

GUEST COMMENTARY (/OPINION/GUEST-COMMENTARY) Author: Amit Bhingurde

Importance Of Taking Robotics Automation To The Last Tier



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NEED FOR TIER 1 & TIER 2 SUPPLIERS TO EMBRACE AUTOMATION

The automobile industry has been an important contributor to economies world over. It supports a wide range of business segments, both upstream and downstream, and adds several important dimensions to nation building, generating revenue, creating economic development as well as fostering R&D and innovation.

Throughout history, technological innovation in automation has underpinned every industrial revolution, be it the first industrial revolution which started in Britain with the steam engine, followed by the second industrial revolution based on mass production and assembly line, followed by the third industrial revolution of computer and automation and the current fourth industrial revolution of cyber physical systems. Today's economies are dramatically changing; Industry 4.0, interaction of man, machine and data would be changing the way production is done.

ERA OF MASS CUSTOMISATION

Mass customisation of vehicles is changing the way production lines are laid out in the automotive industry. The old ways of production in which identical models were produced on the same line is becoming obsolete. Back in the days of Henry Ford, things were very simple; he had a vision to scale-up production and believed the Model T platform was the best strategy to produce an affordable car for the world. He famously had said, "You can have any colour you want as long as it is black."

Consumer behaviour has turned turtle since then. Customers today want vehicles tailor-made to their needs and desires; no longer does one size fit all. Consumers today expect to customise every aspect of their car, from the body graphics in paint to the infotainment system, the number of possible combinations has increased exponentially. This is a huge shift for the automotive industry, which is largely capital-intensive and was traditionally based on economies of scale and mass production.

FLEXIBLE AUTOMATION

The keyword is flexibility. The trend towards manufacturing in smaller lots of greater mix will find an increased resonance within the automation industry. All this will lead to a strong case of tapping into the unique advantages of industrial robotics. Robotic automation would provide OEMs greater flexibility to build more models and variants on the same production lines. Often these allow the elimination of workstations dedicated to one model or variant, and the future trends of electric vehicle, hybrid vehicles, shared mobility and driverless taxis abroad would further push the use of industrial robots for flexible manufacturing.

Traditionally, OEMs have made large-scale deployment of industrial robots. Body and paint shops are largely automated by OEMs, but the facilities of Tier 1 and Tier 2 suppliers in India are not that much automated. OEMs in order to embrace the changes in demand push the Tier 1 and Tier 2 suppliers to automate their facilities and these suppliers further push the Tier 3 and Tier 4 part makers. In India, Tier 1 still has some level of automation, but Tier 2 and down-the-line facilities of suppliers have very low level of automation.

In stark contrast to developed countries and even China, automation at Tier 3 and Tier 4 suppliers in India is negligible. China is taking long strides in the area of automation and is practically called the “factory of the world”. India needs to imbibe the Chinese model, where automation, especially robotics automation should be prevalent not only with OEMs but also at grassroots level. But this can happen only when robotics companies focus on catering to the Tier 3 and Tier 4 suppliers. The trend has already been initiated by TAL as we came up with a robot BRABO, which is easy to install, operate, maintain and has a low cost of ownership.

To survive in this ever-changing environment, OEMs have to ensure their supply base remains diverse and healthy. The trend is toward localisation of supply chain. This helps OEMs source raw materials and sub-system units at a cost effective price. This also helps in keeping the manufacturer price competitive in the global market. Robotics automation at supply bases would make it easier for Indian Tier 2 suppliers to play the volume game in this competitive market, as competitiveness comes with

volume and technology. For OEMs, when they think of localisation they always keep three things in mind – cost-effectiveness, quality and timely delivery; the adoption of robotics automation would enable suppliers to cope up with variances.

INDUSTRY 4.0

Industry 4.0 is the buzzword today but in India we are still far from it, as automation is predominant only at the OEM level and to some extent, at the Tier 1 level.

Industry 4.0 is about interaction of man, machine and data, to simply explain if the demand for a particular model of a car increases, that information has to seamlessly flow within the car plant to down-the-line suppliers for timely delivery. Some suppliers supply to different OEMs; for them robotics automation would be the right fit in which they would tweak their production in accordance with their demand.

With industry 4.0 the shopfloor would be connected to the top floor with real time data and alerts, which would be collected and analysed using software by aggregating data from various systems and assets. This would allow a 360° view of operations, which result in better decision-making and ultimately higher operational performance would speed up the time to market process.

RESKILLING & UPSKILLING HOLD THE KEY

As technological advancements lead to ever greater robotic capabilities, companies will grapple with the dilemma of humans and machines competing against each other amidst apprehensions that machines would replace humans. The conventional thinking is that companies are buying robots to replace people, whereas the truth is that companies are using robots so that they can expand and improve product quality, increase production and keep employees effectively engaged.

One should not forget that the new technology would also lead to growth of new jobs; new job opportunities will arise to operate advanced robots and robotic operating systems. Requirement of programming, simulation and application engineers as well as software developers would increase. Rather than doing the dull laborious and dangerous tasks, workers would leave that to the machine and would

be effectively engaged and think of newer ways to increase production. The call of the hour is skilling; in this transformational process newer jobs would be created which would require new skill sets and discipline. These new jobs will be more mentally challenging and hence intellectual satisfying for future engineers. People need to get out of the mindset that automation would result in job losses. We need to brace up for the changes in the coming times and be prepared to train the new workforce so that they can embrace these changes.

Recognising just how pivotal robotics, and automation as a whole, will be for the future prosperity of India and the rest of the world, TAL has also recently entered the education sector with ROBOWHIZ. We have introduced Robowhiz that allows students to learn about robotics and automation while studying. By being able to supplement their theoretical knowledge with hands-on practical experience with the education cell, students will become acquainted with robotics at an early stage. This allows them to consider a career path in later life that incorporates this technology. Robowhiz can also be used in centres of excellence to reskill the present workforce and teach them about robotics, which is going to be relevant in the coming times.

CONCLUSION

With so much of disruption taking place in the automotive industry, OEMs have to keep pace with all the changing demands; the global push of coming up with energy efficient vehicles, stricter safety norms and emission standards are changing the rules of the game. For India to be prepared for industry 4.0, it is very important that robotics automation reaches the last tier. A start has already been done by BRABO; the notion that robots are for big companies is set to change and now with BRABO in the market, Tier 3, Tier 4 suppliers, SMEs and MSMEs can tap into the unique advantages of robotics and put the spotlight on India as a world automotive manufacturing hub.

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