



# IMPACT OF INDUSTRIAL AUTOMATION

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## ABSTRACT

*The industrial automation market has been growing at a considerable pace over the last few years in India- owing to the growing need, complying with international standards in quality and cost-effective methods of production. (Mrinmoy Dey,2015). Industrial processes can be controlled manually, but with industrial automation, machines can be controlled by the use of computers as well as different electronic devices. Mainly there are four types of industrial automation: They are fixed, programmable, flexible and integrated automation.*

*Industrial automation has a number of advantages, such as increased productivity and safety, at the same time reduces human error and, thereby, leads to high-quality output. Next generation manufacturing strategies must support global competitiveness, innovation, and introduction of new products, and strong market responsiveness. (François Jammes and Harm Smit,2005)*

*The aim of automation in the process of manufacturing and marketing have been significantly advanced to be autonomous. It should be noted that the future potential of automation is aimed at do away with the repetitious and hazardous job function by serving the outsourcing of the same to a machine.*

**KEY WORDS:** *Industrial automation, Technological Advancement*

## INTRODUCTION

Across various sectors, India is experiencing a significant increase in technological advancements and digitization. The demand for professionals skilled in automation technologies is growing to contour manufacturing processes, increase productivity, and enhance efficiency. This indicates good opportunities for youths seeking a rewarding and promising career in the field of Industry Automation. Future scenarios of distributed automation require more mechanisms for the geographical distribution of automation functions (Peter Neumann,2006).Initiatives of Government of India's like "Make in India" and "Digital India" are further driving the adoption of automation technologies, creating a favourable environment for professionals in the field of Industry Automation.

## OBJECTIVES OF THE STUDY

The following are the objectives of the study,

1. To identify the problems and prospects of industrial automation to an enterprise.
2. To examine the role of industrial automation in the economic development of the country.
3. To suggestions to educational institutes and government with regard to industrial automation.

## RESEARCH METHODOLOGY

Data used for the study is secondary based data. The data is collected from the sources like various reports published by government agencies and NGOs.

## FINDINGS

The manufacturing sector has played a significant role in the growth of the Indian economy,contributing nearly 15 % to the country's GDP over the last few years. The National Manufacturing Policy was announced the target by raising the manufacturing share from the level of 15 % in GDP to 25 % by 2022. The enhancement in industrial investment has imparted to the growth of the automation market. The country's Industrial Automation Market size is expected to reach USD 15.12 billion in 2024 and grow up at a CAGR of 14.25% and to reach US Dollar 29.42 billion by 2029.



The major private and public companies operating in Industrial Automation Market in India are :

### 1. Space Magnum Equipment (Private Limited)

Introduced concept of TSM (Total Stores Management) using which are able to provide combinations of most appropriate system, ensuring highest storage density and faster retrieval. As the efficiency of the stores depends mainly on how fast the stored material can be located and how fast the stored material is retrieved. These required efficiency forcing organisations world-over to have a re-look at their stores. Valuable floor space saving by utilising the height, reducing manpower requirement, save space and easy handling of material, avoiding damage and wastage of material, allowing more precise control over the inventory modern storage systems, approach towards providing with high-efficiency storage systems at the providers organisational capabilities.

### 2. Daifuku India (Private Limited)

- **Manufacturing and Distribution Systems:** Provides automated storage, transport, sorting and picking systems that are optimized for each customer, to distributors including e-commerce, retailers, wholesalers, transportation and warehousing, and to manufactures including food, pharmaceuticals and chemicals also deliver the smart logistics sought by customers by incorporating cutting-edge technologies such as IoT and AI.
- **Cleanroom Production Line Systems:** Provides clean room transport and storage systems essential in manufacturing semiconductors and flat panel displays and deliver numerous systems to many of the world's leading electronics companies and component manufacturers.
- **Automobile Production Line Systems :** provides automobile manufacturers worldwide with systems that support their manufacturing operations. In the ever-evolving automobile industry, they use extensive know-how and technologies to respond to sophisticated and diversified demand, as well as develop pioneering systems that support parts logistics and other areas in automobile manufacturing.
- **Airport Technologies :** Provides a broad range of solutions for airports, including baggage handling systems, automated baggage check-in systems, baggage screening systems, and software and controls. The business operates worldwide in collaboration with its Group affiliates in North America, Europe and Asia Pacific.
- **Auto Car Wash Machines :** Provides mainly car wash machines and related products to filling stations and automobile dealers primarily in Japan and Korea. The business offers a range of car wash models to ensure customers can choose features that meet their needs, including eco-friendly, ultra-quiet and water-saving functions among others.
- **Electronics :** Provides industrial computers, measuring/control systems, and IoT solutions. Customers come from a wide-range of industries such as energy, medical, and railway.

### 3. Godrej Koerber Supply Chain (Limited)

Godrej Koerber is part of two industrial corporation Godrej & Boyce Mfg. Co. Ltd. and Körber AG. It's a Joint Venture company in India offering intra logistics automation solutions with European technology and manufacturing set-up in India. With a largest installed base of Automated Storage and Retrieval Systems (ASRS) in India, Godrej Koerber offering solutions such as system design, equipment supply, installation, testing & commissioning, system handholding, operation & maintenance, annual maintenance contract and upgrades. The company claims strong domain expertise in various industry segments such as Pharmaceuticals, Food & Beverages, Chemicals, Agro-Chemical, Textiles, Automobile, Paper, FMCG, Railways, among others.

### 4. Kardex India Storage Solutions (Private Limited)

Kardex is a global industry partner for intralogistics solutions and a leading supplier of automated storage solutions and material handling systems. The Group consists mainly of two entrepreneurially managed divisions, Kardex Remstar and Kardex Mlog. Kardex Remstar develops, produces, and maintains dynamic storage and retrieval systems and Kardex Mlog offers integrated materials handling systems and automated high-bay warehouses.

The two divisions are partners for their customers over the entire life cycle of a product or solution. This begins with the assessment of customer requirements and continues through planning, realization, and maintenance of customer-specific systems. It ensures a high level of availability combined with low total cost of ownership and operation.

### 5. Armstrong (Ltd).

Automation solutions for chemical industry best serve the rigid needs on multiple levels across the whole chain and contribute to plant profitability by achieving operational excellence and safety. It also plays an essential role



in reducing production costs, maximizing efficiency, enhancing productivity, and increasing plant safety. Automation solutions for white goods handling aid the needs of the operations highly efficient, speedy, and free of error and result in high throughput reducing the overall cost. Automation solutions are transforming pharma concerning multiple product handling, mass production, and real-time monitoring. Automation solutions for automotive aftermarket industry making its customers' business reliable and efficient. Automation solutions for Retail industry offer the most effective material handling solutions that match the need of their facility. Expert solutions for naked food handling that include a range of food handling conveyors like clean conveyors, wipe-down conveyors, stainless steel conveyors, and heavy wash-down conveyors. Automation for non-food manufacturers making their businesses successful and efficient. The parcel industry is witnessing a boom with the meteoric rise in demand for apparel, electronics, and lifestyle categories. The sellers provide free shipping and easy returns as incentives for purchases, which lead to critical optimization of the entire supply chain.

### India's Industrial Automation Market -Segments are

#### a) Type of Solution

- Automated Material Handling Solutions -Hardware Systems,
- Automated Storage and Retrieval Systems ,
- Mobile Robots, and Automatic Identification and Data Capture and

#### Software -

- Warehouse Management Systems
- Warehouse Control Systems

#### b) Factory Automation Solutions

- Industrial Control Systems
- Field Devices (Sensors and Transmitters, Electric AC Drives, Servo Motors, Computer Numerical Control Machines, Inverters, and Industrial Robots),

#### Software :

- Manufacturing Execution System
- Product Life cycle Management
- Digital Manufacturing

#### c) End User

- Automated Material Handling Market (Manufacturing and Non-manufacturing (General Merchandise, Healthcare, and FMCG/Non-durable Goods)
- Factory Automation Market (Pharmaceutical, Automotive Food and Beverage, Textiles, Power, Oil and Gas, Petrochemicals, and Fertilizers)

The market sizes and prediction are provided in terms of value (US Dollar) for all the above segments.

(Source:<https://www.mordorintelligence.com/industry-reports/india-industrial-automation-market>)

## SUGGESTIONS

### For Educational Institutes

- Give training and instructions to equip teachers and trainers as they can play a vital role in inculcating positive attitude towards entrepreneurial development in the students.
- Conduct programmes so as to nurture the idea of entrepreneurship in educational institutes.
- Provide assistance to startup founders at educational institutes by collaborating with Government and private agencies.
- Provide common facilities to students working on start-ups .
- Provide a platform for the students to pursue entrepreneurial activities.
- Create club ,events and competitions at regular interval.
- Identify and motivate students with a potential for an entrepreneur,and give adequate training irrespective of course or department of study.

#### To Government :

- Conduct programme for the skill development of the unemployed and financially backward youth belonging to all communities so as to understand and identify the employment possibilities through Industrial automation.
- Provide arrangements for tools and equipments as per the requirements of entrepreneurs.
- Support entrepreneurs financially as and when required so as to avoid industrial sickness.
- Conduct research and find possibilities for modernisation.
- Make policies ,rules and regulations to ensure employment as there are chances for growing Industrial automation more than optimum level.



### CONCLUSION

Industrial automation refers to the use of control systems, such as computers or robots, and information technologies (IT) for handling different processes and machinery in an industry . Policies ,rules and regulations are to be formed by the government at different levels as Industrial automation should be at optimum level so as to ensure employment for public as Industrial automation replace human beings.

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