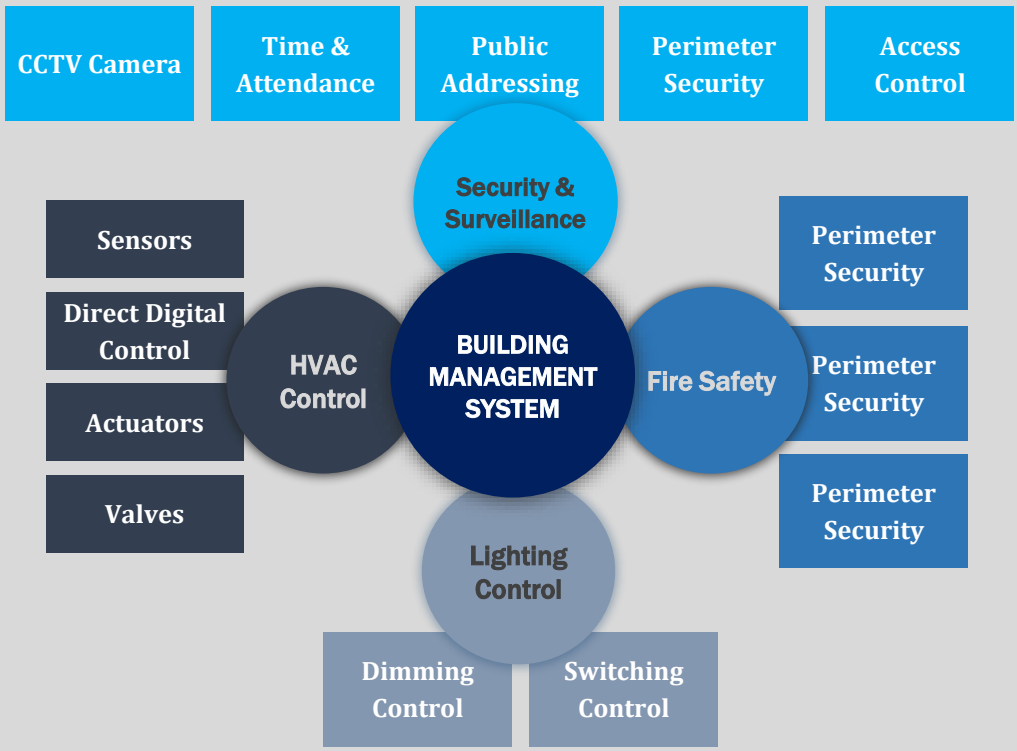
Security & Surveillance

Sector overview

Feedback has considered five sub-segments under Security & Surveillance sub-sector of the Electronics Sector. These sub-segments are Security & Surveillance Systems, Fire & Safety Systems, HVAC Controls, Lighting Controls and BMS Solutions. All these systems fall under the larger umbrella of Building Management Systems (BMS) market. Building Management Systems are deployed in buildings for efficient energy performance. It controls and manages building facilities such as lighting, electricity, fire precautions, safety, security, and HVAC. Shift towards Green and Smart buildings is rising the demand for BMS in India. Demand is arising from segments such as large offices, Information Technology and Technology Parks, commercial complexes, multiplexes , malls, and airports.

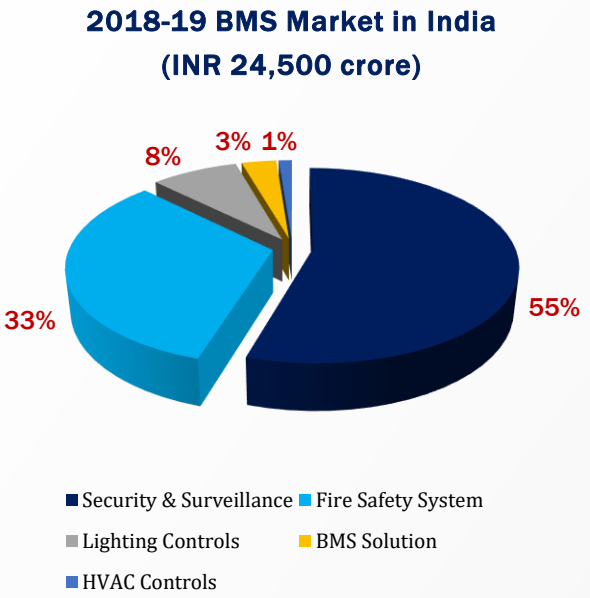
Composition of Security & Surveillance sub-sector from the study perspective

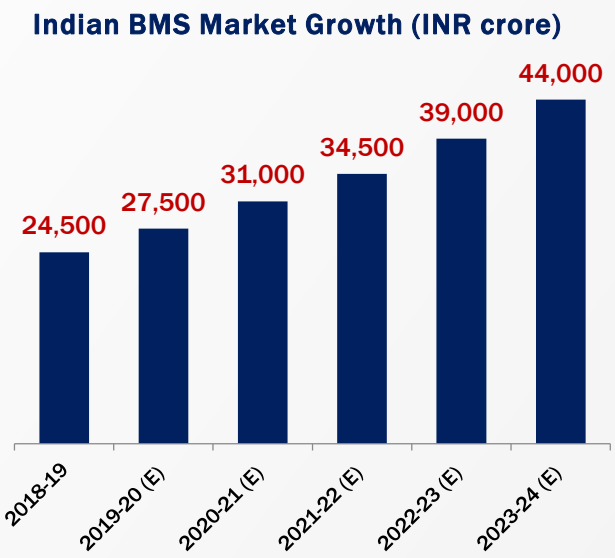


Building Management Systems (BMS) industry has been estimated at INR 24,500 crore in 2018-19 across residential, commercial & industrial sectors in India. It consists of installation of sensors, controllers and any other hardware that is then integrated using a software program for centralized monitoring and controlling purposes. Leading players in this industry are Honeywell, Legrand, Advantech, Lutron, Crestron, Siemens Building Technologies, Schneider Electric, Johnson Control, ECIL, Tyco, Ingersoll Rand, etc.

Electronic Security & Surveillance and Fire Safety Systems account for 88% share of the Indian BMS market. The BMS market is likely to grow by 12% CAGR over next 5 years to become INR 44,000 crore market by 2023-24. Within the sub-segments, Electronic Security & Surveillance market has been projected to grow at 16 per cent CAGR over next 5 years due to wider adoption of CCTV cameras across cities. Other segments likely to grow at a moderate CAGR of 7 – 8%. Key drivers for growth of Indian BMS market are

- Increased focus on energy efficiency
- Development in Electronics and Sensor technology
- Evolution of wireless technology; and
- Development of Energy Conservation Building Code (ECBC)





Source: Feedback Primary Research

The Security & Surveillance Systems market is estimated at INR 13,400 Crore for 2018-19 and likely to grow to INR 28,000 crore by 2023-24. It is largely an import based industry with approx. 80% of low cost security products can be seen in the unorganized market. Indian electronic security market is dominated by video surveillance; 40% of which is Analog Surveillance and rest is IP Surveillance. Key players in this market are CP Plus, Honeywell, Bartronics India, Hikvision, Dahua Technology and Axis Communication.

The Fire & Safety systems market size in 2018-19 is estimated at INR 8,000 crore. The market is likely to grow at a CAGR of 8% to CAGR of INR 11,750 crore by 2023-24. The Government has been continually regulating and making stricter rules regarding fire safety, life safety and fire protection in residential, commercial as well as industrial building which is driving the growth of this sector. With rapid urbanization and industrialization, fire protection and prevention has become an integral part of all buildings.

Lighting Controls market is largely driven by the construction boom and increasing penetration of Green buildings which has hugely contributed to the growth of this market. Lighting Controls have strong presence in both residential and commercial sectors, and there is growing demand from Hospitality sector.

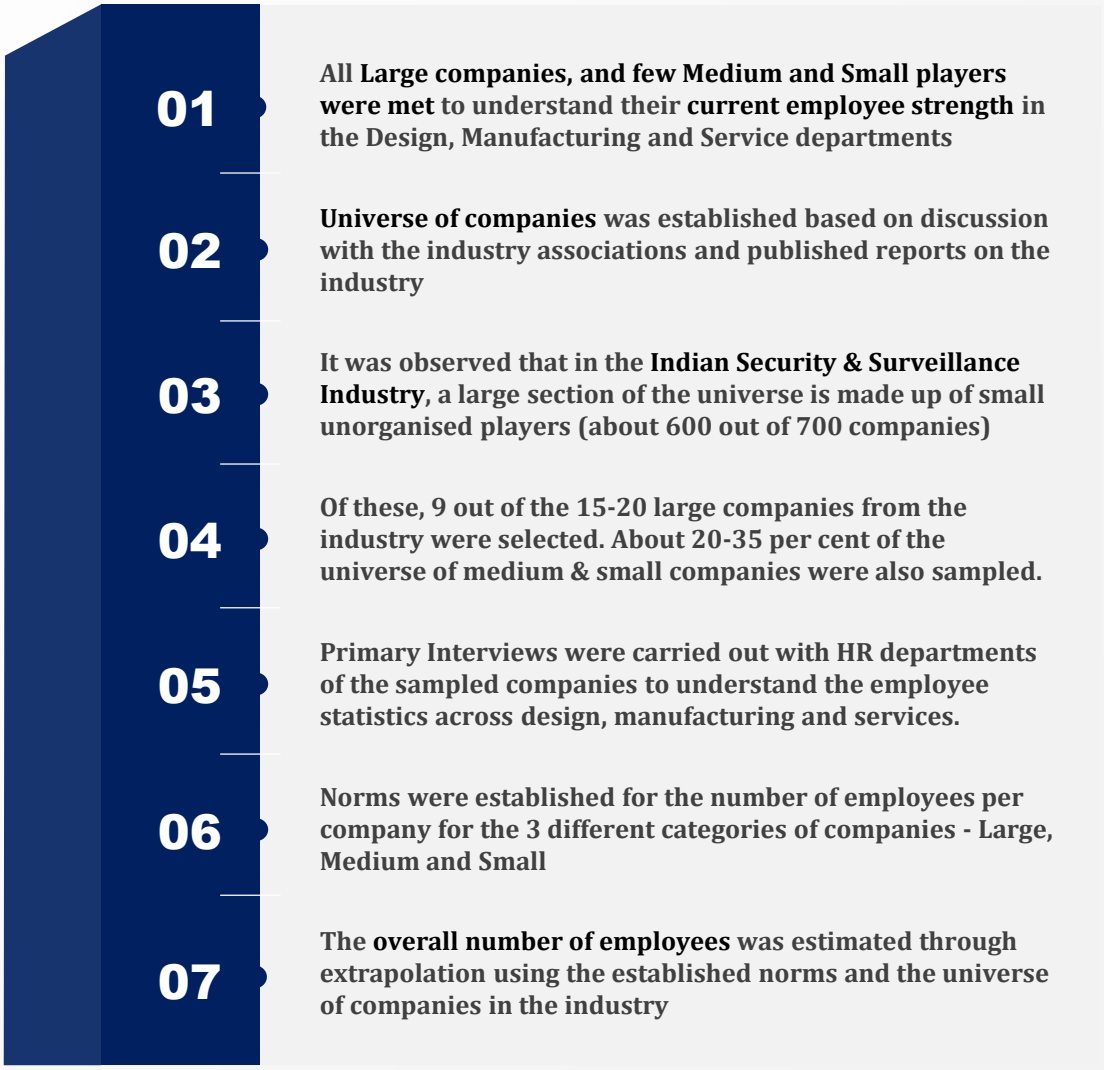
Upgrade in ecologically sustainable technologies and constant innovations in the HVAC market has been a key demand driver for the boom in the HVAC Controls market in India

Approach to estimate current employment in Indian Security & Surveillance industry

The Indian security & surveillance industry has about 700 companies which can be categorised based on their revenue levels. Of these 700 companies, about 15-20 companies having annual revenue greater than INR 200 crore can be categorised as Large companies. About 70-80 companies with annual revenue between INR 50-200 crore can be categorised as Medium scale companies. The remaining 600 companies are smaller with revenues less than INR 50 crore per annum.

A sample of 95 companies was identified – containing a healthy mix of companies from the Large, Medium & Small category. The companies in the sample were interviewed to understand their current employee strength, and its categorization on various parameters such as – type of employees (on-role v/s contractual), function (design v/s manufacturing v/s service) and their level of seniority.

Norms for number of employees were established for companies falling in all the 3 categories. Estimates were arrived at for all the three segments through judicious extrapolation of the gathered data.

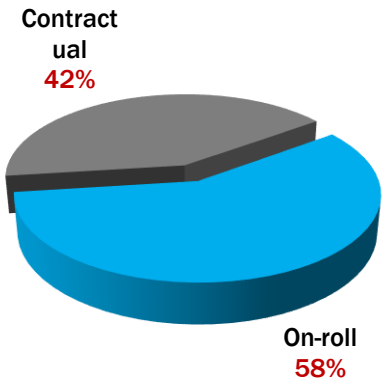


Employment scenario in Indian Security & Surveillance industry

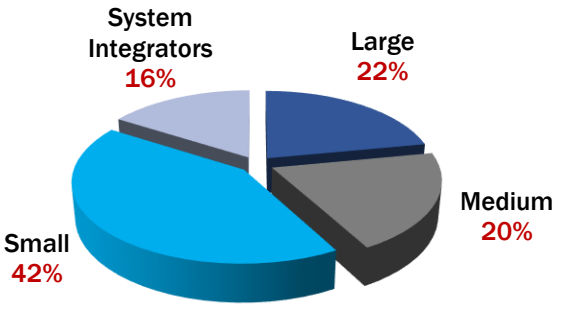
It is estimated that the Indian Security & Surveillance industry currently employs around 100,000 people across departments, and across the organisational hierarchy. The presence of a moderate manufacturing and significant sales & service base across the country, these functions employ more than 90 per cent of the current workforce of the industry. Share of contractual employees in the over workforce is considerably higher.

Apart from these stakeholders, the industry also has a strong base of security system integrators. It is estimated that there are about 900 system integrators in the country, with an average of about 8 employees per company. Additionally, the industry also has more than 100 companies providing video analytics services. These companies employ an average of about 90 employees per company.

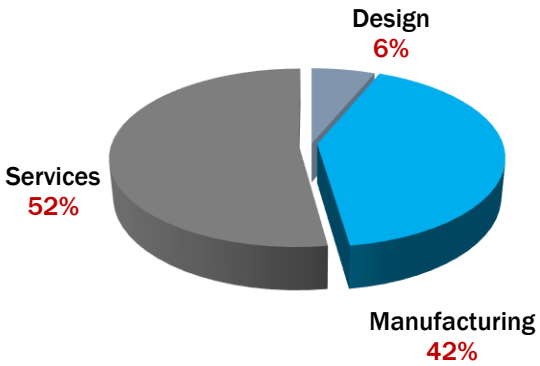
Approx. 60% employees in the Security & Surveillance industry are on company's pay roll



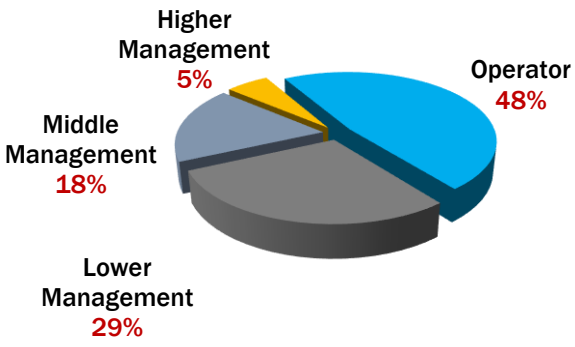
Small scale category employs significantly more people due to the presence of ~600 companies each with about 70 employees



Being an import driven market, more than half the employees work in Service sector in Security & Surveillance industry



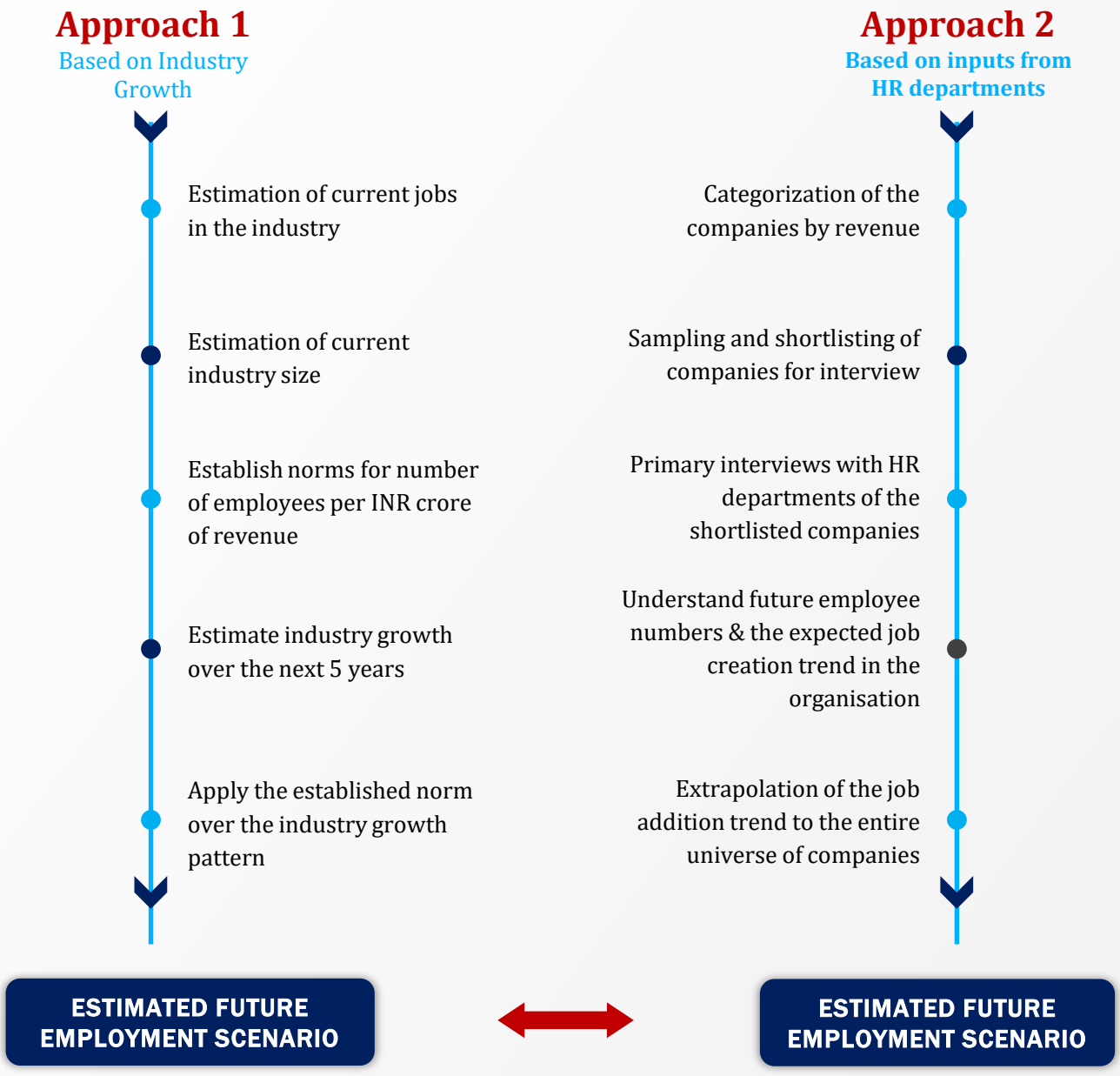
23 per cent of the employee base manages the activities carried out by the operators & supervisory staff (about 77 per cent)



Approach to estimate future employment in Indian Security & Surveillance industry

Potential employment generation estimates were arrived at through 2 parallel approaches. The first approach used an industry norm (employee per INR crore of revenue) arrived at through discussions held with industry stakeholders. The industry norms are then superimposed onto the growth trend of the industry to arrive at a future estimate.

The second approach was based on primary interviews conducted with the HR department of sampled companies. The estimates arrived at through both the approaches were compared and reconciled to finalize the future employment estimates for the industry.



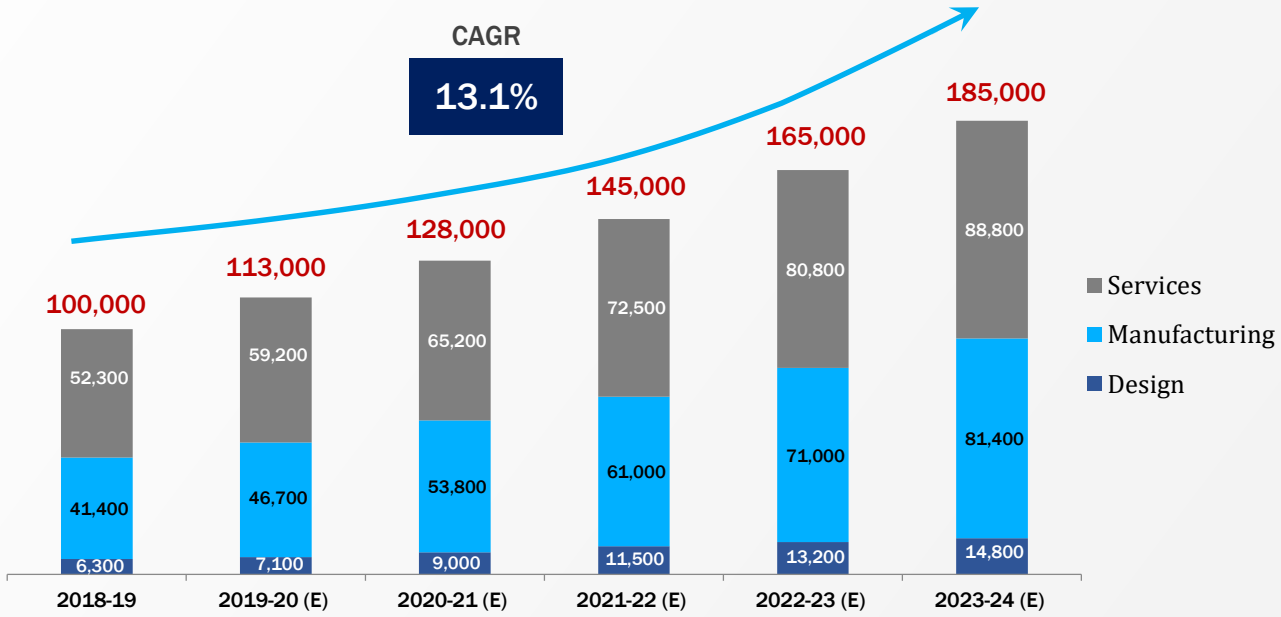
Future employment scenario in Indian Security & Surveillance industry

It is estimated that the industry would generate about 85,000 more jobs by the financial year 2023-24. This increase would raise the number of people employed in the industry to 185,000. This job creation in the industry is expected to take place at a CAGR of about 13 per cent over the next 5 years.

The industry has evolved over the past decade and matured to a great extent. As a result, no major change in the composition of the workforce is expected in the coming years. All three functions – design, manufacturing and service are expected to grow more or less uniformly.

The boom in the security & surveillance industry would be fed by several companies - ranging from home grown companies such as CP Plus, to joint ventures such as Prama Hikvision, to multinationals such as Bosch, Panasonic and Honeywell.

Multiple factors are expected to drive this growth in the industry. There is a strong government push to enhance security for the citizens. Large purchases are expected to be seen under the Smart City scheme across 100 cities, and under the Nirbhaya Fund for women's safety, where INR 2,230 crore has been allocated across eight cities. The Delhi Government has also announced its intention to install more than 100,000 CCTVs across Delhi over the span of few years.



Emerging areas where skilling would be required in future

The evolution of advanced concepts like Artificial Intelligence and Deep Learning is opening up new dimensions of the security and surveillance industry. The workforce of the future would be expected to be adequately trained and skilled in these aspects of the business.

Use of Artificial Intelligence and Deep Machine Learning in the field of video analytics has given rise to a new industry across the world. A number of system integrators & security solution companies are already offering video analytics solutions in the India market.

Surveillance on mobile platforms, such as trucks, planes, trains and automobiles is another emerging segment. With estimated 60-100 sensors on an average vehicle, mobile surveillance provides a vast untapped opportunity in the Indian market.

Along with AI and ML, technologies like Big Data, Fast Data, Cloud Computing & Edge are providing value by enabling deeper and wider analysis of security & surveillance data. Further integration with IoT systems also unlocks the potential for higher degrees of Building Automation.

Further trends in Access Control Systems include smartphone integration and multiple device management functionality from a single platform from around the globe.

Skilling requirement for Indian Security & Surveillance industry

Qualification requirement

Level	Design	Manufacturing	Service
Operator	• ITI or diploma in Computer Science, IT, Electronics & Communication or Electrical & Electronics Engineering. • Experience as lab assistants or helpers preferred.	• Secondary or Higher Secondary Schooling. • ITI or Diploma.	• Any degree (preferably a technical degree) or diploma in Electronics & Communications or IT Engineering. • Higher Secondary schooling with experience in repairs also accepted.
Lower Management	• Diploma or Graduate Engineer.	• Diploma with experience working as an Engineer.	• Any graduate degree.
Middle Management	• Graduate Engineer with 5-10 years of experience.	• Bachelors degree in engineering with experience. • Masters degree in engineering is not mandatory, but may be considered.	• Any graduate degree with 5-8 experience in sales. • Masters in Management with 3-5 years of experience preferred.
Higher Management	• Graduate Engineer with at least 10 years of experience. • Masters degree or Doctorate in Engineering is not mandatory, but is preferable.	• Bachelors degree in Engineering with at least 15 years of experience (usually promoted from the same organization) • Masters degree or Doctorate in Engineering is considered if recruited from the market.	• Technical degree with at least 10 years of experience. • Masters in Marketing & Sales Management is preferred.

Skilling requirement for Indian Security & Surveillance industry

Skill requirement

Level	Design	Manufacturing	Service
Operator	• Lab assistants assist engineers in circuit designing, lab testing and other minor works. • Basic knowledge of various components, its working and applications.	• Knowledge of components, like sensors & transducers, diodes, resistors and other electronic components. • Basic application of electronic principles, soldering and assembly. • Knowledge of safety aspects of manufacturing plant.	• Education in field of electronic services, technical certification, troubleshooting, assembling and disassembling, repair and monitoring of alarm systems, CCTV (hardware and electronic devices), cable connections. • Knowledge of various components like connectors, cords, LAN/WAN connectivity components, lighting controls, HVAC control repairs etc. • Knowledge of products such as alarm systems, CCTV network, smoke detectors, notifiers, etc.
Lower Management	• Knowledge of various circuit design, logic gates, MATLAB design, advanced mathematics. • In case of software design, knowledge of LabVIEW, Linux, drafting using CAD, coding in C++, Python and other automation software. • NICET certification (not mandatory).	• Knowledge of PLC, SCADA, signal & systems, communication systems, network protocols like CAN, HART, etc. • Knowledge of Digital Control systems, digital signal processing, Bio-medical instrumentation etc. • Knowledge of manufacturing process, quality and testing of products etc.	• System Integration, knowledge on different networking application, connectivity etc. • Sales experience. • Product knowledge (both technical and non-technical) is preferable but not mandatory. • For BMS and other automation integration, knowledge of communication protocols like KNX, BACnet, Modbus, DCS etc.
Middle Management	• Knowledge of various innovative technologies, like Artifical Intelligence. • Team handling. • Advance process control.	• Process optimization, production control, testing & approvals, and supply chain management. • Supervision and managing various functions.	• Managing key geographical regions and sales territories, Institutional sales handling. • Sales strategy implementation.
Higher Management	• Lead the organization with innovative solutions. • Experience in handling projects and ability to drive business.	• Understand market demand & plan for future. • Production planning strategy. • Understand all business units and their functions.	• Sales strategy, planning, business lead, acquiring new clients, expansion plans, growth strategy etc.

Industrial Automation

Segments included in this industry

Machine OEM's: CNC / NC / Machine Manufactures	**Energy Service Companies – Energy meters / UPS & Inverter**
HVAC OEM & Service Providers	**Solution Providers**
Product Automation	**System Integrators**
IIoT / Industry 4.0 / M2M / SCADA / Super SCADA	**Mechatronics / PLC / HMI / ATM / KIOSK / AFD**
Robotics / 3D Printing / Electric pneumatics	

Sector overview – Industrial Automation

Indian Industrial Automation industry is estimated to be as big as INR 420 billion during the year 2018-19, which is expected to grow at 11 per cent CAGR over the next 5 years to reach INR 730 billion.

This market is broadly segmented into three segments - Process automation, Factory automation, and Electrical automation, with about 250 companies providing their solutions across these segments. The market is dominated by large turnkey solution providers that offer end-to-end solutions for automation. Large and medium scale players include companies such as ABB, Siemens, GE, Fanuc, Rockwell Automation, Danfoss, Mitsubishi Electric, etc.

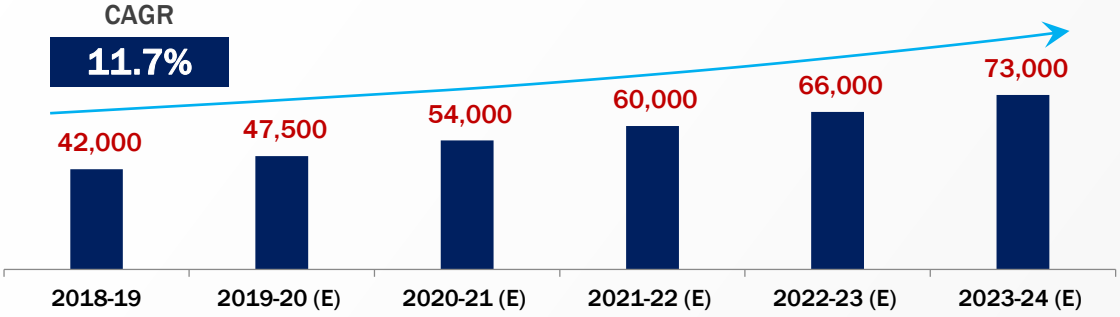
The most prevalent technologies implemented by the industry include Distributed Control Systems (DCS), Supervisory Control And Data Acquisition (SCADA), Programmable Logic Control (PLC), Manufacturing Execution System (MES) and Human Machine Interface (HMI). Among these, SCADA and MES are the technologies which are in high demand across the various industries owing to its high degree of versatility.

This market is driven by increasing investments in the secondary manufacturing sector owing to encouraging government policies and changing attitude towards technology adoption. Several Indian industries are upgrading their existing automation technologies with the aim to reduce production times and to promote safety & efficiency. Automation helps achieve operational excellence, improved productivity & quality, and maintain Six Sigma standards in the production processes. There is also an equal push from the government to improve efficiency & quality to ensure India's position as a competitive global manufacturing hub.

Split of domestic v/s imported products in Industrial Automation market

Total: INR 42,000 crore

Indian Industrial Automation market forecast (INR crore)



Source: Feedback Primary Research & Analysis

Sector overview – UPS & Home Inverter

Indian UPS and inverter market is gaining momentum, as these devices have become a necessity in almost every modern household, office and industrial facility. Even though the power supply scenario has improved significantly over the years, the demand for power backup products continues to grow due to the convenience offered by it and its need in critical systems.

The manufacturing ecosystem for UPS and inverters in India has also matured over the years. while technological requirements of Inverter manufacturing are greater than the manufacturing and design capabilities present in India currently. The Indian Home inverter and UPS industry has about 150 companies across the segments. A sample of 18 companies was identified – containing a mix of all the large companies, and a few medium & small-scale companies from across the segments. Large and medium players include companies such as Luminous, Microtek, Vertiv, Schneider and TMEIC etc.

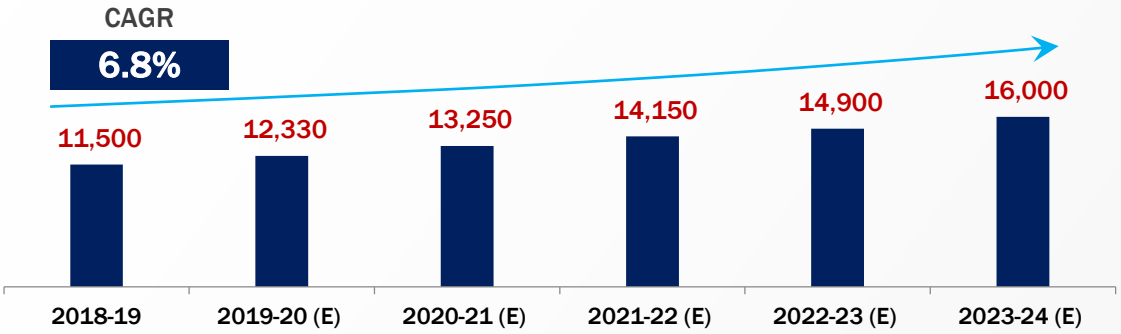
The overall market of Home Inverters & UPS in India is INR 11,500 crore in 2018-19. This market may grow at 7 per cent CAGR over the next 5 years to INR 11,500 to 16,000 crore. The demand in the Indian inverter/UPS market has increased due to constant power outages and a strong push from the government to accelerate the National Solar Mission. India is a developing economy and our industrial base is increasing constantly. The per capita income of Indians has gone up, improving lifestyles. In this scenario, with increasing power cuts, domestic consumers will drive the trend of increased UPS system and inverter adoption. Although most of the UPS and power backup systems are used in the information technology (IT) and telecommunication industries to protect data, many industrial processes are now microprocessor and PC-based and are very susceptible and sensitive to power disturbances. Recent trend in this industry is shifting to hybrid inverters and solar inverter. Now a days many system integrators offering solar rooftop inverter solutions at affordable prices.

UPS manufacturers face many challenges related to machinery, raw materials, skilled manpower and land to build manufacturing plants, which makes it difficult to set these up in different locations. Also, lack of the easy availability of electricity and water are a major deterrent to the smooth running of manufacturing units. Most of the companies use machines and raw materials imported from other countries, which increases the overall costs. Not having skilled manpower also plays spoilsport.

Market split by Home Inverter and UPS for 2018-19

Total: INR 11,500 crore

UPS & Home Inverter market forecast (INR crore)



Source: Feedback Primary Research & Analysis

Sector overview – HVAC

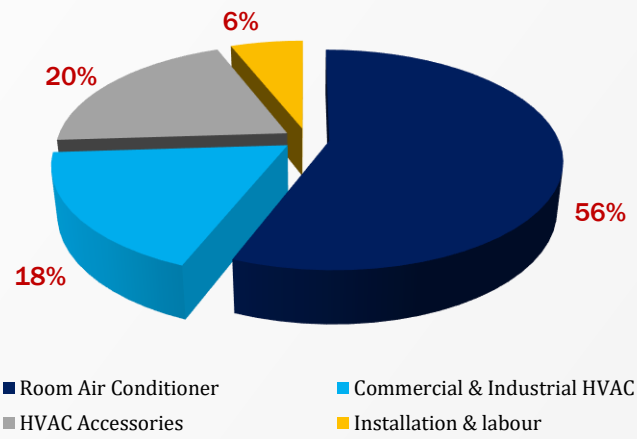
Indian HVAC industry is estimated to be valued at around INR 28,000 crore in size during 2018-19. This market is expected to grow at 8.6 per cent CAGR over the next 5 years to reach INR 42,000 crore.

The Indian HVAC industry has about 100 companies across segments, which fiercely compete for market share in terms of price, energy efficiency, brand reputation, quality, and technical know-how. Some of the key large and medium scale players in this industry include Daikin, Voltas, Blue Star, Johnson Controls- Hitachi, Carrier, LG and Mitsubishi Electric.

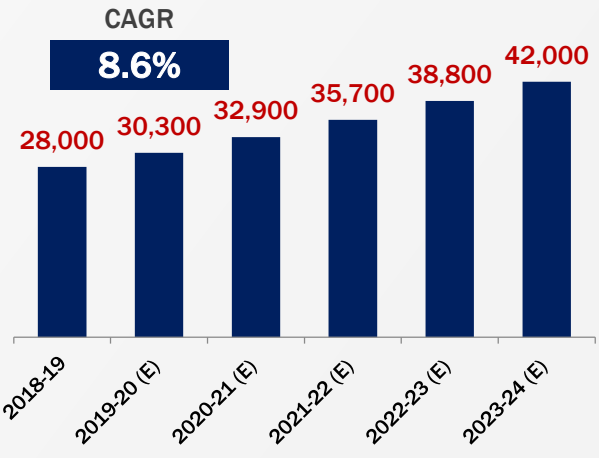
The room air conditioning segment captures the largest share in the HVAC market, and is expected to retain its dominance till 2023-24. Centralized air conditioners, in contrast, are more expensive, and are preferred as permanent cooling solution for large commercial complexes and office spaces, where larger capacities are required for effective cooling. Market for VRF or Variable Refrigerant Flow technology has grown significantly in the last 8 – 10 years and the technology currently enjoy highest market share in Commercial HVAC segment.

Then industry has been evolving with technological innovations taking place in recent years. Most recent product launches have been geared towards added functionalities such as space heating, humidity control and air purification. Advanced cooling technologies such as VRF, Magnetic Bearing Chillers etc. are likely to dominate the market in the coming years.

2018-19 HVAC Market in India



Indian HVAC market forecast (INR crore)



Source: Feedback Primary Research

Sector overview – Machine Tools

India stands 12th in the world in terms of production, and 8th in terms of consumption of machine tools. Machine tools are primarily used to cut and shape metal and other material as per specifications to make a finished product. The size of market for such machines & machines tools in India is estimated to be around INR 16,250 crore in 2018-19. The demand in this market is expected to grow at about 8-9 per cent CAGR to reach INR 24,000 crore by the year 2023-24.

The machine tools market can be categorized broadly into two categories - CNC machines, and Non-CNC machines. With a share of about 80 per cent, the market is dominated by CNC machines. Metal cutting tools accounted for 86 per cent of the market, while the rest consists of metal forming tools. The automotive sector is the largest consumer of machine tools in India, which is followed by the dies & moulds segment.

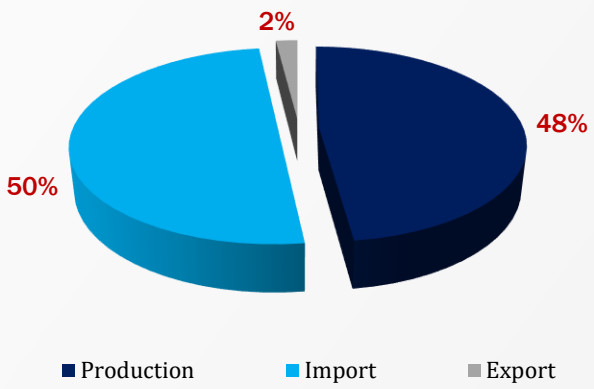
India has nearly 200 manufacturers of machine tools in the organized sector, along with another 400 small scale units making up an unorganized sector. Some of the large and medium scale companies in this industry include Hindustan Machine Tools (HMT), TAL Manufacturing Solutions, MTAB Engineers etc.

Indian manufacturers have grown rapidly over the last decade, and have marked their presence in the global market across all the categories of machine tools. Indian machines are price competitive in their range making them suitable for exports. Many of these manufacturers are also exporting to countries like Germany, Turkey, China, Middle East, Russia, South Korea, etc. The country is set to become a more prominent player in the global machine tools market, and is expected to pave way for high-end machine tool manufacturing in the country.

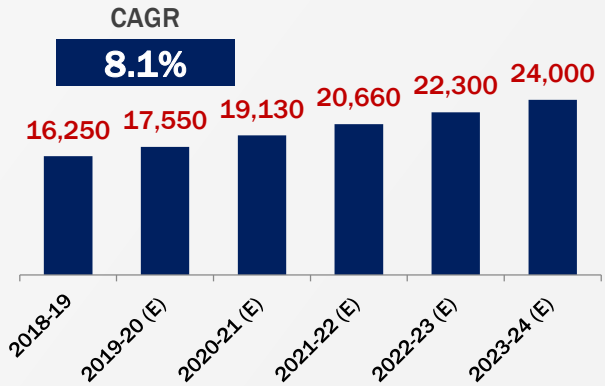
Demand for high precision machines is expected to increase especially from segments such as automobile, auto ancillaries, railways, dies & moulds. A key trend being observed in the industry is the emergence of optimized machine tools. Automation of the machine tools is another major trend that the machine tool sector that is currently witnessing

Machine tools are among the key sectors in the National Capital Goods Policy aimed at making the Indian capital goods sector globally competitive. The policy integrates major capital goods sub-sectors like machine tools, textile machinery, earthmoving and mining machinery, heavy electrical equipment, plastic machinery, process plant equipment, dies, moulds and press tools, printing and packaging machinery and food processing machinery as priority sectors to be envisaged under 'Make in India' initiative. The boost to the capital goods sector is expected to be initiated by the creation of an enabling ecosystem for capital goods through sustained incentives for domestic manufacturers to meet the demand from both the domestic as well as the export markets.

2018-19 Machine Tool market in India



Indian Machine Tool market forecast (INR crore)



Source: Feedback Primary Research

Approach to estimate current employment in Indian Industrial Automation industry

The industries under consideration have a total of about 800 companies across the 4 product segments –100 HVAC companies, 150 UPS & home inverter companies, 400 machine tool companies and about 200 industrial automation companies. A sample of 108 companies was identified – containing a equitable mix of large, medium & small scale companies from across the 4 product segments.

The companies in the sample were interviewed to understand their current employee strength, and its categorization on various parameters such as – type of employees (on-role v/s contractual), function (design v/s manufacturing v/s service) and their level of seniority.

Norms for number of employees were established separately for each of the product segments falling under the industry. Estimates were arrived at for all the product segments through judicious extrapolation of the gathered data

01 All Large companies, and few Medium and Small players were met from all product segments in the industry to understand their current employee base across departments

02 Universe of companies was established based on discussion with the Automation Industries Association, and published reports on the Machine OEM, UPS & Home Inverter industry

03 A study of the universe helped understand the key players across segments, and allowed the classification of companies as Large, Medium & Small based on the employee number

04 Primary Interviews were carried out with HR department of a sample of companies from across product segments to understand the employee statistics and their splits

05 Based on the interviews, norms of number of employees per company were established for the various industry segments

06 Overall employment estimates were arrived at by extrapolation - using the employment norms and the universe of companies across each of the product segments

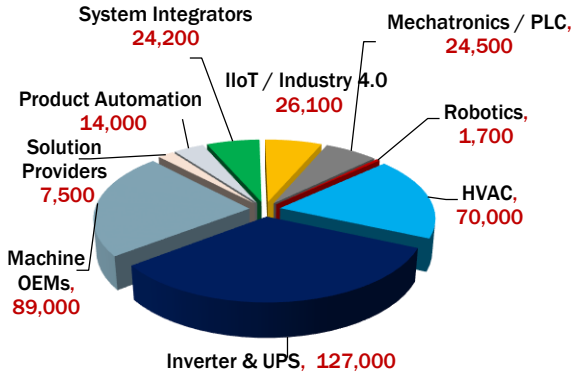
07 The employment estimates were also fine-tuned based on the current status and the expected future scenario in each of the segments

Employment scenario in Indian Industrial Automation industry

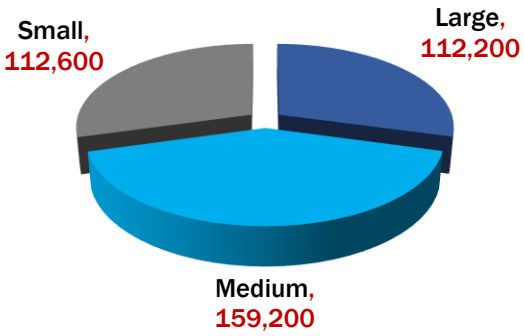
It is estimated that the industry currently employs around 384,000 people across departments, and across the organizational hierarchy in all the 4 product segments. A significant portion of the workforce (about 50 per cent) employed in these industries takes care of the service function, and about 42 per cent employed in the manufacturing function.

Under all the 4 segments, India has a strong manufacturing capacity which employs a large portion of the industry's workforce. The manufacturing business is augmented by a significant service sector, which not just provides maintenance services for the manufactured products, but also acts as system integrators which employ a significant number of employees.

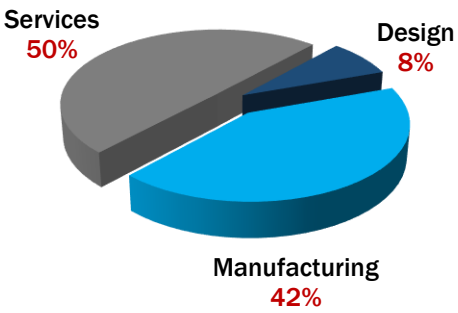
The EV and EV component segments of the industry employ the most number of people due to their manufacturing activities



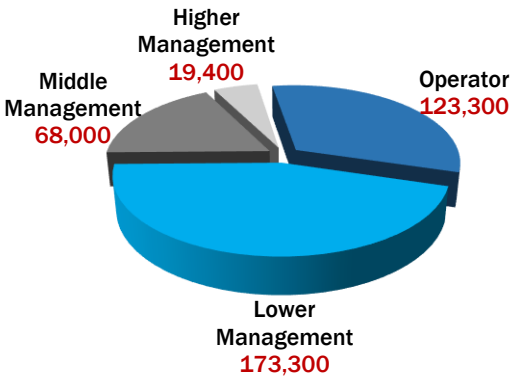
Large & medium scale companies together employ close to 80 per cent of the workforce employed in the industry



More than 85 per cent of the industry workforce is employed in the manufacturing and service functions



Close to 25 per cent of the employee base manages the work carried out by the operators & supervisory staff

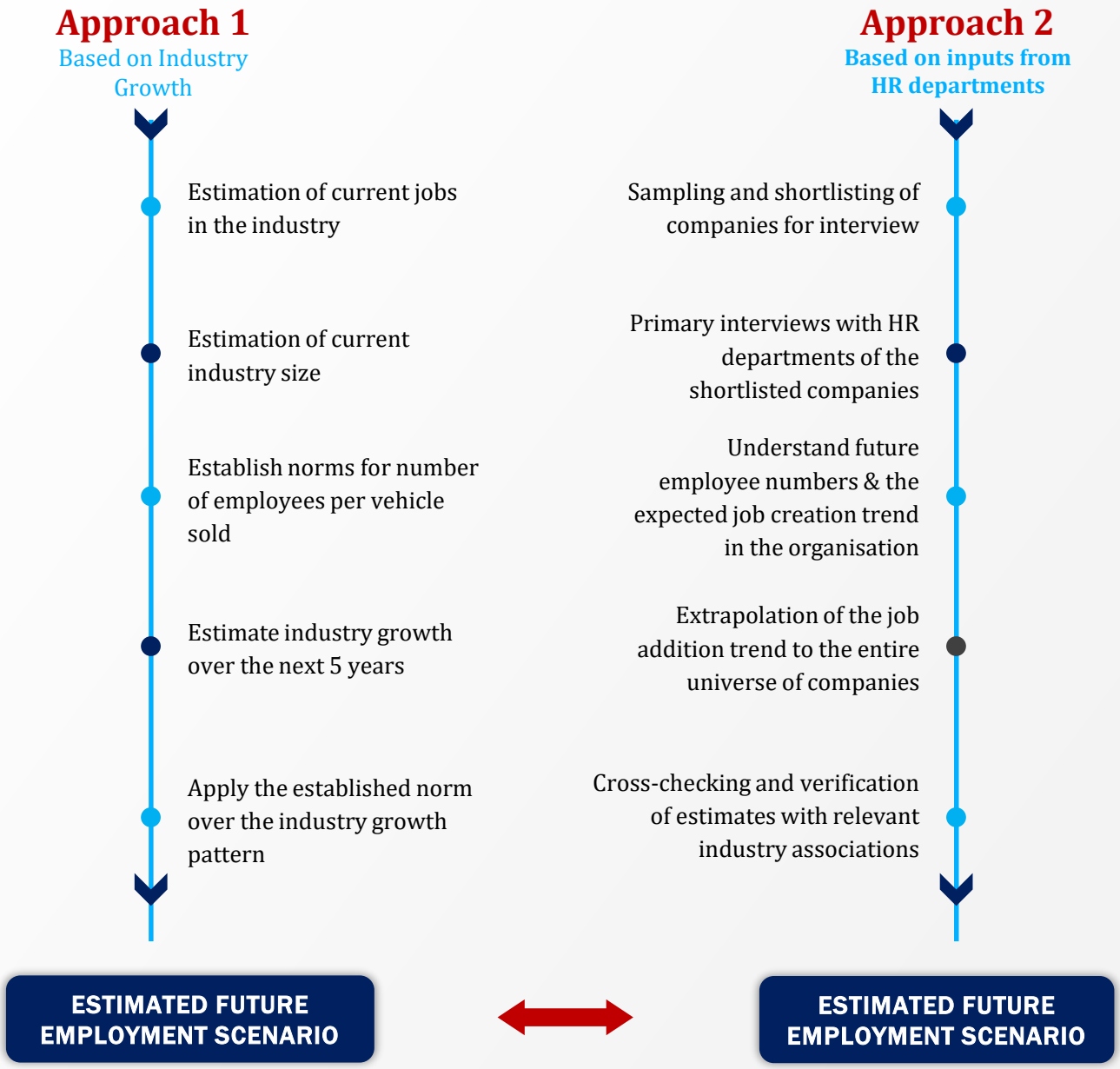


Approach to estimate future employment in Indian Industrial Automation industry

Potential employment generation estimates were arrived at through 2 parallel approaches.

The first approach used an industry norm (number of employees per INR crore of revenue) which is established separately for the three types of companies encountered – Large, medium and small. The norms were established using the employment data collected from a sample of companies from each of the segment. The norms are then superimposed onto the growth trend projected for the segment to arrive at a future estimate.

The second approach was based on linking the employment with the industry growth. For each industry a norm of employee vs output was derived and employment potential was estimated based on projected growth of the industry over next 5 years

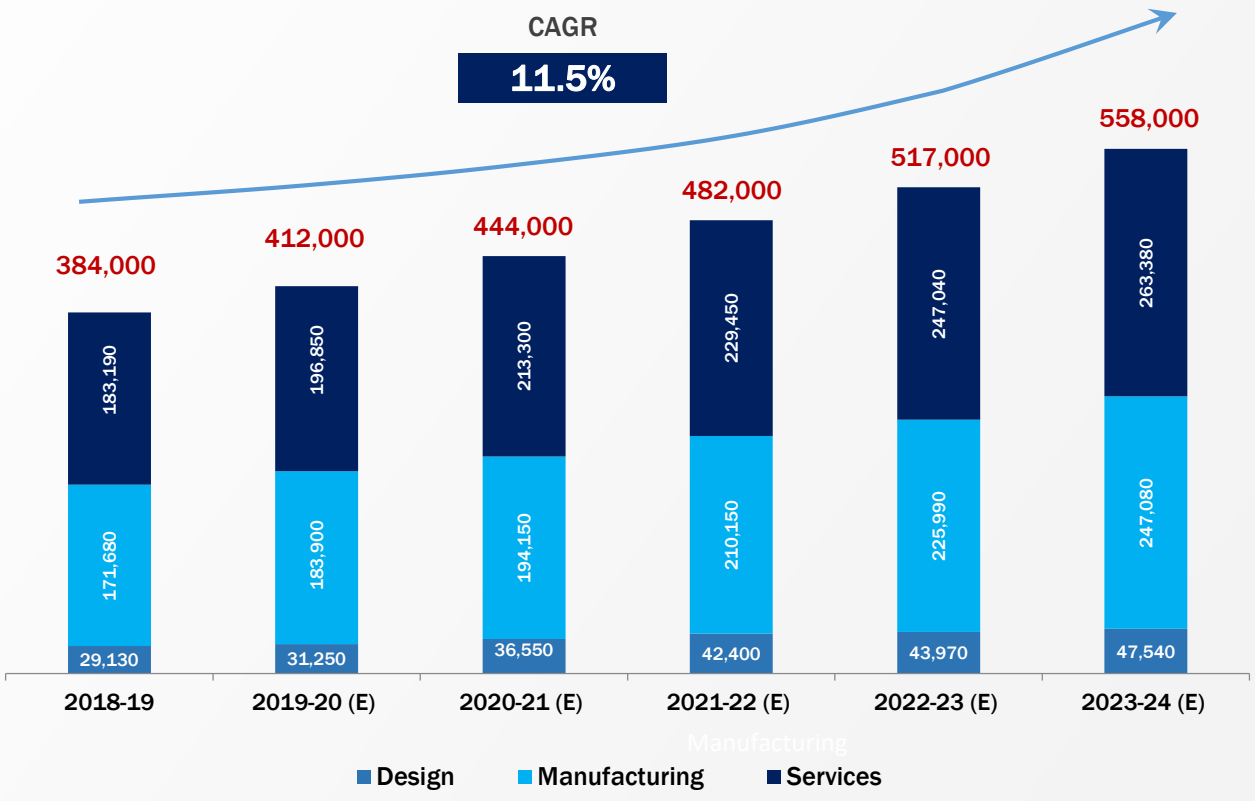


Future employment scenario in Indian Industrial Automation industry

It is estimated that approximately 174,000 additional jobs will be created in the industrial automation industry during the period between 2018-19 and 2023-24. The growth rate for the jobs in the industry is estimated to be around 7.8 per cent CAGR over this period.

Due to the well-established nature of the industry and its sub-segments, the growth across all the three functions – manufacturing, service and design are all moderate. One of the major factors driving growth in the Industrial Automation segment is the increasing efforts being made to make manufacturing processes through factory automation solutions to achieve higher efficiency along with lower reject rates. Under such conditions, adoption of Industry 4.0 technologies and Industrial Internet of Things (IIoT) would become imperative to increase competitiveness and build efficient value chains.

There is an increased focus on the manufacturing sector of India to build it into a global hub for manufacturing, design and innovation. Currently, Indian government is trying to create jobs and attract Foreign Direct Investment in India to compete with larger manufacturing hubs like China, Taiwan, South Korea and Japan



Future employment in sub-segments of Industrial Automation

Segment	Industry Structure	Industry Overview	Employment Scenario	
			Current	Future
Home Inverter & UPS	The Indian Home inverter and UPS industry consists of about 150 companies. These companies can be classified into 3 categories – 5 national players, 50 regional players and more than 100 local players.	Home inverter and UPS market is expected to grow from INR 11,450 crore in 2018-19 to reach about INR 16,000 crore by the year 2023-24.	The industry currently employs close to 1,27,000. The industry has a significant service infrastructure, which employs a large number of people.	The future estimate for employment in the sector is expected to be as follows: **2018-19: 1,27,000** **2019-20: 1,35,000** **2020-21: 1,45,000** **2021-22: 1,55,000** **2022-23: 1,63,000** **2023-24: 1,76,000**
HVAC Industry	The Indian HVAC industry has more than 100 companies. These companies can be classified into 3 categories – 6 large MNC players, 7-8 domestic players and more than 80 importers,	Indian HVAC market for the year 2018-19 is estimated at INR 27,900 Crore, which is expected to grow and pass INR 42,000 crore by 2023-24. The expected growth rate for the industry is pegged at 8.6 per cent.	The industry currently employs close to 70,000. A large part of this workforce is employed under the service function.	The future estimate for employment in the sector is expected to be as follows: **2018-19: 70,000** **2019-20: 75,000** **2020-21: 82,000** **2021-22: 90,000** **2022-23: 97,000** **2023-24: 1,05,000**
Machine OEMs	The Indian Machine tools industry has more than 400 companies. Nearly 200 manufacturers can be categorized as part of the organised sector, while the remaining are operating in the small ancillary sector.	It is estimated that, as of 2019, close to INR 16,250 crore of Indian machine tools industry. India stands 12th in production and 8th in the consumption of machine tools in the world.	The industry currently employs close to 89,000. Being a manufacturing industry, a large part of this workforce is employed in under the design and manufacturing functions.	The future estimate for employment in the sector is expected to be as follows: **2018-19: 89,000** **2019-20: 95,000** **2020-21: 1,00,000** **2021-22: 1,10,000** **2022-23: 1,10,000** **2023-24: 1,20,000**
Industrial Automation	The Indian industrial automation industry has about 250 companies. These companies can be categorised into three – 10 International players, 40 National players and more than 100 local players.	Automation market for the year 2018-19 has been estimated at INR 42,000 crore, which is expected to grow at about 12 per cent CAGR to reach INR 73,000 crore by 2023-34.	The industry currently employs close to 98,000 people in various functions & capacities.	The future estimate for employment in the sector is expected to be as follows: **2018-19: 98,000** **2019-20: 1,07,000** **2020-21: 1,17,000** **2021-22: 1,27,000** **2022-23: 1,37,000** **2023-24: 1,47,000**

Skilling requirement in Indian Industrial Automation industry

Qualification requirement

Level	Qualification	Skillset
Operator	• ITI / Diploma with 2-3 years of experience.	• ITI / Diploma in Electrical, Electronics or Mechanical Engineering. • Bachelors degree in Science, with 2-3 years of experience in a modern manufacturing plant.
Lower Management	• Bachelors in Engineering with 5 years of design experience. • Knowledge of various tools. • Masters in Engineering with specialization in Industrial Automation or Robotics.	• Bachelors degree in in Mechanical, Electrical or Electronics Engineering. • 2-3 years of experience in project handling, supply chain management, operations control & coordination.
Middle Management	• Any technical degree (Bachelors degree, Masters degree or Doctorate in Engineering) with at least 10-12 years of experience in an Industrial Automation company.	• Technical degree with more than 10 years of experience. • Exposure to all aspects of running production & assembly lines. • Masters degree in Engineering or Management is optional.
Higher Management	• Bachelors degree, Masters degree, Doctorate in Engineering. • Masters in Management with 15-20 years of experience in end-to-end R&D programmes in large corporate environment.	• Bachelors in Electronics or Computer Science Engineering with a Masters degree in Management. • More than 15 years of experience in a leadership role at plant-level operations.

Skilling requirement in Indian Industrial Automation industry

Skill requirement

Level	Qualification	Skillset
Operator	• Drawings of components, assembly of non-standard motors & other products in AutoCAD and NX • General assembly drawings (GAD). Preparation of technical documents.	• Facilitate assembly process and layouts. • Product validation & verification, reliability testing, ability to use various machines & hand tools. • Exposure to welding, casting, forging, heat treatment. Manual dexterity.
Lower Management	• Control systems design and process automation. • PLC & HMI Programming, embedded software. • Expertise in Six-Sigma, Kaizen, LabVIEW, MySQL & MS-SQL, C#, Python, Modbus TCP/IP, RS232 & RS485, Ethernet, Profinet & Profibus.	• Project budgeting. • Process instrumentation, PLC, SCADA and DCS. Digitalization. • Electrical instruments like drives, switchgears, instrumentation & control systems. • Retrofitting, upgradation of machines and assembly lines.
Middle Management	• Familiarity with PLC, SCADA and robotics. Advance programming in PLC, Ladder Logic Programming. • Design and programming of SPMs, competency enhancement of team members.	• Production management, supply chain and operations management, resource management. • Vendor development, cost optimisation, preparation of budget, EHS management. • Industry 4.0, IoT and smart factory, Lean Manufacturing.
Higher Management	• Knowledge of building & factory automation. • Fostering a culture of excellence and best practices in design. • End-to-end delivery of R&D programs, managing R&D using technical and management skills.	• Business P&L. Operational excellence, strategic planning. Continuous improvement strategies. • End-to-end value chain management, leadership & team development. • Industrial relations.

In summary

Electronic manufacturing in India and the current employment scenario

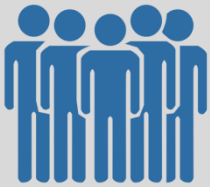
India is fast emerging as the manufacturing hub for electronics goods in the last 5 years. Presence of skilled and unskilled manpower at cost-effective salaries (as compared to global standards), greater emphasis on quality (as compared to China), presence of training institutes and colleges and the burgeoning middle-class which forms the bulk of the consumers, have all driven this trend.

The demand for electronic products in India is poised for significant growth in the next couple of years, driven by deeper penetration of digital platforms and technologies in Indian homes and industries..

India's economy is powered by sustained growth in consumer spending, fostered by moderate inflation, favourable demographics, and strengthening FDI. Even though China had been the preferred destination for investors for decades, India has pipped its neighbour in 2018 for the first time in the last 20 years in terms of FDI, changing the dynamics of the Asian market.

The new wave of manufacturing hubs in countries like India, Vietnam and Indonesia is largely due to one key factor viz., fast paced rising demand for Electronics in the domestic market.

Rise of manufacturing cost and wages in China has also proved to be a contributing factor. However, since most global firms are also looking to de-risk their investments from China, countries like India have gained as the emerging markets.



Current employment in the six segments

10,10,000