

Smart Factories and future of robotics



Technology has always disrupted manufacturing, the first industrial revolution driven by steam engine led to the development of large factories symbolized by textile mills. Henry Ford, inspired by Mutton Shops, brought in Assembly line (Immortalized by Charlie Chaplin in Modern Times). In the 1970s, Computer automated manufacturing and provided scales and volumes never seen before. Now, in 2016 we are at the cusp of another industrial revolution which the experts are calling “Industry 4.0”. It consists of cybernetic systems incorporating Internet Of Things, Augmented Reality, Big Data, 3-D Printing, Simulation and Robotics and is powered by Cloud computing. This revolution will convert the “Static Factories” into “Dynamic” and “Smart” factories driving productivity, enhancing efficiency and will ultimately alter the makeup of the workforce forever. The impact of these technologies on workplace, job and on employees will be profound and it becomes imperative for us to understand this change in manufacturing and its subsequent impact on talent management and engagement.

1. Industrial Relations: HR Professionals take a lot of pride in managing the Industrial Relations and the “Norm Based Settlement” with the union is the flagship product of the harmonious Industrial Relations. With the “Smart factories”, many manual jobs at the shop floor level on production line will cease to exist in

the way we know them today. An operator will not be restricted to managing only a production line or process but equipped with IoT, Data Analysis and cobots, will actually manage the entire shift or floor, this will result in meaningful and engaging job for the operator, which will enhance his employability as well. This in-turn will encourage flexibility in timings, rationing of manpower, redundancy of supervisory roles eventually leading to self-managed teams across factories. The workforce in manufacturing will resemble to that of IT companies with more focus on jobs related to Data Analytics. In such a scenario unions will have to reinvent themselves to remain meaningful. Traditional system of norm based settlement determining productivity and wages does not have a bright future and would have to be replaced by an individualistic and dynamic wage determination model that might not incorporate productivity as production will depend much more on technology than humans.

2.Manpower Planning: The method of recruitment has primarily been interviews with different formats such as stress interviews, behavioral event interviews etc. Interviews typically score high on inherent biases, clubbed with inflated resumes, the reliability of the process is always questionable. This is poised for a change as Real-Time simulation created by data points from the resume and past experience of the candidate will replace the interviews. The dexterity and ability to decode dynamic instructions for completion of tasks shall be judged more reliably through Augmented Reality. These tools will be more reliable and suited to quick sourcing of candidate. Companies are already making use of these technologies to induct the employee and make his on-boarding a smooth experience.

Till now organizations have been following the approach of building detailed structured Job Descriptions and Work Instruction for the employees to follow. With technologies such as augmented reality and IoT, experts sitting at remote locations would be able to guide production & maintenance professionals at different sites. Instead of hiring full-time employees, organizations would look to hire experts exclusively for particular projects. These experts will guide the resources deployed at the factories through Augmented Reality, as compared to the frequent visits that they have to make to the sites to solve problems, this will improve the efficiency by leaps and bounds. The resources to be deployed at factories would need to display high learning ability to decode dynamic instructions, as he would communicate with different experts to solve a wide range of problems on host of diverse technologies. Along with Monster & Naukri, platforms which provide lifetime employments, platforms such as Amazon's Mturk (Gives IT Projects today) will come into vogue for manufacturing as well. In India, start-ups such as "Flexing-It" are already providing professionals to corporate for particular projects, with Industry 4.0 in sight, they will play a key role in helping companies manage talent. HR will play a key role in designing the projects and deciding which jobs are to be sourced out and which jobs need permanent deployment in organization. The jobs of production and maintenance which would require only operational expertise of these technologies could be provided on a permanent basis and the experts would be required only for implementing and designing a project. This will require a thorough understanding of Industry 4.0 technology and will drive competitive advantage for organizations. To manage such a diverse workforce will require a different approach which we shall discuss later in "Talent Engagement".

3.Learning & Development: Presently, due to large number of employees and nature of production process in factories, training programs are typically organized in lean months and one size fits all training modules are generally delivered, either through classroom sessions or through regular e-learning modules. Organizations spend a lot of time in justifying the impact of these training and since the impact of these sessions is not tangible, line managers seldom take interest in these training sessions. Industry 4.0 shall

overhaul the entire Talent Development methodology. Training need identification shall again be driven by data obtained from the operations and through augmented reality and simulations training shall be decentralized and customized according to individual needs. Since the data before and after training shall be available, impact of training could easily be quantified.

Decentralized Blended Learning i.e. training each individual according to his/her own need, time and place shall be the path forward. With high focus on learning ability and dexterity, organizations which will have a dynamic Learning & Development program shall conquer the problem of attrition as they would have tools that will make person dependency in future extinct. This will have a big impact on compensation strategy of the organization, as they would not need to disturb the internal parity by accommodating outliers because of their skills.

4. Talent Engagement: As is evident, many tasks of HR professionals in factories which take up a lot of time like settlement negotiations, training administration, recruitment shall change and as such this will require the HR professionals to tweak their priorities and adjust their skills. The future professionals shall have to be a mix of geek and people manager. Apart from HR analytics which will give decision points, HR Managers shall have a lot of time to engage employees. People connect shall be very important and the conventional wisdom of “Meaningful Conversations” shall be very critical. Especially with a large diverse workforce that would be working on key projects but would not be “Employees” in the traditional sense, conversations and connect shall become extremely important. Through these conversations HR professionals shall have to ensure that they maintain their people connect and address the grievance of employees (in all forms) and get to know the employees as individuals. The ability to have these meaningful conversations shall be an important criteria on which the performance of HR will be judged. With high quality jobs and ample time at their disposal, employees shall become more vocal and expressive, HR shall have to offer different creative avenues for employees to channel their energy. More creative ideas to engage employees shall surface in the factories as was the case in Silicon Valley companies two decades back, which changed the game of engagement.

Many experts have termed the growth that will be driven by Industry 4.0 as “Jobless Growth”. It is not going to be the case, with more technology, the manual meaningless jobs shall cease to exist and high-end engaging jobs shall be created in the manufacturing sector. In last 30 years, organizations have incorporated practices such as Overtime, Use of Apprentices & Contract Workmen for regular jobs and many more such “Innovations” to drive up efficiency, this has created what government calls “Bad Jobs” without any future and security. With the advent of industry 4.0 resulting in traditional jobs becoming redundant, organizations shall have the opportunity to reinvent themselves to add value to the jobs in the factories in this era. Building on the conventional wisdom of Trust and Fairness, employers shall need to harness the technology to create a vibrant workplace and an innovative workforce.