



■ Harish Lakshman

Technology Helps, Never Hurts

Industry 4.0 is the terminology used for an overall eco-system of automation and data exchange across machines. This is evolving in the manufacturing sector, particularly in the automotive and auto component manufacturing. In addition to Industry 4.0 (the fourth industrial revolution), AI (Artificial Intelligence) is also garnering significant buzz and there is much commonality between the two. Essentially, they are evolution of technologies that lead to more automation with less human intervention to facilitate, among others, faster decision-making. The application of Industry 4.0 varies. Generally automotive companies are behind other industrial divisions like electronics. Also, India lags behind Europe, Japan and US on the adoption of these technologies. However, there will be increased use of these technologies on the Indian shop floors. It will enable efficient management of operations by removing variables in decision-making.

Pay-back Challenge

Today, there is no standard definition of various levels for Industry 4.0 and we cannot uniformly ascertain if a factory is an 'Industry 4.0' plant or not. Still the benefit of implementing these

technologies is remarkable. Cost being a decisive factor, pay-back calculation favours the developed countries more than India as the manpower cost in India is much lower. Reduction in workforce through automation is also a major objective. In this background, the adoption in India will take longer time. We have robots in eight out of 24 Rane Group plants. This is significantly lower than in some of our JV partners and other western companies. Our implementations are essentially need-based and in-principle as we do not want to employ technology that does not make financial sense.

In India, I believe, adoption of Industry 4.0 and AI will be slow. There may be limited applications in some factories even in India. Large-scale application would take time, though their use is increasing worldwide. In certain sectors like financial, banking and services like audit, AI adoption will be faster. In a manufacturing environment it would happen gradually. It will eventually happen because the ability to get things done will be significantly better.

Re-skilling

The requisite skill to use the new technologies effectively is another challenge. In the



manufacturing sector, the average person on the shop floor is not as tech savvy as someone in the banking or financial sector. With the introduction of software technology, the operator needs to be given the right skill to use it.

Theoretically the biggest threat and disruption is that these technologies take away manpower resulting in job loss. But, in my opinion, the nature of the job will get reconfigured and the type of skill required in an organisation would change rather than significant job loss. Automation may eliminate some types of jobs, but it would also create certain higher-order jobs.

When the industrial revolution was taking place in the UK, the Luddites destroyed machines as they felt machinery would take away their jobs. When CNC machines were introduced in the last century, the workers felt it would affect their trade. Now, when we look back, we see that jobs were not eliminated, but they were reclassified. Today, we may not require a skilled operator for every machine. I will certainly need a few experienced engineers to programme the machines to run them effectively. It only goes to show that new jobs would always come up as technology changes. Today re-skilling is important; the same

worker could be re-trained to do another job, he does not need to be replaced.

About 25 years ago, 15 percent of the Rane factories had CNC machines; today 85-90 percent of the machines are CNC-controlled, which means every machine has an attached computer where programming is involved. So the skills we teach our workforce today is quite different from what was taught earlier. As Industry 4.0 happens, re-skilling will be part and parcel of training. To introduce some 4.0 concepts in the factories, there has to be investment in skilling and re-training of people.

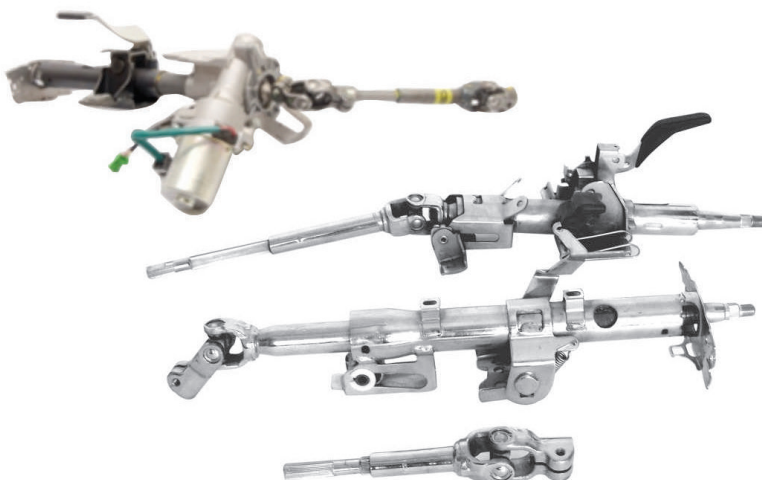
Jobs Change

Embracing new technology is good for human society; the nature of the job will change but jobs are not going away. This has been repeatedly proven over the years. Countries like the US, Japan and those in Europe have only gone from strength to strength; technology has never hurt them, it has helped in improving productivity.

There would definitely be job-loss, but society will have to adjust to these technologies. Over the last 150 years these types of disruptions have taken place and society had adapted. Also, these innovations are happening to solve some of the challenges currently faced by businesses and society. So ultimately, it should have a positive impact.

In the US there has been a concerted move to bring back manufacturing. It is slowly happening, but the manufacturing that is coming back is totally different with more automated environment with Industry 4.0 applications. This is definitely helping in generating jobs.

In India, we still have large-scale opportunity for employment with favourable demographics in a growing economy. These disruptions are not likely to bring wholesale change for at least the next three to five years. It will happen in incremental



steps. In my view, there could be application of AI in analysis to support decision-making. In the aftermarket, for example, Rane is reaching about 2,000 locations in India for selling brake-linings. To analyse the data from this wide network we may use AI type of software tools, but on the shop floor I think it would be more gradual.

While applying AI technologies, the companies need to exercise caution. There have been views shared by technocrats such as Bill Gates, Elon Musk, and others on the potential issues. There must be adequate safeguards to ensure that machines do not take control of everything. There has to be certain guidelines, rules and protocol in place for the development of AI. Governments and industry bodies should take the lead and come out with guidelines on using AI.

Big Data, Automation

There is significant buzz on analytics and big data. Though exaggerated, I think there is merit in it. Even today we tend to make decisions on the 80:20 principle, which means that 20 percent of the time you could be wrong. But if big data can do analysis on 100 percent, it would certainly help the business. The type of analysis being done now with the kind of data was not done even five to seven years ago. There will be a need to acquire relevant skills to handle big data. Data scientist is a big word, but I wouldn't be surprised to find a group of data scientists working in Rane, may be in five years, to analyse internal data and make recommendations to improve efficiency. This would also ensure creation of new types of jobs.

The planning process will get far more automated. Production planning is a management-intensive activity connected to daily operations in the plant. If this moves to a 4.0 scenario where loading and unloading between machines is automated and connected to a computer that reconciles hourly production by taking the necessary decisions, then quite a few jobs at the supervisory level will go away. For the computer to take those decisions there are



some complex rule-based algorithms that are getting developed; for those kinds of activities we will need people with different skill-sets, some of which could be addressed by re-skilling the existing manpower.

The other thing is optimisation of machines which would reduce manpower. This is already happening in Rane plants. Many of the plants have achieved a 2x improvement in productivity in the last five years. That is, doubling the output with the same number of people.

Considering the rapid pace at which technology is getting outdated, one area that will be relevant for the future is customising software and creating different types of algorithms. The second would be analysing large amounts of data to suit your production systems, considering all available variables. The third would be manufacturing engineering i.e. the kind of technology that goes into connecting all these machines, followed by remote diagnostics.

In my view the most affected industry would be financial services and online retail followed by telecom. These are the sectors where we would see maximum penetration of AI type of technology. Ten years down the line even surgeries will be performed by robots. Least affected would be segments like agriculture, tourism, etc.

Role Of HR

In this emerging scenario, HR will play a crucial role in enabling organisations manage the transition. Getting the right people, re-skilling employees, educating the workforce, keeping track of changes, are all key roles that HR would play; it will have to re-orient to the future. This is exciting, but I think it will be more evolutionary than revolutionary.

Industry 4.0 will not happen overnight displacing millions of jobs. It will evolve gradually, giving society time to re-adjust. No doubt there will be pain during the transition from some job loss. But, at the same time, new jobs would be created. Some people will make the cut, some will not. Challenges will be there, but in a country like India the pace of change would be slow. **APFA**

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