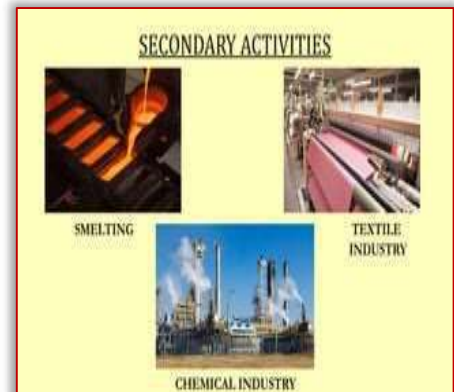


CHAPTER 4 SECONDARY ACTIVITIES

INTRODUCTION

Economic activities namely primarily, secondary, tertiary and quaternary, revolve a "*Secondary activities*", also known as secondary sector activities, play a crucial role in the economy by transforming raw materials into finished goods. This sector encompasses industries such as manufacturing, construction, and energy production. Unlike primary activities, which involve the extraction of natural resources, secondary activities focus on processing, refining, and assembling these resources into products that are ready for consumption or further use. These activities not only contribute to economic growth by creating value-added products but also drive employment and technological innovation, shaping the infrastructure and industrial landscape of a region.



MANUFACTURING:

It involves production to a more value added goods from seeking the raw materials (Primary Sector). The common characteristics are the application of power, mass production of identical products and specialised labour in factory settings. Most of the developing countries gained modern state concept in late 20th century involves "*Manufacturing*" but in a limited way. Industrial activity which involves less complicated systems of production.

MODERN LARGE-SCALE MANUFACTURING INCLUDES THE FOLLOWING FEATURES:

Specialization of Skills/Production Methods. In the 'craft method', factories produce a limited number of custom-made items, which leads to high costs. Conversely, mass production involves making large quantities of standardized parts, with each worker repeating a specific task.

Mechanization: Mechanization involves using machines to complete tasks. Automation, where machines operate without human intervention, represents an advanced level of mechanization. Automated factories equipped with feedback systems and computer controls that enable machines to 'think' have emerged globally.



Technological Innovation: Technological innovation, driven by research and development, is crucial in modern manufacturing. It plays a key role in quality control, reducing waste and inefficiency, and addressing pollution.

ORGANISATIONAL STRUCTURE AND STRATIFICATION

Modern manufacturing is defined by:

- advanced machine technology,
- significant specialization and division of labour to increase production efficiency and reduce costs,

- substantial capital investment,
- large-scale organizations,
- a bureaucratic management system.

UNEVEN GEOGRAPHIC DISTRIBUTION

Modern manufacturing is heavily concentrated in a few specific regions, occupying less than 10% of the world's land area. These regions have emerged as key centres of economic and political influence. Compared to agriculture, manufacturing is far more concentrated in smaller areas due to its intensive processes.

For instance, 2.5 square kilometres of the American corn belt might host four large farms employing 10-20 workers and supporting 50-100 people, whereas the same area could house multiple large factories employing thousands of workers. Industries maximize profits by minimizing costs. As a result, industries should be located where production costs are the lowest.

What is a Foot Loose Industries?

Foot loose industries can be located in a wide variety of places. They are not dependent on any specific raw materials. Like diamond cutting, watch designing, etc.

SEVERAL FACTORS INFLUENCE THE CHOICE OF INDUSTRIAL LOCATIONS

ACCESS TO MARKET

The presence of a market for manufactured goods is crucial in determining industrial locations. A "market" refers to people who not only desire these goods but also have the purchasing power to buy them. Remote areas with small populations offer limited markets. In contrast, developed regions like Europe, North America, Japan, and Australia provide vast global markets due to the high purchasing power of their populations.

ACCESS TO RAW MATERIAL

Raw material used by industries should be cheap and easy to transport. Industries based on cheap, bulky and weight-losing material (ores) are located close to the sources of raw material such as steel, sugar, and cement industries. Perishability is a vital factor for the industry to be located closer to the source of the raw material. Agro-processing and dairy products are processed close to the sources of farm produce or milk supply respectively.

ACCESS TO LABOUR SUPPLY: It is an important factor in the location of industries. Manufacturing still require skilled labour increasing mechanisation, automation and flexibility.

ACCESS TO SOURCES OF ENERGY: Industries which use more power are located close to the source of the energy supply such as the aluminium industry. Earlier coal was the main source of energy, today hydroelectricity and petroleum are also important sources of energy for many industries.



ACCESS TO TRANSPORTATION AND COMMUNICATION FACILITIES: Efficient transport facilities to carry raw materials to the factory and to move finished goods to the market are essential for the development. North America have a highly developed transport system which has always induced the concentration industries in these areas. Modern industry is inseparably tied to transport system which has always induced the concentration of industries in these areas.

CLASSIFICATION OF MANUFACTURING INDUSTRIES

Manufacturing industries are classified on the basis of their size, inputs/raw materials. Output/products and ownership.

1. INDUSTRIES BASED ON SIZE: The amount of capital invested, number of workers employed and volume of production determine the size of industry.

HOUSEHOLD INDUSTRIES OR COTTAGE MANUFACTURING: It is the smallest manufacturing unit.

The artisans use local raw materials and simple tools to produce everyday goods in their homes with the help of their homes. Everyday items made in this manufacturing sector include food products, fabrics, mats, containers, tools, furniture, shoes, and wooden figurines from forest resources. Leather is used to create shoes, thongs, and other goods, while clay and stone are used for pottery and bricks. Goldsmiths craft jewellery from gold, silver, and bronze. Additionally, various crafts and artefacts are made from bamboo and locally sourced wood from forests.



SMALL SCALE MANUFACTURING

Small scale manufacturing differs from household industries in terms of production methods and location, as it typically occurs in workshops outside the producer's home. This type of manufacturing relies on locally sourced raw materials, basic power-driven machines, and semi-skilled workers. It creates jobs and boosts local purchasing power. As a result, countries like India, China, Indonesia, and Brazil have focused on developing labour-intensive small scale manufacturing to create employment opportunities for their populations.



LARGE SCALE MANUFACTURING

Large scale manufacturing requires a vast market, diverse raw materials, significant energy, skilled workers, advanced technology, mass production through assembly lines, and substantial capital investment. This type of manufacturing has evolved over the past 200 years, starting in the United Kingdom, north-eastern U.S.A., and Europe, and has now spread globally.

Based on the large-scale manufacturing system, the world's key industrial regions can be categorized into two main types:

- traditional large-scale industrial regions, which are densely concentrated in a few more developed countries, and
- high-technology large-scale industrial regions, which have spread to less developed countries.



2. INDUSTRIES BASED ON INPUTS/RAW MATERIALS:

Industries can be classified based on the raw materials they use into the following categories:

- (a) agro-based,
- (b) mineral-based
- (c) chemical-based
- (d) forest-based
- (e) animal based

AGRO-PROCESSING involves transforming raw materials from farms into finished products for both rural and urban markets. Key agro-processing industries include food processing, sugar, pickles, fruit juices, beverages (like tea, coffee, and cocoa), spices, oils, fats, and textiles (such as cotton, jute, and silk), as well as rubber.



FOOD PROCESSING Agro-processing covers activities like canning, cream production, fruit processing, and confectionery. While ancient preservation methods like drying, fermenting, and pickling have existed for centuries, they were primarily used on a limited scale to meet the demands before the Industrial Revolution.

MINERAL-BASED INDUSTRIES

These industries utilize minerals as their primary raw material. Some industries, like iron and steel, use ferrous metallic minerals, which contain iron. Others rely on non-ferrous metallic minerals, such as aluminium and copper, found in industries like aluminium production and jewellery making. Additionally, many industries use non-metallic minerals, as seen in cement and pottery production.



CHEMICAL- BASED INDUSTRIES

These industries rely on natural chemical as their primary raw materials. For example, mineral oil (petroleum) is essential in the petrochemical industry. Other industries use natural minerals like salts, sulphur, and potash. Chemical industries also utilize raw materials derived from wood and coal. Examples include industries producing synthetic fibres, plastics, and similar products.



Figure 1 The chemical industry is one of the largest manufacturing industries in all developed and emerging countries. This is a view of the largest site in the world devoted to the industry, at Ludwigshafen in Germany

FOREST-BASED RAW MATERIAL

Using Industries Forests provide a wide range of major and minor products used as raw materials. Timber is crucial for the furniture industry, while wood, bamboo, and grass are essential for the paper industry. Lac, obtained from forests, is used in lac industries.



ANIMAL-BASED INDUSTRIES

Animal-based industries utilize raw materials sourced from animals. For instance, leather is essential for the leather industry, and wool is used in woollen textiles. Additionally, ivory, which is obtained from elephant tusks, is another valuable raw material used in various products.

INDUSTRIES BASED ON OUTPUT/PRODUCT

Industries can also be categorized based on the nature of their output or products. Some industries produce machines and tools made from iron or steel, which are essential raw materials themselves. These industries, known as basic industries, create products used as raw materials to manufacture other goods. For example, iron and steel industries produce machines that are then used in the textile industry to create clothes for consumers.



On the other hand, consumer goods industries produce items that are directly consumed by the public. Examples of such industries include those making bread, biscuits, tea, soaps, toiletries, writing paper, televisions, and other products intended for direct consumer use. These are also referred to as non-basic industries.

CONCEPT OF HIGH TECHNOLOGY INDUSTRY

High technology, or high-tech, represents the most advanced generation of manufacturing activities. It involves the application of intensive research and development (R&D) efforts to produce products with advanced scientific and engineering features. In high-tech industries, professional (white-collar) workers form a significant portion of the workforce, often outnumbering the production (blue-collar) workers. These industries are characterized by the use of robotics on assembly lines, computer-aided design (CAD) and manufacturing, electronic controls for smelting and refining processes, and the continuous development of new chemical and pharmaceutical products.



The high-tech industrial landscape is marked by neatly spaced, low-rise, modern buildings that combine offices, plants, and labs, rather than large, traditional factories and storage facilities. Planned business parks designed for high-tech start-ups

have become integral to regional and local development strategies. High-tech industries that are regionally concentrated, self-sustained, and highly specialized are known as **Technopolis**.

Manufacturing contributes significantly to the world economy. Iron and steel, textiles, automobiles, petrochemicals and electronics are some of the world's most important manufacturing industries.

CONCLUSION

Manufacturing is a complex and diverse field, playing a vital role in economic development by creating jobs, producing essential goods, and driving innovation. Understanding the classification of manufacturing helps in identifying different types of production processes, products, and business models within the industry, providing a clearer view of how various sectors contribute to the overall manufacturing landscape. Each type of manufacturing comes with its own advantages and challenges, and industries must choose their approach based on product requirements, market demand, available technology, and economic factors.

The Silicon Valley near San Francisco and Silicon Forest near Seattle are examples of technopolis.

Are some Technopolis developing in India?
Yes, definitely- Bengaluru, Hyderabad, Gurugram, Noida, Chennai.