'Manufacturing SMEs should evaluate new technologies'

"Traditional approaches might not help in matching the steps or keeping pace with the global industry. New approaches and solutions can help them stay relevant, competitive and resilient," says Santosh Prasad, Manager - Technical Support, DesignTech Systems Pvt. Ltd.

Q What are some of the technologies that will shape the future of manufacturing?

I believe that technologies such as Industrial Internet of Things (IIoT), Augmented Reality (AR) and Advanced Automation will shape the future of manufacturing and will usher the industry towards smart manufacturing and Industry 4.0. Advanced automation and robotics are key to building a smart plant and manufacturing facility. Also, AI-based systems, and Machine Learning, are the new technologies that will see a rise in adoption in the coming days.

Q Could you elaborate on how Industrial Internet of Things could do so?

Of course! Industrial Internet of Things (IIoT) will help companies run diagnostics on their plant machines or systems operations. It will red flag the imminent functioning or operational issues in advance. This will enable companies to address them before they occur. So, with information on aspects such as rise in temperature or pressure, vibrations, or required servicing, such as adding oil, etc., companies will be able to ensure maximum uptime of their systems. This in turn will increase the overall productivity and efficiency of their manufacturing plant operations. The real-time data is captured through sensors. With the help of the right software, a performance dashboard of the machine is created, which helps companies analyse the performance of the systems. Overall, the manufacturing dashboard can give a company a better perspective on their plant's manufacturing effectiveness.

Q What about the role of Augmented Reality?

Augmented Reality (AR) helps create enhanced, interactive, and immersive digital experiences, which can be used to develop training content for the plant personnel. So, AR can teach them how to operate, commission, troubleshoot or carry out the servicing of the machine or systems. These experiences reduce the messaging ambiguity and can be made available in multiple languages. Because it is an audio-visual guide with interactive instructive guidelines, it enhances the overall learning experience, while also ensuring the quality of training imparted is most effective. AR experiences are visually rich and extremely detailed. With these experiences, the service and maintenance staff or people handling the equipment can get adept at using the machinery and can refer to the content whenever they feel the need to. A real-time expert's assistance can also be availed while using AR solutions.

Q How will the adoption of digitalization impact the manufacturing industry post the pandemic?

The global pandemic literally brought the world and manufacturing industry to a

standstill. While the world is still grappling with the effects of the pandemic, on the manufacturing front, companies have realised the importance of digitalization. They are now looking to invest in tools and technologies that can help them manage, monitor and carry out the operations remotely in the best possible way. In a nutshell, in the post-pandemic world, companies will invest to implement greater digitalization to reduce the impact on manufacturing output should the crisis ever strike again.

Q Do you have any suggestions for Indian manufacturing SMEs with regard to the adoption of these technologies?

Yes, I do. While the initial investment of implementing smart technologies might be higher, but with a detailed ROI calculation, and as per the key application imperatives of the company, they can start adopting technologies that can help them stay competitive and resilient. One of the important suggestions is companies should envision the imminent change in the global manufacturing scenario, and stay prepared to match that level of product throughput and quality excellence. This can only be achieved if they move with the time and upgrade their processes and technologies that can ensure higher output and greater efficiency.

Companies here are sceptical or apprehensive to make investments in new technologies. But many of these solutions such as 3D printing or additive manufacturing, product lifecycle management, etc., are now proven and tested to know that they can benefit manufacturers here too. These technologies can actually help companies build better products faster and streamline or configure optimized manufacturing processes for maximum efficiency.

Manufacturing SMEs should evaluate new technologies, understand if and how they will benefit from them, calculate the ROI, and if they are convinced that these technologies will help them grow their business with tangible results, then they should implement them at their facilities. Traditional approaches might not help in matching the steps or keeping pace with the global industry. New approaches and solutions can help them stay relevant, competitive and resilient.