companies started giving importance to Health, Safety and Quality at the Manufacturing sources during the end of the year 1990. The Companies changed the strategy and started focusing on development of Human Resources after Globalization effectively. Due to stiff competition in the market on aspects like product quality, price and deliverables, HR Department was given importance and the Human Resources were identified as Human Capital. Manufacturing Industries believed training is the tool to develop the people skill and that which can make the Industry to sustain and face the competition prevailing. All the cadres in the Manufacturing Industries were imparted training not only to enhance their job related knowledge but also to improve their behavioral skills. Quality has become very important aspect in all the functions of the Company. Innovation is given first place and people are encouraged to come out with new ideas. Many training programs were designed and held
to enhance their job skills and soft skills. A separate department called Training and Development was created at the Corporate Offices and separate budget are allocated for training and development. Focus is to develop the employee self-confidence, team spirit, commitment, enhancing quality in all the functions of company. Hence some companies adapted feedback system for the executives for analyzing the training needs and for assessing the outcomes to conduct need based training programs.

1.10. EVALUATION OF TRAINING

Evaluation can be termed as a means of appraising the value or worth. Hamblin defined evaluation of training as, obtaining the information related to the training programme and eventually assessing its value for further effectiveness. Validation, contrary to evaluation, relates directly to the training activity and provides immediate results. Organization should ensure that training is done in most productive manner, cost effective and should possess high implementation value. The primary objective of training evaluation is to ascertain whether the actual needs of the training have been met or not.

Donald Kirkpatrick’s proposed four levels of training evaluation; reaction, learning, behavior and results like that Warr, Bird & Rackham suggested CIRO; Context evaluation, Input evaluation, Reaction evaluation and Outcome evaluation.

Reaction evaluation has the same meaning in both Kirkpatrick and CIRO. Outcome evaluation is further subdivided into 3 levels, corresponding to Kirkpatrick’s last three levels. Context evaluation is obtaining information on the operational aspects. This will be used to decide training needs and objectives. Objectives are set at three levels i.e. immediate, intermediate and ultimate. Immediate is concerned with Knowledge, Skill and Attitude (KSAs) desired at the end of training; intermediate is related to changes in job performance, and ultimate are the desired changes in the organization. This evaluation is much open than Kirkpatrick where it considers evaluation as a continuous process. As per the literature Kirkpatrick is most frequently used training evaluation model.

In 1952, Donald Kirkpatrick doctoral research the four levels of training evaluation was emerged; i.e. to measure reaction, learning, behavior and results after training. In 1959
he proposed the model in his article. Donald Kirkpatrick's 1975 book Evaluating Training Programs defined his originally published ideas of 1959. It is unclear even to Kirkpatrick how these four steps became known as the Kirkpatrick Model, but this description persists today (Kirkpatrick, 1998). As reported in the literature, this model is most frequently applied to either educational or technical training. Kirkpatrick's four-level model is now considered an industry standard across the HR and training communities. The four levels of training evaluation model was later redefined and updated in Kirkpatrick's 1998 book, called 'Evaluating Training Programs: The Four Levels'. Level 1 measures the reactions of trainees immediately after the training; Level 2 measures the learning i.e. knowledge and capabilities, Level 3 measures behavior i.e. implementation of learning and Level 4 measures results i.e. effect of training on business. Kirkpatrick suggests that the effort and overheads required to evaluate at successively higher levels requires a growing amount of effort and resource, so it is perhaps easier and cheaper to evaluate at Level 1 but this is unlikely to be the case at Level 4. This is the argument (made by Kirkpatrick himself) for evaluating some 95% of training at Level 1 but perhaps only 5-10% of training at Level 4.

1.11. STATEMENT OF THE PROBLEM

There was an extensive research in the field of human resource and found that most of the large manufacturing companies are adopting innovative practices in training and development and training evaluation. Kirkpatrick (1959, 1975, and 1998) revealed that the training programs need to evaluate at four levels and the evaluation of reaction level was easier and cheaper when compared to evaluating results. The complexity increases from reaction level to learning, learning to behaviour and behaviour to results. Most of the companies fail to identify the purpose of training evaluation such as why to evaluate, whom to evaluate and what need to evaluated (Alison J Smith and John A. Piter (2006). Most of the companies are using four-level Kirkpatrick training evaluation model (Bassi& Cheney, 1997). Kirkpatrick & Kirkpatrick (2006) stated that greater part of HR practitioners did not have enough familiarity of Kirkpatrick’s model of evaluation. K K Mehtha (1970) identified the importance of training and training evaluation in increasing the knowledge and skill results in high performance, but measuring training impact and effectiveness was more complex as it was intangible. The Training Content and
applicability in the four-phase evaluation will add value to HR professionals (Tony Lingham, 2006). The impact of training program depends on training environment, trainer performance, training goals, content, material process, usefulness. The study identified that all the factors incorporated in this study will affect trainees’ learning level. This study concentrated only in Greek firms, and it need to be tested in other countries with different cultural, education and training systems (Anastasios D. Diamantidis and Prodromos D. Chatzoglou, 2012). B.K. Punia and Saurabh Kant (2013) reviewed various factors affecting training effectiveness and identified factors like motivation, attitude, emotional intelligence, support from management, training style and environment, open mindedness of trainer, job related factors, self-efficacy and basic ability etc. and the effect of organizational support system on training effectiveness was not covered.

The problem is that after extensive literature study it is found that there are enormous studies in training and development but there is inadequate knowledge of training evaluation practices in many large manufacturing industries. It is tricky to find training effectiveness value, and contribution to organizational objective. Most of the companies are limiting their training evaluation to reactions and learning but neglecting the behaviour change and results. The studies related to financial industries, government, information technology and hospital and studies found in large manufacturing industries of India.

1.11.1. The research attempts to answer the following questions

1. What are the contemporary training evaluation practices in the selected large manufacturing industries? And what difficulties does the manufacturing industry face to implement the training evaluations?

2. What was the perception of Executives on training effectiveness, evaluation and training outcomes?

3. How the effectiveness of training influence the overall performance of the organization?
1.12. NEED FOR THE STUDY

The Nutrine confectionery from 1953 to till date offered and offering many training programs to their employees. But it has given least preference to the training evaluation. After globalization it has been taken over by Godrej and then entered into joint venture with Hershey and in 2012 it has been 100 per cent subsidiary of Hershey. After taken over by Godrej and Hershey the importance of training and development has been increased but the significance of training evaluation and the budget allocated for training evaluation was negligible. During implementation of many strategies like restructuring the organization, rationalization of manpower, introduction of new product, new pricing strategies etc. the company was least bothered about the training evaluation. Consequently the company lost its market share. Hence, it made the researcher to write a case on Nutrine Confectionery Company with respect to training and development activities and its training evaluation impact on overall performance of the organization. Even though majority of the large manufacturing industries are offering training activities it was stated that many companies are implementing measuring training reactions and it was not measuring learning, behavior and results.

Majority of the companies are organizing many training and development Programs for their employees. It has become essential for employees to take self-development as one of the goals. The training programs are aimed to enhance skills as well as to develop creative thinking, problem solving skills, team spirit and behavioral related traits etc. Management development is aimed at preparing executives for future jobs with the organization or at solving organization wide problems concerning, acquiring or sharpening capabilities required in performing various tasks and functions associated with their present or expected future roles. Both in-house and outdoor training programs are conducted to executives by spending huge budgets with an expected outcome. The Impact of training cannot be measured directly but change in attitude and behavior that occurs as a result of training can be measured. The assessment will be made after each training session by the management, to know the effectiveness of training.
given to the executives. The study aims in identifying the significance difference of executives on in house and outdoor training programs impact/influence on enhancing the skills development, self development and behavioral development. This assessment of training outcomes helps to finalize the future training programs. The study is conducted on the employees and executives of large manufacturing industries of Chittoor district, Andhra Pradesh, India.

The extensive literature revealed that training effectiveness includes objectives of training and course content, training facilities and equipment, trainer’s capabilities, and the scope of learning outcomes implication in the work place. The effectiveness of training leads to individual trainee performance and hence leads to overall performance of the organization. To measure the relationship of training effectiveness and organizational performance and the mediating role of individual performance the study was conducted.

1.3. OBJECTIVES OF THE STUDY

The primary objective of the study is to investigate the various factors affecting the effectiveness of training and its relationship with the overall performance of the organization. In addition to this, study intend to study the current training evaluation practices in large manufacturing industries and also to identify the differences in executives’ perception towards the in house and out bound training programs in enhancing their skills and to decide the future training program on the basis of views and opinions of Executives.

As a result, the explicit objectives of the study comprise:

1. A. To analyse the Effectiveness of Training Evaluation in Nutrine Confectionery Pvt. Ltd., A Case study with following Secondary Objectives:
   i) To find out the training and development activities before and after globalization.
   ii) To identify the changes in training objectives of Nutrine from 1952 to 2014.
   iii) To study the relationship between training and development and training evaluation on the overall performance of the Nutrine.
1. B. To identify the bottlenecks in implementing the Kirkpatrick training evaluation model: the four-level, in large manufacturing industries.

2. To identify the difference in the executives’ perception on training outcomes of in house and outdoor training programmes like skill development, team building and training relatedness.

3. To confirm the influence of the training effectiveness on the overall organizational performance.

1.15. CHAPETRISATION

The thesis consists of five chapters. The first is about introduction, with an overview of training and development in India and large manufacturing industry, significance of the study, statement of the problem, research objectives and cauterization. The second chapter is about earlier studies, in which previous researches related to the current study have been used to lay a foundation for the current research. It has four major parts: Types of training, Important Factors in making Trainings successful, Training Evaluation and outcomes and impacts of training. The third chapter discussed about the methodology that includes research design, instrument development, sampling design and analysis plan. Chapter four presents, case study and teaching notes, training evaluation in large manufacturing industries a report of comparison between Kirkpatrick’s propositions and the respondents of FGD, Data Analysis and inferences of Exploratory factor analysis, MANOVA, Confirmatory factor analysis and Structural Equation Model. Chapter five is an assessment of the important findings from the study, its managerial implications and suggestions.