‘Marrying people and technology can solve current manufacturing challenges of scale, speed and quality’

The manufacturing sector has lost its salience to attract people over the years. To change that, the need of the hour is to embrace technologies such as the internet of things (IoT) and bring in human-centric development, says **B. Thiagarajan**, Managing Director of Blue Star Ltd. in a conversation with **Sudipta Ghosh**, Data and Analytics and Industrial Products Leader, PwC India.

Sudipta Ghosh (L) with B. Thiagarajan

Excerpts from the interview

Sudipta Ghosh: Hello and welcome to this edition of Immersive Outlook. My name is Sudipta Ghosh, I'm a partner at PwC India and today we will be talking about Industry 5.0, which introduces the perspective of resilience, sustainability and human-centric solutions, particularly for the manufacturing sector. Joining me today is Mr B. Thiagarajan, the MD of Blue Star Ltd., who has over four decades of industry experience across multiple organisations. We always knew that efficiency and automation were going to be critical for manufacturers, but we now see organisations looking at ways to make their applications more sustainable and resilient as well, while trying to ensure symbiotic interactivity between humans and machines. While we aspire to make manufacturing 24% or 25% of the GDP's share, today the percentage is around 16% or 17%. To meet this goal, we possibly have to grow at double the rate of what our economy is growing at right now. And that is a great ambition to have. In that context, it would be great to understand your thoughts from an industrial and organisational perspective. What kind of growth do you see in your sector and in the overall manufacturing sector, specifically in the Indian context?

B. Thiagarajan: It's such a pleasure interacting with you, Sudipta. The story is the same across various sectors. It is India's decade. Driven by many things that are happening around, there is a huge aspiration for growth in every industry that I look into. Take, for example, the consumer durables and electronics [segment], in which we are talking about becoming the fourth largest in the world in the next five years, at a record INR 5 lakh crore revenue. The sector that I belong to, the air conditioning industry, will more than double by 2030 and become the largest in the world by 2040, overtaking China. So this is the moment when manufacturing needs to meet scale. In that context, Industry 5.0 is indeed an interesting approach.

Sudipta Ghosh: When you talk of this growth, there will probably be a huge amount of focus on the consumers of our products. We are seeing the expectations of our consumers change, as they now look for greener products. We are already seeing this shift in many of the export sectors as India becomes a manufacturing hub. What are organisations doing to improve customer centricity, taking into account their changing needs and expectations, particularly in the light of environmental factors?

B. Thiagarajan: The very first thing to keep in mind is cost leadership. You [a manufacturer] are trying to become a manufacturing leader in the country and create your own component ecosystem without any dependence on imports. Therefore, the nature of manufacturing itself is changing with capacities being created, but scale is yet to happen, and you are trying to make quite a few products for the first time. So there is a cost issue. You had been used to imports and now suddenly, you are making products which are competitive from the consumer point of view. It is key to deliver a product at a price which the customer can afford, only then can scale happen. So customer centricity begins with that. The second aspect is connected with the lifecycle cost [of a product] as against the initial purchase. In quite a few categories, it is about the product's power consumption and the carbon footprint. Manufacturers need to keep in mind factors like the reusability and recyclability of a product and the e-waste it may generate. So, you need to look at the cost and sustainability of the product while ensuring that it creates a lower carbon footprint. Most importantly, in a connected world, if an advanced technology is being leveraged elsewhere, it should be implemented here as well. So, we are in exciting times. It is indeed very challenging but we cannot escape these dimensions.

Sudipta Ghosh: While efficiency and cost optimisation can always be achieved through conventional means by working on different levers, now we see cost efficiency being increasingly linked to sustainability. For example, if I try to have a conversion process that can reduce my energy consumption or my scope 1 emission, it solves my twin purposes of reducing my energy consumption cost and making my product look greener. I can use that as a differentiator in the market. While this idea is at a conceptual level, I would like to get a perspective on its practical implementation from you. Are you sensing that sustainability has moved away from being a 'nice-to-have' feature to something that can add to the competitiveness of a product from the perspective of customer positioning or cost advantage?

B. Thiagarajan: I come from the school of thought that unless and until there is a business case, no one is going to embrace sustainability, especially in a growing country like India with billions of consumers. Whether it is meant for a B2B or B2C model, you have to make a sound business case as to why marketeers, manufacturers and service providers must embrace sustainability. Take air conditioners, for example. There may be an energy labelling programme legislated for various purposes, but If I have to sell more, I need to demonstrate that my product consumes less energy. Let us say we are selling to a B2B customer, for whom the power consumption at an IT data centre adds up to a huge cost. Therefore, it is important that the product that is manufactured be highly energy efficient. Green shifts aren't restricted to manufacturing, they must begin at the R&D and conceptualisation stage. Manufacturers must ask themselves: How can I design a product and create a value proposition around higher energy efficiency? How can I ensure recyclability and how, through recyclability, can I offer a benefit to the consumer [like recyclable packaging]?

Traditional manufacturing is about research and development, prototyping, setting up a manufacturing unit. The efficiency of that manufacturing unit will be decided at the manufacturing engineering stage. I think we are at a crossroads. For the first time, we will be looking at scale. We are used to manufacturing units that churn out half a million units in a particular time period and now we are looking at units that can produce 3 million, 5 million or 10 million units in the same window. That itself is new and that kind of scale cannot be achieved unless you make manufacturing very efficient from all angles, be it through the equipment you use, the productivity, the power consumption or the material flow. It is a completely different science, according to me.

Sudipta Ghosh (left); B. Thiagarajan (right)

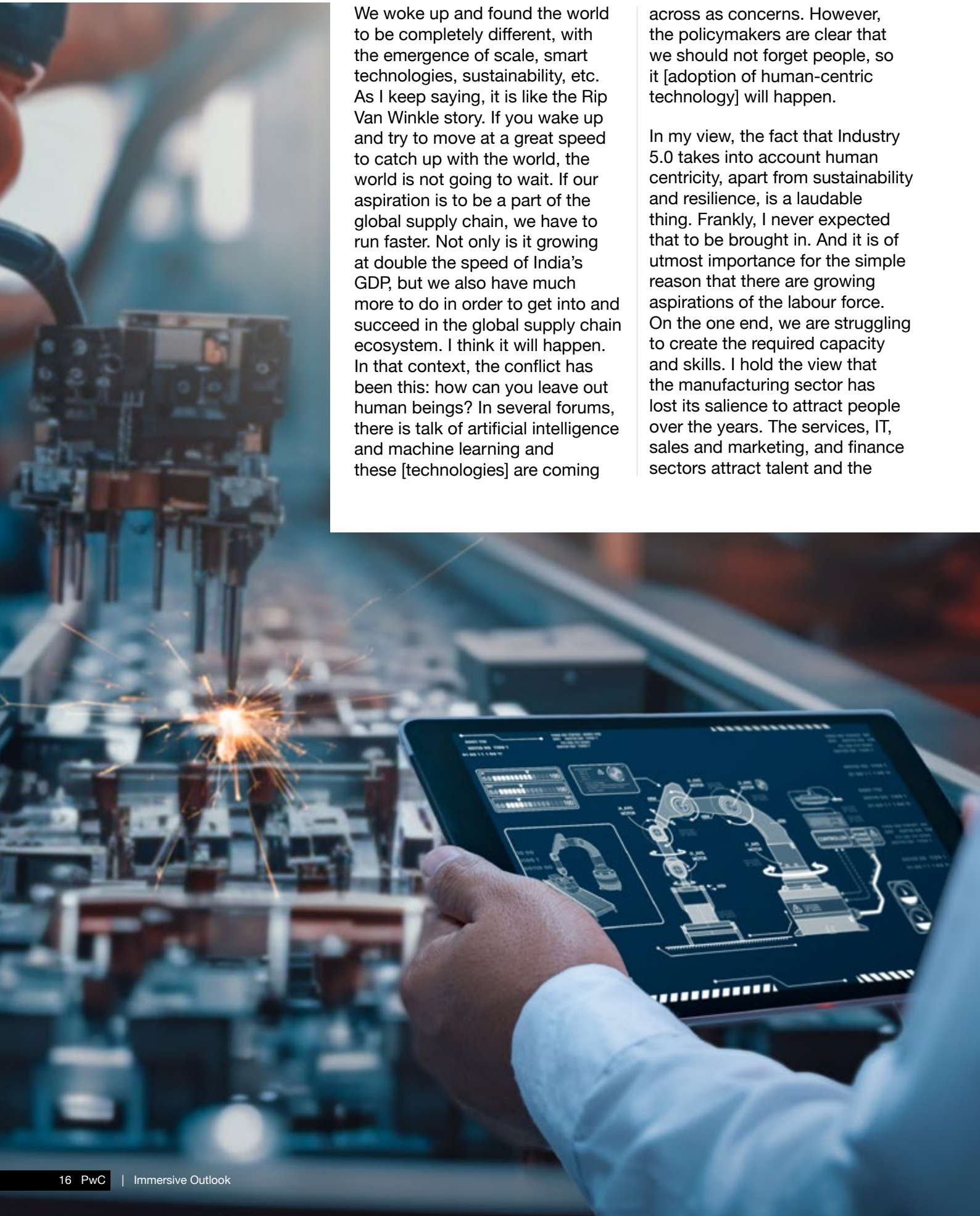
Sudipta Ghosh: We are seeing a lot of focus on creating a digital replica of the supply chain or creating a digital twin of a product, so as to simulate the production process and identify bottlenecks and choke points. The simulation also helps manufacturers find ways to build more redundancies into the supply chain so that operations can be future proof and business continuity is ensured. When it comes to your organisation or the overall industry, do you see any shifts in thought processes, in moving away from focusing solely on efficiency to also looking at business continuity and resilience?

B. Thiagarajan: Most CEOs, including myself, would list supply chain concerns as the number one challenge. If I'm losing sleep, it will be over this particular issue. These concerns arise from (a) the Make in India imperative and (b) the geopolitical risks involved with over-dependence on vendors across the globe or in a few countries. Your whole growth strategy can be impacted if a particular component stops being available. It may not have substantial value but it can stop production. There are multiple things that are happening. First, you have to customise your product for the country and its residents.

Second, in a few categories like air conditioners, you have to design the product according to climatic zones. Third, you have to keep in mind that you are attempting a new level of scale for the first time and fourth, you may not have sufficient time to conduct testing or sufficient capacity in R&D to look at multiple vendors. The vendor ecosystem is just developing within the country. We were deluding ourselves that the COVID-19 pandemic had taught us a lesson. That was momentary. It was only a trigger. Going forward, the manufacturing story will need to look at the supply chain in a completely different manner. And it is something which is making us lose sleep.

Sudipta Ghosh: Shifting gears a little bit, one of the promises of Industry 5.0 is a huge focus on human capacity. There has been a long debate on whether an algorithm is going to replace a human being, but we have seen that it is never really one versus the other. It has always been one with the other. So how can a human being work collaboratively with an algorithm, a bot or a machine in a symbiotic manner and make an application better or more productive? I would like to understand your perspective on how people are taking in such technological advancements [that promise human-machine interaction]. Is the symbiotic relationship between human and machine actually happening on the shop floor or is there a possibility of that in the future?

B. Thiagarajan: I am very happy that you are thinking this way. In a manner of speaking, Industry 4.0 created a perception that it is not people-friendly or, specifically, labour-friendly. In a country where employment has been a challenge, manufacturing was supposed to be the solution. I hold the view that we forgot manufacturing somewhere.



We woke up and found the world to be completely different, with the emergence of scale, smart technologies, sustainability, etc. As I keep saying, it is like the Rip Van Winkle story. If you wake up and try to move at a great speed to catch up with the world, the world is not going to wait. If our aspiration is to be a part of the global supply chain, we have to run faster. Not only is it growing at double the speed of India's GDP, but we also have much more to do in order to get into and succeed in the global supply chain ecosystem. I think it will happen. In that context, the conflict has been this: how can you leave out human beings? In several forums, there is talk of artificial intelligence and machine learning and these [technologies] are coming across as concerns. However, the policymakers are clear that we should not forget people, so it [adoption of human-centric technology] will happen.

In my view, the fact that Industry 5.0 takes into account human centricity, apart from sustainability and resilience, is a laudable thing. Frankly, I never expected that to be brought in. And it is of utmost importance for the simple reason that there are growing aspirations of the labour force. On the one end, we are struggling to create the required capacity and skills. I hold the view that the manufacturing sector has lost its salience to attract people over the years. The services, IT, sales and marketing, and finance sectors attract talent and the

manufacturing sector does not. In order to change that, we must embrace technologies such as the internet of things [IoT] and bring in human-centric development. Now, I think it is possible and that this is the right time to do it, for the simple reason that by marrying technology with people, we will be able to solve the current challenges we have got. The important one being [the need to achieve] scale. [By continuing] in the old way, you will never be able to achieve the scale you aspire to. You can improve the quality [of products] and the speed at which you introduce new products by marrying these two [humans and technology]. And the challenge will be, how will you upskill and ensure people learn fast without seeing it [change management] as a formidable challenge?

Sudipta Ghosh

Sudipta Ghosh: When it comes to reskilling and upskilling, which trends do you see shaping up (a) in terms of facilitating more seamless interactions and (b) in terms of adopting some of the solutions being built in the organisation?

B. Thiagarajan: I am passionate about the subject. Firstly, organisations must look into ways of imparting skilling through technology. The second part is geotagging people as they migrate, and trying to locate and certify them. The third part is looking at how their jobs on the shop floor can become much more creative and interesting from boring and repetitive. I think it [the shift] is beginning to happen, but there is a long way to go.

Sudipta Ghosh: To summarise, is there anything else that you would want to talk about in terms of what you are seeing from an industry perspective? Any closing thoughts or suggestions that you may have?

B. Thiagarajan: Sustainability is the most talked-about point and it will always be there, because of regulatory requirements. I think we have to keep in mind the UN SDGs [Sustainable Development Goals]. For example, manufacturing was considered a masculine job, but we need to look at encouraging inclusion by bringing in women into manufacturing jobs. With technology, that is possible. Women have a huge role to play in the manufacturing growth story. Meanwhile, traditional thinking is another aspect that needs our attention. There are exceptions in India but in most cases, we are not taught to think big. And that is impacting [growth]. Scale is important, as are smart technologies, sustainability and speed.

Sudipta Ghosh: It is a very, very exciting time and I think we are very fortunate to have you with us to share that excitement. We think this is pretty much an inflection point for all of us, in terms of how we leapfrog from the current state to the next level of maturity. I thank you once again for all your valuable thoughts and comments, and look forward to seeing some of the things that we discussed actually happen.

B. Thiagarajan

B. Thiagarajan: Thank you. It was a pleasure interacting with you. I compliment PricewaterhouseCoopers for identifying these challenges and coming up with [solutions on] Industry 5.0. All the best to you. Thank you very much.