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By ✱ PeopleStrong

PRESENTS

DECODING JOBS 2019

SECTORAL DOSSIER
ENGINEERING
AND MANUFACTURING

IN COLLABORATION WITH

Wheebox
Measuring World's Talent





INTRODUCTION

The Engineering, Manufacturing and Infrastructure sectors are of strategic importance to India's economy. Not only are Indian enterprises contributing significantly to exports, they are also one of the largest sectors responsible for job creation in India.

In 2018-19, the manufacturing sector alone grew at 6.9% contributing 16 to 17% of the country's GDP with Gross Value Add (GVA) of USD 395 billion. This GDP share, however, has been stagnant at these levels for the last few years. The Government is trying to raise its contribution to the GDP to 25% and create 100 million new jobs by 2022 in the sector. Policy interventions like "Make in India", "Start Up India" and MUDRA Programs have already put in place to achieve this vision and put India on the world map as a manufacturing hub of choice.

CURRENT SHARE OF THE MANUFACTURING SECTOR IN GDP

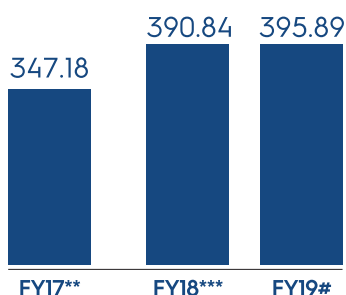
16-17%

ESTIMATED SHARE OF THE MANUFACTURING SECTOR BY 2020 IN GDP

25%

THE GOVERNMENT'S TARGET IS TO CREATE 100 MILLION JOBS IN MANUFACTURING SECTOR BY 2022

Manufacturing Sector GVA at Basic Price at Current Prices (in US\$ bn)



Second revised estimates *First revised estimates #First Advance Estimates

The Indian Engineering sector's two major segments - heavy engineering and light engineering, together combined, had a turnover of USD 70 billion in 2017 and is expected to grow to USD 115.17 billion by 2025. Within the sector, segments like infrastructure, power, mining, oil and gas, refinery, steel, automotive, and consumer durables has been driving demand. Various factors are enabling this buoyancy: Creation of Special Economic Zones (SEZs) across the country, improved FDI norms - 100 per cent Foreign Direct Investment allowed through automatic route and policy initiatives like "Make in India".

DIGITAL DISRUPTION IN ACTION: INDUSTRY 4.0 - MAKING INDIA A SMART AND INTELLIGENT MANUFACTURING HUB

While every company and organization operating today is different, they all face a common challenge —the need for being connected all the time and access to real-time insights across processes, partners, products, and people. To address this challenge, the Department of Heavy Industry, Government of India (under its scheme on Enhancement of Competitiveness in the Indian Capital Goods Sector) has launched an Industry 4.0 initiative called "SAMARTH" - Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH) - Udyog Bharat 4.0 .

GOVERNMENT INITIATIVES

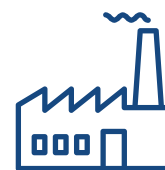


MAKE IN INDIA



Skill India
कौशल भारत - कुशल भारत

SKILL INDIA



NATIONAL MANUFACTURING POLICY

With SAMARTH, the Indian Engineering and Manufacturing sectors will focus heavily on interconnectivity, automation, machine learning, and real-time data. As India ushers into the fourth Industrial Revolution a.k.a Industry 4.0, technologies like Industrial Internet of Things (IIoT) and smart manufacturing will marry physical production and operations with smart digital technology, machine learning and big data to create a more holistic and better connected ecosystem for companies that focus on manufacturing and supply chain management.

TECHNOLOGY TO REDEFINE ROLES, IS TALENT READY?

With the shift in manufacturing and engineering activities from electrified to automated and now digitized, new skills around big data analytics, cyber security, robotics, IoT, 3D Printing, mechatronics, AR and blockchain will be in utmost demand among employers. Manufacturing giants are focusing on increasing automation and connectedness on shop floors, using virtual reality for improved safety and reliability on sites and learning 3D printing techniques to find new applications in manufacturing.

NEW AGE SKILLS IN FOCUS



Big Data Analytics



Cyber Security



Robotics



Industrial Internet of Things



3D Printing



Mechatronics



Augmented Reality



Blockchain

In near future, generic skills such as cognitive ability, integrated thinking, critical thinking, emotional intelligence and empathy, management and leadership, relationship building and collaboration, cognitive flexibility, creativity and social intelligence will also be required over and above technical skills.

However, upskilling and talent readiness for future way of working is not keeping pace with the developments taking place in the industry. Outdated curriculum of our universities offering UG courses, institutes like ITIs and others offering vocational courses and their poor infrastructure is impacting availability of “right skilled” talent.

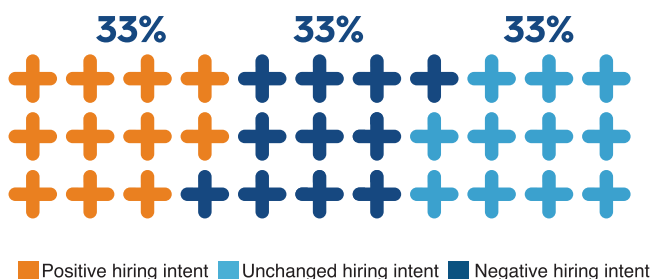
Archaic labor laws are forcing companies to hire casual workers (low on wages and skills) which though significantly lowers the cost of hiring, have indirect effect on the productivity and human capital in long run.



MANUFACTURING AND ENGINEERING HIRING INTENT & TRENDS 2020



The hiring intent survey of the India Skills Report 2020 was taken by over 150 employers, out of which 11% constituted leaders from the Manufacturing, Engineering and Infrastructure industry. Overall, we see a mixed sentiment in the hiring outlook for 2020, with 66% of the respondents not intending to increase their hiring next year or expressed a negative picture of hiring.



33% of employers expressed a positive hiring intent for 2020

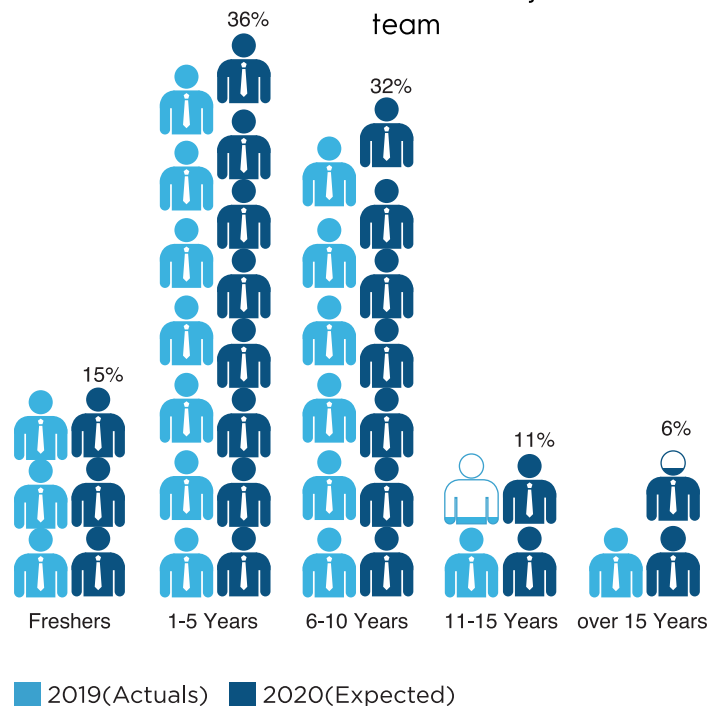
HIRING INTENT BY WORK EXPERIENCE

Around 36% of the respondents said that they would like to hire people with experience of 1 to 5 years. Hiring intent for people with work experience of 6 to 10 years (mid-management level) is on similar lines, with 32% respondents expressing a positive intent. The survey revealed that focus on Campus / Freshers is on the upswing, with 15% of total 2020 hiring expected to be from ITIs and alike, UG and PG campuses. Within this, we believe there is a more than 80% trend to hire UGs

Maximum hiring in Manufacturing and Engineering to be done for talent with 1 to 5 years' experience

15%

say they would like Freshers to join their team



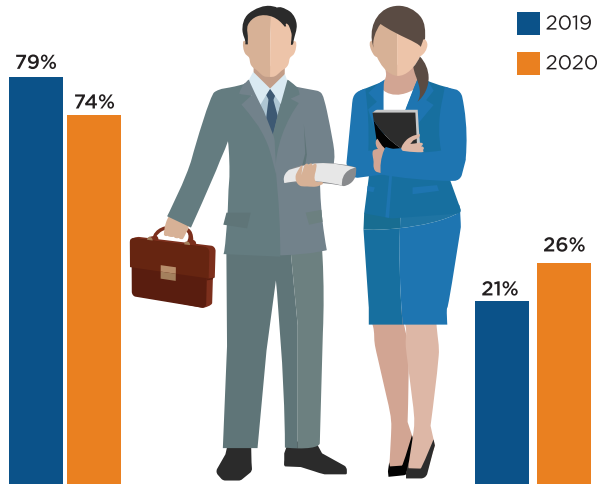
HIRING INTENT BY GENDER DIVERSITY

Manufacturing, Engineering and Infrastructure industry has always had a male dominated workforce. One of the major reasons for this has been the manual and strenuous nature of work in this sector in the past. However, with the focus of the industry shifting to automation on the shop floor, the perspective around hiring of women is also changing. Though gender parity between male and female employee hiring is expected to be 74:26 in 2020, this number is 5% up from 21% female hiring in 2019, which is encouraging. Overall, there is high focus on Gender Diversity agenda on the shop floor as well as in design, R & D centers, sales and support roles.



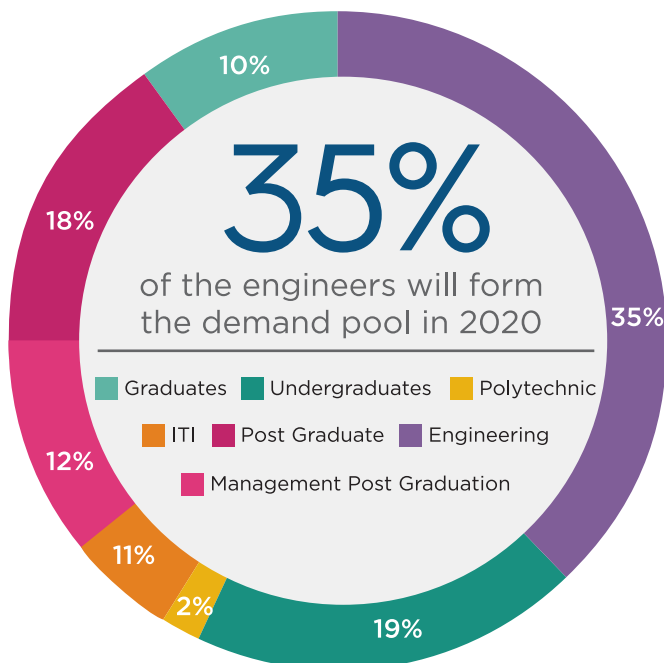
Gender parity remains a big concern at

74:26
(M:F ratio)



HIRING INTENT BY EDUCATION DOMAIN

With employers in the sector focusing on new technologies like Robotics, Mechatronics, 3D Printing, Data analytics, the demand for Engineers is expected to be much higher as compared to other education domains. As per the trends, Engineers will form more than 35% of the demand pool in 2020. Post-Graduates are expected to form around 30% of the demand pool of which Management post graduates will constitute around 12% demand.



HIRING INTENT BY SKILLS

Domain expertise and a positive attitude continue to be the top of the order skills in order of priority for hiring leaders in the manufacturing, engineering and infrastructure space. HR leaders also look for learning agility in their prospective employees as they believe that a shift from the current work environment to an Industry 4.0 workspace will require a shift in mindset too. Employees will be required to have capability to unlearn and relearn to excel in future. As the level of connectedness increases between players in the sector, we will also see a high focus on ability to work with cross-functional and cross geographical teams.

Leaders mentioned top

6 SKILLS

and Behaviors in Engineering and manufacturing sector, which include:



Domain Expertise



Positive attitude



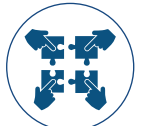
Adaptability



Learning agility



Interpersonal skills



Collaboration and teamwork

HIRING INTENT BY JOBS

Industry will see a strong move towards "Talent Future Proofing" - being ready with talent for the future way of working like Connected Technologies, IoT, Hybrid Fuels, Infotainment, Robotics etc. Manufacturing - Engineering will not operate in silos and the way of working will be significantly disrupted by technology. Talent will need to be adept at both traditional skills as well as future ways of Tech and Software enabled working. A critical challenge in the future will be the sector's ability to attract top notch Technology / Software talent. Boundaries are blurring between Core Manufacturing, Design and Technology / Software skills needed in potential hires and it would be interesting to see how Engineering organizations attract and retain top notch Tech - Software talent.

UPCOMING JOB AREAS IN NEXT 5 YEARS



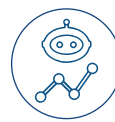
Human Centered Design



Soft Skills



Data Analyst and Scientist

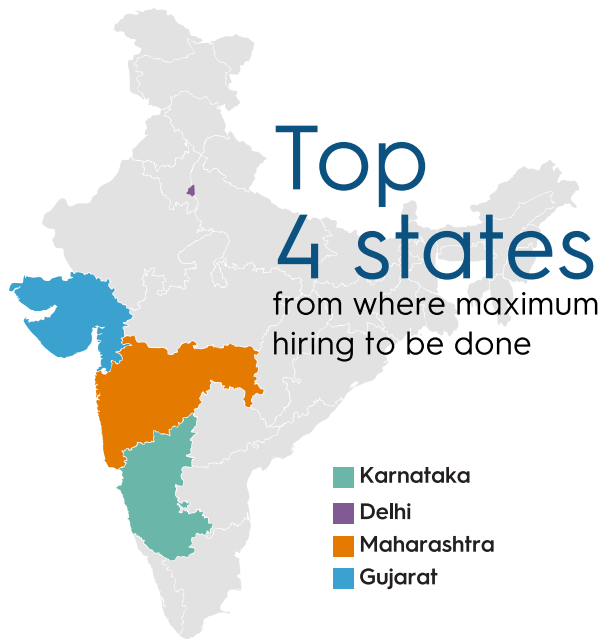


Robotic Process Automation (RPA)



Compliance

HIRING INTENT BY GEOGRAPHY



With most Manufacturing and industrial equipment plants located in Karnataka, Delhi and Maharashtra, most of the employers focus on hiring most job seekers from these states only. Gujarat is the fourth most preferred state for employers to seek potentially hireable talent.

GIG-WORKFORCE

Business and HR leaders in the Manufacturing and Engineering industry have also started experimenting with "Gig" or project based and fixed term contract workforce. The sector which was earlier employing Gig and Project based talent at junior level manufacturing / shop floor roles, is now experimenting with these in "core" functions like sales, marketing etc. We expect this trend to strengthen.

LESS THAN
5% ARE GIG-WORKERS IN THE MANUFACTURING & ENGINEERING INDUSTRY

Hiring Intent by Sourcing Channel

Internal Employee Referral and Full Scale RPOs (Recruitment Process Outsourcing) will constitute 40 to 50% each of hiring sources, while campus will contribute by 10 to 20% of the hiring pie.

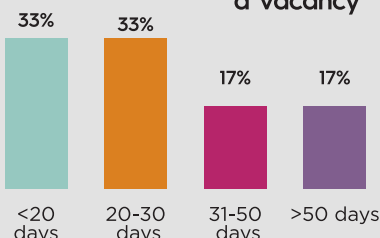


SOME KEY HIRING METRICS OBSERVED IN INDIA'S ENGINEERING AND MANUFACTURING SECTOR

TIME-TO-FILL VACANCY

Industry trends show that Junior and Middle management jobs are filled in 30 to 40 days, while senior leadership positions take a little over 50 days to fill, so far as Manufacturing - Design - R & D roles are concerned. Sales roles are being filled faster at the junior - middle level, trending at 20 to 30 days and senior roles at a little over 40 days. There is a huge focus on talent pipelining for sales roles and high business ask of Talent on Demand (ToD).

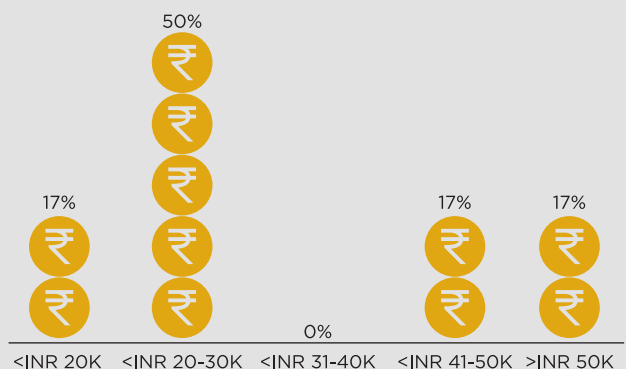
66% of recruiters in Manufacturing and Engineering industry take less than 30 days to fill a vacancy



67%
manufacturing and Engineering corporates feel "some" job seekers meet their skill requirement



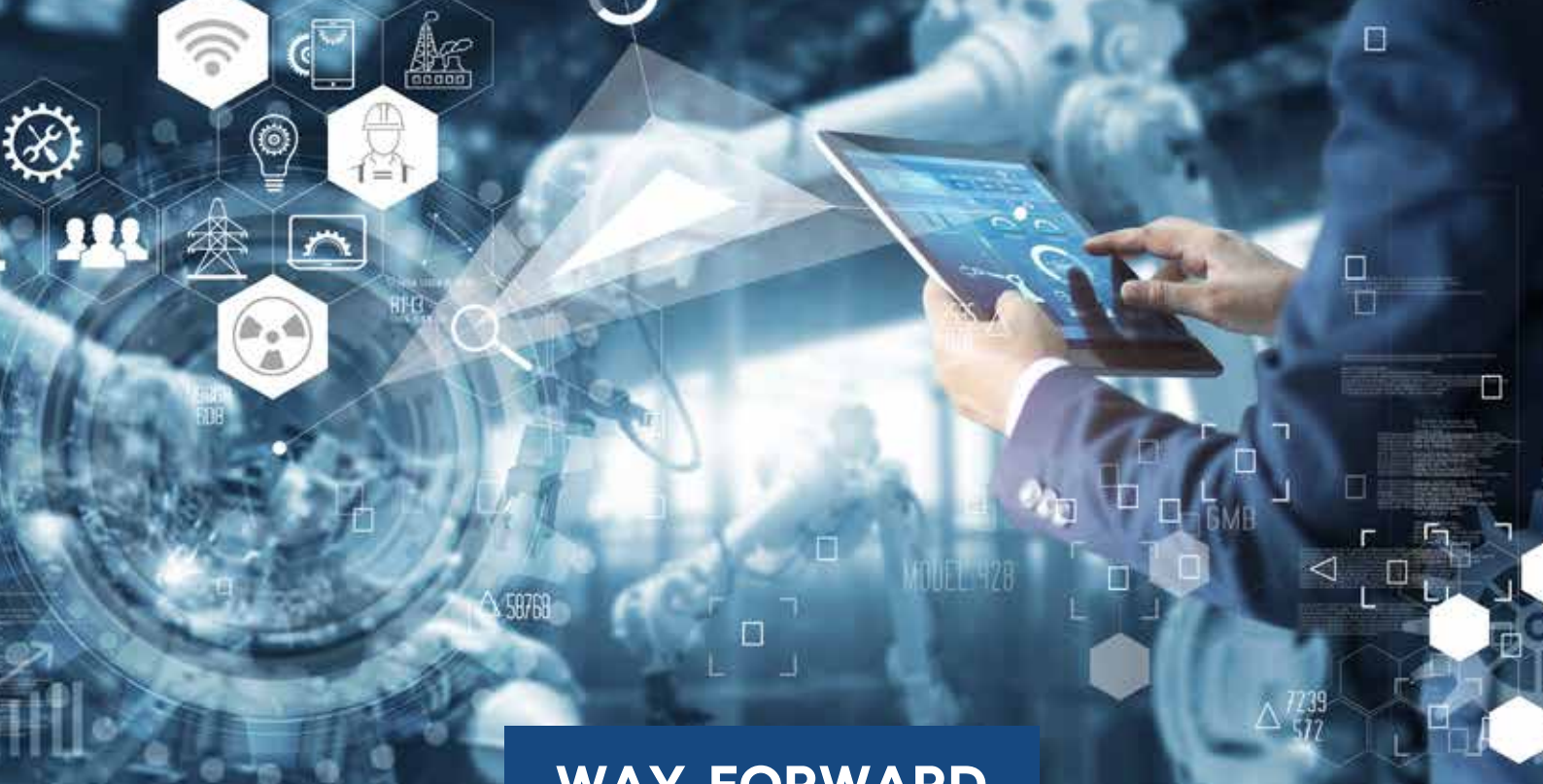
Average cost of hiring may vary from 15 to 20K for junior roles and 30 to 35 K for middle management roles.



The Average Attrition Rate observed across the Manufacturing & Engineering Industry is at **12-15%**

Commercial functions are expected to experience higher than average attrition, while "shop floor" functions - Production, Maintenance, Design, R & D etc. will experience single digit manpower churn.

The "hiring type" of the sector is changing significantly with Tech- Software workers being hired at much higher numbers than earlier. The industry will have to keep an eye on how to retain this new talent genre.



WAY FORWARD

For an industry that employs more than 30 million people in both organized and unorganized sector, it becomes very difficult, yet important to keep the workforce knowledgeable and skilled. In an endeavour to skill the workforce, the government, industry and academia have an equal role to play.



FOCUS ON SKILLING LABOR POOLS

The manufacturing industry can take collective and individual actions to grow a skilled labor pool. The industry can establish and support vocational training institutes for developing skilled labor pools around key manufacturing clusters. The Industry - Academia - Government partnership will be crucial to set up and deliver such large-scale skilling - upskilling programs.



FUTURE READINESS: TALENT FUTURE PROOFING

This industry will need significantly different talent to meet its future needs and embrace Industry 4.0. Industry patrons should work together to "brand" the sector to be able to attract and retain high quality Tech- Software talent.



WOMEN PARTICIPATION A MUST HAVE

As evident in the industry and in our Hiring Intent survey, it is observed that women participation is quite low as the industry is largely male dominated. The inclusion of women is of utmost importance for the development of the industry and nation. The government and industry need to bring forth measures and policies to make the work environment conducive for the women employees. The initiatives like security of women at work, subsidiary or similar measures for facilities like creches, play schools for working women with children, salary equality and recognition at work can be thought upon.

“The transition from a Sellers’ market to a Consumer centric market drew sharp focus of industry on the need to build a flexible and efficient supply chain for timely delivery of quality products and product variants. The importance of providing the customer with a high-quality service experience got recognized as a major differentiator for market growth and sustenance.

As manual interventions for strengthening the supply chain had limited impact, it became imperative to introduce new age technologies such as digitalization, AI, Machine Learning, Robotics, VR & AR, for adding value to different segments of the supply chain.

Large OEMs in the automotive space, particularly those having a close interface with global companies, have gradually enhanced the level of automation on the shop floor and adopted new age technologies like digitalization, machine learning, data analytics and even robotics in their workspace. Scores of smaller partners including vendors and dealers/retailers attached to these organizations have also had to make a headway in digitalization. A few MNC’s have recently set up R&D facilities with advanced new age technologies in India, to cater to larger global markets.

While the gradual increase in the application of new age technologies in the automotive industry is creating new avenues for employment, it is also posing a huge challenge. Industry is already grappling with the deficit in basic technical and functional skills. Unfortunately, ITI’s and the innumerable technical and management institutes that have mushroomed have not contributed to the pool of skilled manpower. Instead, they have only added to the number of unemployable youths in the country. Garnering higher level of skills for application of new age technologies in this scenario is going to require a lot of lateral thinking and strategizing.

It has become increasingly important for the industry to play a pro-active role in the eco-system by closely collaborating with government regulators of training and education and government and private vocational and academic institutions by sharing information on current skill deficit and future skills, participating in designing the curriculum, providing internship opportunity and overall supporting them to become a potential source for employable manpower.

As a parallel initiative, there is a growing trend to invest in in-house training facilities to meet the requirement of quality technical and non-technical skills and also skills for application of new age technology which in addition also creates a requirement for re-skilling for new roles caused by redundancy of certain jobs.

Interestingly, today there are a handful of new start-ups which engage in the business of upgrading skills for application of new age technologies. They are guaranteeing higher employability and compensation by linking their fees to the same. This could well emerge as another source for training and lateral hiring.

In the quest for acquiring the right skills, there are additional alternate sources to choose from, such as the apprenticeship route to hire potential talent, the pool of employable millennials who choose not to work from office, the gig workers, consultants for project based assignments, outsourcing routine jobs and providing tapping the employable female workforce.

One can expect the strategy for meeting skill requirements to increasingly assume centre stage in the overall business strategy of automotive industry. ”

AmarDeepika Kashyap, President – Group HR, Ashok Piramal Group



“The construction industry would see a huge requirement of skilled blue-collar workers to enhance quality and productivity. IOT engineers and data scientists would need to work on smart cities. Engineers would need to be well versed with techno-commercial knowledge and skilled in latest construction technologies.

There is an urgent need for the academia and the industry to collaborate to co-create course content and make the shift from being faculty-focused to learner-centric. Our Government must create a nodal agency to facilitate collaboration between industry and academia. Industry needs to be incentivized to run training cum internship programs for blue collar workers and engineers. The Government and the corporate world need to co-invest in creating Centre of Excellence in future skills in Universities/Engineering colleges. ”

Rashmi Mansharamani, Chief Human Resources Officer, The Wave Group





“The Engineering Sector will continue to make valuable contributions to India’s growth story. Heavy government spend on Infrastructure & initiatives like “Make in India” will ensure this sector remains at the forefront of India’s \$5 trillion goal dream. Honeywell, a fortune 100 Engineering- Software organization is proud to be the leader in this sector in India, partnering with Industry and Indian consumers for best in class Engg-Tech solution & products.

India is a High Growth Region for Honeywell & we will make significant investments to fuel the India Growth story. We have been hiring large numbers of Engineering & Technology professionals & plan to hire even higher numbers in 2020. To sustain this growth, we will leverage on The Honeywell India Campus & Off Campus Programs along with laterals, hiring best in class Software & Engineering Professionals. Embedded, in our story, will be high investments on technology driven growth, cutting edge innovations & disproportionate focus on Gender Diversity and Inclusion.”

Rachna Parashar, Country HR Leader, Honeywell India



“Customer expectations on the ‘experience’ and ‘uptime’ are driving companies to prepare teams for gaining competitive advantage. The changing environment is impacting the interplay of disciplines and the interdisciplinary approach in products and services necessitates ‘lifelong learning’. Also, the subtle shift due to Digital is driving the need for ‘re’ and ‘up’ skilling. ‘Learning how to learn’ in these times is already a key skill.”

Shubha Arora, Chief People Officer - India, South Asia & HR Director - Middle East, Schindler India Private Limited



“With the very aggressive vision of making India a \$5 trillion economy and global economic powerhouse by 2024-25, it is imperative that our talent market also makes great strides in this path. The Future of Jobs in India will be determined by the 3 factors of Globalization, Demographic changes and adoption of Industry 4.0 technologies. The workforce mix of 2022 (IT Industry) is predicted to be:

- 10-20% deployed to new jobs that are not existing today
- 60-65% would be deployed to changed skill sets and
- 20-35% will face an existential threat to their jobs.

Keeping abreast of latest technologies and making reskilling, upskilling a long-term strategy, not just short term is seen as one of the major challenges. Academia has to curate courses that are in sync with the changing times. Emphasis is on soft skills and not just limited to hard or technical skills. Individuals / students must develop a habit of life-long learning. It is no longer the time of Study – Work – Retire, but Study – Work – Relearn – Reskill.”

Sriram T V, Vice President – Human Resources, Robert Bosch Engineering and Business Solutions



“The International Property Consultants services sector in India continues to provide valuable contributions to the country’s growth story. JLL India, as the sector leader, continues with its focus being a significant part of the story. We have been ramping up hiring for the past two years and are expecting to hire even higher numbers in 2020. To sustain our growth, we will leverage the “JLL India Under-grad & PG Campus Programs” as well as “Project Unnati”, which is our flagship program in partnership with the National Skill Development Corporation. Embedded also, in our growth story, is our deep focus on Gender Diversity and Inclusion.”

Tanvi Choksi, HR Head and Director, JLL India

ABOUT TEAM



By  PeopleStrong

Taggd, a PeopleStrong recruitment solutions brand, is the largest Recruitment Process Outsourcing (RPO) provider from India with 100+ clients across 14+ sectors and is managing permanent recruitment for over half a million jobs. It combines the power of data and human knowledge to bring advanced talent acquisition and digital hiring solutions that change how businesses work and deliver. Over the last 13 years, Taggd has developed a deep industry understanding, digital recruitment expertise, talent network access, data intelligence and access to a robust tech stack to deliver business gains. Some of the leading enterprise customers of Taggd include Pfizer, Wipro, Honeywell, Mahindra, BirlaSoft, Tata Motors, Renault Nissan, Aditya Birla Health Insurance, Citi, IndiaMART, Swiggy, Oyo and Quikr, amongst other national and multinational brands. Nelson Hall, one of the leading global analyst firms, has rated Taggd amongst leaders in the RPO NEAT Matrix.

Taggd is the knowledge partner for the India Skills Report and conducts the "India Hiring Intent Survey (IHIS)" and the "Decoding Jobs : The Think Tank Series" across all major metros to take quantitative and qualitative insights from the academia and industry thought leaders on their views on the talent demand side.



Wheebox is India's leading online talent assessment company that partners with corporations for finding and retaining the best talent using validated, reliable and standardized tests for pre-hiring and learning needs. Wheebox benchmarks over 3 million users annually across the globe. In line with its vision to "Measure the World's Talent", Wheebox partners with many Fortune 500 corporations and hundreds of large and medium enterprises to power their hiring and competency development assessment needs. Wheebox also partners with thousands of higher and vocational educational institutions for conducting its proprietary "Wheebox National Employability Test (WNET)" for final year graduates and postgraduates to benchmark competencies that matter the most for being employable in corporations. Wheebox also powers the "India Skills Report" on the skill supply side and complements thousands of colleges across all Indian states and UTs to identify, benchmark and spot areas of competencies. It supplements institution wide candidate reports for developing competencies for employment by partnering with Confederation of Indian Industry, PeopleStrong, LinkedIn, Association of Indian Universities, United Nations Development Program and All India Council for Technical Education. Wheebox also partners with many Indian states to design and deploy State Skills Reports and with the Ministry of Labour and Employment with its proprietary BARO Career Interest Report by helping candidates make right career choices on the 'National Career Service' and across 'Model Career Centers' in India.



Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes. CII is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has more than 9100 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from 291 national and regional sectoral industry bodies.

CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues. Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, healthcare, education, livelihood, diversity management, skill development, empowerment of women, and water, to name a few.

India is now set to become a US\$ 5 trillion economy in the next five years and Indian industry will remain the principal growth engine for achieving this target. With the theme for 2019-20 as 'Competitiveness of India Inc - India@75: Forging Ahead', CII will focus on five priority areas which would enable the country to stay on a solid growth track. These are - employment generation, rural-urban connect, energy security, environmental sustainability and governance. With 68 offices, including 9 Centres of Excellence, in India, and 11 overseas offices in Australia, China, Egypt, France, Germany, Indonesia, Singapore, South Africa, UAE, UK, and USA, as well as institutional partnerships with 394 counterpart organizations in 133 countries, CII serves as a reference point for Indian industry and the international business community.



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