

Better quality to move the world

L'ORÉAL



Having set focus on implementing a “smart production environment” in its existing packaging facility, the next step for L’Oréal is to implement advanced technology and digitalization throughout the plant. At the L’Oréal plant in Pune, the company successfully completed a project using a B&R edge control solution that met all the requirements. B&R’s cutting-edge technology has helped L’Oréal achieve greenfield benefits at its brownfield facility.



Q1. Smart manufacturing is the environment outside: Where do you think Indian manufacturing stands today on the global scale?

Arun Saravanakumar: Needless to say, India is doing a good job in this area. Even though the concept of smart manufacturing was germinated elsewhere, there are a few things in India’s favour to accelerate development in the Indian ecosystem. The first thing that comes to mind is that our Indian government is doing a lot of targeted activities like Make in India and Samarth Udyog Bharat 4.0. By setting up dedicated labs and systems, the government is helping the Indian manufacturing system spread the smart manufacturing environment. The second point is our huge information technology industry, which has boomed in the last 3 to 4 decades. There is a huge need for good IT infrastructure to integrate this software into a networked ecosystem. Software also helps in real-time data collection, analysis and

visualization of Big Data from various IIoT (Industrial Internet of Things) sources. At the heart of the revolution will be smart manufacturing, leading to novel solutions across the value chain and a paradigm shift that will transform India’s manufacturing process.

Q2. What do you suggest OEMs/automation providers do to prepare for the future of smart manufacturing? Where should they start?

Saravanakumar A: The biggest obstacle today is the willingness or attitude to get going. All organizations associated with the manufacturing industry should follow the motto “Just do it.” Regardless of size or location, everyone should adopt technology to look ahead at how things will be and prepare for the future. The right thing to do is to start doing it. I can only advise all factory owners to have faith in the potential of smart manufactur-



Arun Saravanakumar
Plant Director, L'Oréal

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ing, think about the future and start some projects. Even if one project fails, you will learn from it and prepare for the future.

Q3. What do you think are the other challenges facing Indian manufacturers on the road to Industry 4.0?

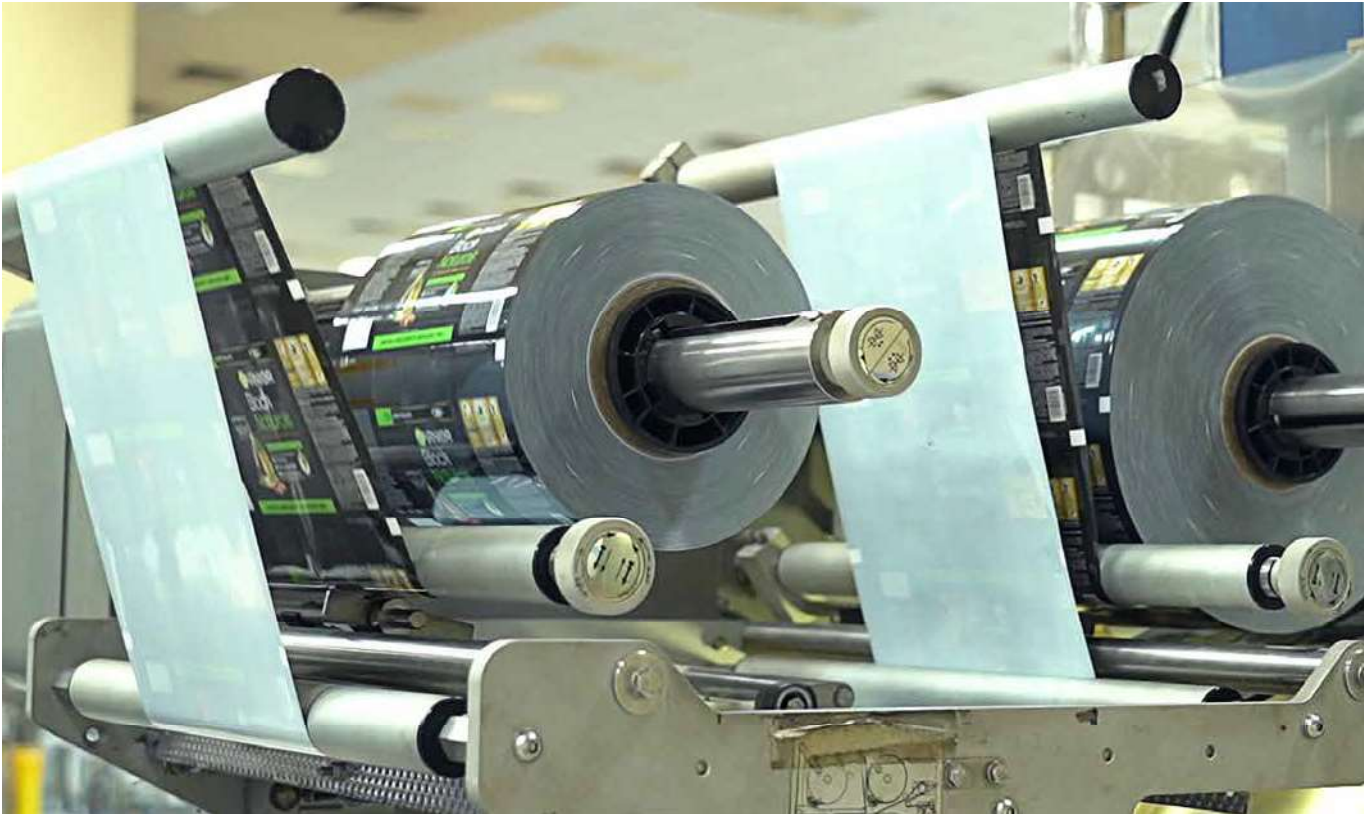
Saravanakumar A: Industry 4.0 helps our Indian manufacturers to be competitive in the world of tomorrow and beyond. However, looking at the Industry 4.0 landscape, several issues have emerged as critical challenges. Apart from mindset, uncertainty about ROI (Return On Investment) and unstructured data, the talent shortage is probably the biggest challenge in Industry 4.0. Looking at machine-to-machine connectivity, massive OT data is being transferred to IT applications, and many companies are finding that integrating it is more dynamic than anticipated. This IT/OT integration is often unstable as the business learns to adopt the technologies. These issues make it difficult for Indian manufacturers to figure out where to begin their Industry 4.0 journey. However, by adopting a new mindset, transforming the company's culture, adopting a new business model, creating an appropriate level of leadership; and nurturing talent that can meet the demands of Industry 4.0; the rest will follow as long as the change is closely managed throughout the process.

Q4. Industry 4.0 and smart manufacturing are all about connectivity and connected facilities; how do you see this development?

Mayur Raut: One of the most difficult tasks today is to bring IIoT to brownfield systems. In our factory, we have quite old systems, and we are constantly facing problems with communication protocols. Therefore, one of the most important aspects in such cases is that we have a higher level of expertise to choose the type of automation we should use. This is because adding sensors to the existing equipment is one of the biggest tasks for us. It is imperative to re-evaluate the current situation, re-do the basics and move the right technology with the right experts.

Q5. How can companies that have legacy equipment and systems adopt these new technologies?

Saravanakumar A: I know when we hear words like "upgradation" or "modernization", it's hard not to think of investment. But the cost of modernizing legacy equipment and systems is significantly less than the losses you suffer by keeping them in place - in the form of service costs, security issues and general inefficiencies. When you invest in modernizing legacy systems, you're investing in scalability and compatibility that will ultimately enable your business to operate efficiently, creatively and effectively. Digital transformation is not just about systems,



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it's also about culture. The company must adapt to the changing business environment to compete in the increasingly competitive marketplace and build a culture that embraces change. And to do that, you certainly don't have to scrap your entire system and start over. When revamping your old equipment and systems, make sure you're using solid, modern, future-proof technology. Consult your automation vendor or systems integrator. The right technology package will help create an efficient, reliable and competent product. The expertise of a third party, i.e., an automation provider or system integrator, can be a great help. At our L'Oréal plant in Pune, B&R India has helped us in every aspect of upgrading legacy systems. The B&R team has already helped us analyze the current solution, develop a solid strategy, prioritize features and rebuild our legacy packaging lines at the L'Oréal Pune plant using the latest technologies and system architecture solutions.

Q6. Connected manufacturing is already a reality at L'Oréal. Could you give us an insight into your practices? And what was the transformation process like?

Saravanakumar A: L'Oréal has many factories around the world travelling at different paces on the road to Industry 4.0. There are many inspiring case studies on connected manufacturing from different L'Oréal plants around the world. At our Pune plant, we have started to improve the performance of our packaging

line in production. As part of our Industry 4.0 initiative, we wanted to use the Internet of Things to maximize Overall Equipment Effectiveness (OEE) and productivity, reduce energy consumption and maximize capacity utilization. However, there were some challenges at the beginning: Our L'Oréal plant in Pune has multiple assembly lines with different machines, systems and sensors from different manufacturers, all communicating with different protocols. Second, the amount of data, types and applications was so large that the platform to handle it had to be scalable and flexible. And finally, we were faced with the typical challenge of upgrading our brownfield facility. The real bottleneck was to integrate the Internet of Things into the legacy equipment without incurring further investment costs for equipment replacement.

Raut: From day one, B&R India and its qualified partner Unilogic were determined to meet the integration requirements to bridge the technology gap with their Edge Controller. Using the open OPC UA communication standard for connectivity, data was seamlessly and securely transferred from the various assets and diverse OT data sources. Within days of implementation, the machines and systems began streaming real-time data through B&R controllers. This facilitates data-driven decisions that allow us to create solid action plans to improve the efficiency of the machines. It's not just about improving standards or equipment condition, but the thought behind it is to make our employees' lives easier by elimi-

nating a lot of manual work. It helps us focus on the right parameters when it comes to improving OEE or reducing machine downtime. The MTBF (Mean Time Between Failures) or MTTF (Mean Time to Failure) is significantly improved by this project.

Q7. Performance dashboards have become the order of the day; what's the reason behind that? We also have the role of performance manager in organizations. How has the dashboard helped you in this task?

Raut: One of the main contributors towards downtime were short stoppages. It was difficult for us to record these because we didn't have a system for them. With BSR's Edge Controller, it has become very easy for us, as all data is available immediately. Every single stoppage is registered in real-time. The idea behind this real-time dashboard for the packaging lines was also to give our employees who operate these lines more accountability and ownership. Thanks to the connected lines, they can now act proactively to improve the health standards of the machines. Much of the work that was previously done manually, such as generating data, analyzing it and creating presentations has been done with the help of BSR's business intelligence tool based on Jaspersoft. The real-time dashboard is designed to provide insight into many areas, such as the lines' pending orders, the time a line takes to do a setup changeover because reducing setup time is one of the most important aspects when it comes to serving the market in an agile way. Another feature is the monitoring of the health of the quality defect detectors, which is integrated into the dashboard.

Q8. How did you come across the Edge Controller solution?

Raut: Last year, the vision of our factory was to be digital and tech-savvy. We looked at different IoT solution providers. We came across a solution that had already been implemented in one of L'Oréal's factories in France, and BSR's Edge Controller was the proven solution for them. Still, implementation was a challenge for us because we were using a different ERP system at our Pune plant. But with a lot of brainstorming and logical development, we managed to solve the problem.

Q9. Please tell us how BSR's Edge Controller has helped you achieve your KPIs for production and maintenance.

Saravanakumar A: It's been a while now since we set up this

project data website. We are now at a stage where we have started monitoring the data on a daily basis and it is helping us in many ways as mentioned above. I am now confident that we can easily make a 5% jump next year, looking at the benefits we have now. We already have very good OEE and performance. It also helps our technical team to build a solid action plan that will hopefully allow us to reach our KPI targets in the near future.

Q10. Other than working with brownfield lines and keeping manual records and OEE calculations, what challenges did you face during implementation, and how did BSR help you overcome those challenges?

Raut: This project was certainly made more challenging for us because we started it in the middle of the pandemic. It was important for us to have a flexible and agile service partner during the different implementation phases. The team at BSR proved to be just what we were looking for. They did a lot of the backend work to develop the logic so that it could work remotely, as it was not possible to enter the site during the first months of the pandemic. Even after the actual run-through, we had to make many changes to the logic, which were supported by BSR. In conclusion, this project is a fruitful result of the collaboration between the BSR and L'Oréal teams.

Q11. How do you plan to transfer the lessons learned from this implementation to other areas at the Pune plant and within L'Oréal?

Saravanakumar A: We are inspired by the possibilities that are opened up by a connected line. We have even thought about using it in the spirit of sustainability to monitor our electricity and water consumption and make improvements that benefit the environment. The introduction of connected manufacturing has won our trust, and we are satisfied with the initial experience. For the future, we are thinking about doing a bit of upstreaming in terms of our manufacturing processes. We will think about connecting them all, which will add more advantages. Many opportunities have opened up within the L'Oréal plant, and as I mentioned earlier: what's important to get started. Our partnership with BSR India can help us develop an informative and intellectual manufacturing process and product. The introduction of advanced technologies and digitalization will undoubtedly be our focus in the near future. ←



Mayur Raut
Performance Manager, L'Oréal

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