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Rush To Industry 4.0 Or **Lose Market Race**

Evolution in industry been characterised and driven by innovative changes with perpetual continuity in improvement and efficiency. ERP replaced manual working and led to optimal utilisation of resources.

OEMs have shifted from Make-to-Buy to focus on quality deliverables due to vast product variants offered to customers and swift adaptability to changing market scenario. Therefore, there was a need for transparency, visibility and reliability of supply chain.

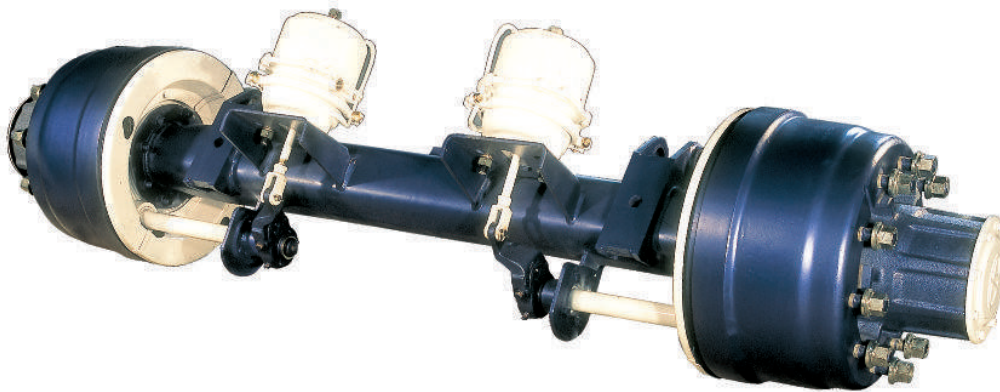
Industry 4.0, or Fourth Industrial Revolution, a new wave of revolution addresses the complexity of supply chain, fosters challenges and changes. While historically innovation brought by steam power, electricity and digital machinery were all based solely on new technologies, Industry 4.0 is different. It focuses on use of innovation in new and existing tools. Industry 4.0 is Innovation with a difference and Artificial Intelligence (AI).

Industry 4.0 is already witnessing the robots and humans working together, while on-line feed to production lines is taken over by autonomous vehicles. Cloud Computing has connected designers to factory employees through

sensor networks; communication technologies and software interact autonomously besides facilities connected in real time to suppliers and customers.

It has opened vast potential to industry in speed and quality of deliverables with the utilisation of smart technologies where instant feedback of costs, accurate prediction of performance, machines and logistics speak with each other to give the factory process the desired results. It has made manufacturing operations more flexible. It improves productivity and facilitate new, more efficient business practices and entrepreneurial approaches.

AI from Cloud makes analysis and comparison with parts and processes for optimal performance and e-systems enable robots to learn and operate with minimal input without human intervention. AI will boost e-factory administration, smart and precision efficiency, the down-time of machinery to a negligible level with warning systems from Cloud for predictive maintenance measures before break-down, thus saving time, money and bottlenecks in production. The challenge will be that industries will have to move



faster to adopt Industry 4.0 version as otherwise we will be derailed in the race. Obviously, this will entail investment in smart technologies through balanced fiscal play of internal accruals and external funding vis-à-vis revenues and collaborating in acquisition of know-how. The main thrust will be to accept and embrace the bare truth that we have to operate in a smart environment and be prepared to try new things. The going will be definitely tough, but only the tough get going. We have to think 'innovatively smart' in 4.0 scenario.

No Disruptive Concepts

Change is the only constant in life, which is inevitable, and issues will have to be addressed as has been done traditionally. IT sector, once looked upon as a demonised intervention, is now openly embraced, viewed as a basic need since it has made complexities very simple. There has been exponential growth in the IT sector.

Industry 4.0, in its wake, is devoid of disruptive concepts or practices as one would assume and presume. Work style will undergo qualitative change in the digital arena, boost enthusiastic participation and healthy interaction between man and machines to resolve complex issues.

The myth that there will be employment gaps due to shopfloor taken over by digitally-driven technology, is not very true as technology is created by human beings and to run the same, we need human beings – only the difference will be human skills will get upgraded to meet the technological expectations and will be an opportunity for them to acquire higher skills in the 4.0 environment. It will be entrepreneurial responsibility to relocate human talent with adequate specialised training and inculcating in them innovative thought process to adequately address the change. In fact, human technological skills will acquire new dimensions to execute the assignment with innovative intelligence and smart thinking, generating more opportunities and better compensation.

Collaboration

In fact, there will be intense collaboration between humans and machines to produce unprecedented results in terms of productivity and quality. People will be digitally upgraded in their skill with the advent of 4.0 and will be smart.

Smart assistance system will do away with routine tasks, enabling humans to focus on creative and

value-added activities. With 4.0 on the anvil, there will be impending shortage of digitally-skilled shop floor talent, which will allow existing talents to extend their working lives through in-house learning/development and remain productive for longer periods. There will be flexibility in work style, which will enable them to combine their work, private lives and continue professional development more effectively, promoting a better work-life balance.

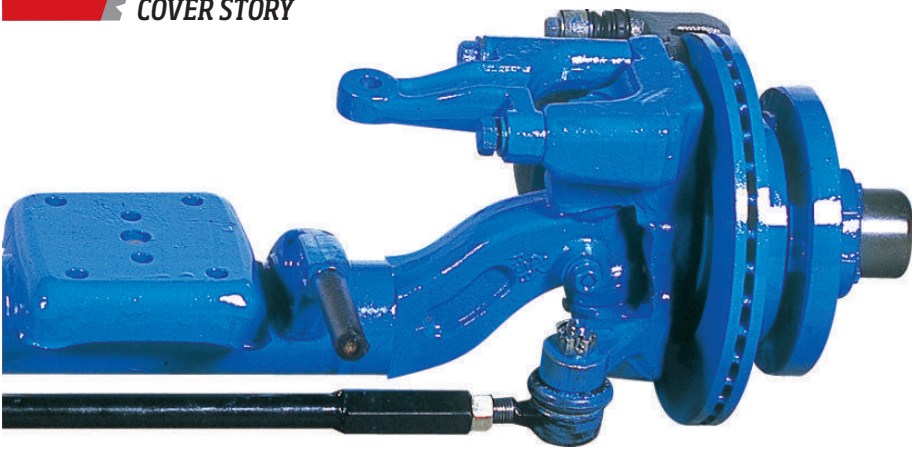
AI has four levels, Reactive, Limited Memory, Mind-set and Self-awareness, while we are still struggling with second characteristic. A knife in the hands of a surgeon and a killer have diagonally opposite intentions – once the distinction is clear in the mind-set, self-awareness in embracing 4.0 will be better understood with positivity.

Re-skilling

The work environment is fast changing from mechanical to mechatronics (an integration of mechanical and electronics) and conventional machines like lathes are getting outdated. We will move away from blue collar physical labour to increasingly mechatronic roles, PLC programming, algorithms, complex problem-solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgement and decision making, service orientation, negotiation, and cognitive flexibility.

Cyber-Physical System, Internet of Things





and Big Data go into 4.0 through integration of computation, networking and all physical processes with remote control through web and warehousing of complex data for business analysis. Evidently, enhancement and up-gradation of skills needs to be addressed through on-the-job specialised training so that human adaptation to 4.0 is smooth and their deployment is effective. The areas which need re-skilling include supply chain, production, maintenance, shop floor administration, e-connectivity between the machines and HR and every breath of activity in a factory administration. There should be mobile computing for digital adaptation.

Areas Of Specialisation

In digital transformation, areas of specialisation will involve not just stand-alone corporate identity, but all the partners across the extended value chain, including Digital Innovation Hubs. It allows partners along the supply chain to continually improve products/services, reduce costs, to manage production operations and monitor its performance, create digital eco-systems based on The Open Source Platform, accelerate time-to-market, speed up innovation and minimise risks, including big data collection, and analysis, access to innovative digital services without having to invest on expensive infrastructure or licenses. It will be to co-operate, collaborate and reap the digital change-over. High-speed and efficient customer service/support, on-time-delivery, access to status of products in production line etc. through digital autonomous and instant feedback will dominate the areas of specialisation.

Impact On Industries

The change will be impacting the industries, especially where the product life cycle is small, low and labour-oriented repetitive jobs. The sectors associated with manual labour will be most affected, followed by the industries in automation process such as textiles and electronics assembly.

In textile industry, the machines can replace cutting and sewing since Technology 4.0 can

work 24/7 without recharging, and even can work in 'dark' conditions without light, while speed and quality will still be of highest order. In electronic assembly, robots will replace humans.

The challenge will be for small-scale industry set-up, where conventional machines churning out products, may have to shift to smart set-up to meet the demands of precision/accuracy, timely and qualitative delivery, which will entail investment in technology.

OEMs will insist on their vendors shifting to 4.0 standards. Logistic operators will have to change to smart digital set-up to meet the stringent standards of deliverables and will have to move to m-mode to enable supply chain to track the shipment in transit.

HR Role

HR will have an immense value-added opportunity to upgrade the existing workforce to smart workforce through upgrading their skills to take on 4.0. This will increase levels of motivation in the 4.0 digital set-up, bidding good bye to conventional practices and thinking or innovating differently.

The fatigue from traditional work will give way to renewed energy and joy of work for employees in shopfloor due to use of mobile computing devices to monitor and control operations, bringing in life style changes and giving productive output. It is a known fact that mobile devices make the work-on-go much easier and induce shopfloor men with deep involvement in work, by default, as has been seen with the advent of smart phone apps. HR will have to plan and re-align the shopfloor talent depending upon the individual skills to 4.0. There will be joy of work with workmen due to

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digital penetration and measurement of output for appraisal will be easier for awards/accolades. In fact, each employee will have measured/authenticated value-addition and can see his/her own performance on day-to-day basis digitally and improve on the gaps to achieve the desired targets.

HR set-up will undergo drastic changes to smart digital set-up and employee interaction will be more on line with issues addressed spontaneously, leading to healthy employee relations and transparency. **APA**

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