MACHINE LEARNING AND AI: THE NOW AND NEXT IN HIGH-TECH MANUFACTURING LANDSCAPE

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High-tech manufacturing needs to live up to its name in more ways than one. It has become a model of efficiency driven by expectations of introducing superior product versions in rapid succession. So, enterprises must adopt advanced technologies to respond to this industry dynamic as well as ensure sustainability in the long term.

A fine example of the rapid changes in high-tech manufacturing is the mobile phone industry. Never ending evolution in the mobile technology fuels a constant battle between handset manufacturers to get the most advanced gadgets to consumers at lightening speeds. Global handset manufacturers therefore need real-time visibility across the supply chain – from a broad spectrum of components for assembling diverse handset models to model-wise inventory for sales forecasting. At the same time, many of the high tech manufacturers are grappling with the technological advances in the area of Automation, AI and Robotics which, if leveraged effectively, can provide them with the much needed visibility

Robotic automation meets machine learning

Foxconn, a leading electronics contract manufacturing company, has a factory in Zhengzhou, China with a daily production capacity of 500,000 smartphones. The company has few peers when it comes to scalability in production, yet it seeks to automate production up to 30% using robots at its Chinese factories by 2020.

In a parallel universe, the semiconductor industry is also turning to machine learning to reimage the assembly line operations. Imagine the possibilities - cognitive computing systems monitoring integrated circuits and reporting deviations in quality, which can be addressed by engineers working remotely, to ensure accuracy and precision in production.

Infosys is driving a business transformation across and beyond the high-tech enterprise using robotic automation. An active participant in the conversation of the Industry 4.0 framework, Infosys is collaborating with Kuka, a global robotics automation company, to develop a software platform that enables enterprises to harness data for enhancing processes across the product lifecycle.

Machine learning: promise meets reality in high-tech manufacturing

With technology disrupting distribution segment and manufacturing becoming commoditized, Infosys is helping high-tech manufacturers embark on the Automation journey across the value chain.

Leveraging machine learning, Infosys developed a bespoke application for a global distributor of electronic components and embedded solutions, whose services accounted for 50% of revenues. Infosys developed a chatbot for the high-tech distributor to better serve and engage customers. The chatbot helps customers find relevant parts or recommend alternatives, shares detailed product information and toolkits, and connects with a customer support representative via chat in a seamless process. The chatbot also mines past interactions with customers for troubleshooting and recommending product upgrade(s) or the 'next best offer.'

Infosys is also working closely with clients to leverage machine learning for enhancing marketing effectiveness. A global semiconductor company faced challenges in managing its online product catalog. The Web store was maintained by a team who manually updated the product list and matched availability with inventory from diverse sources of information. Infosys used machine learning to proactively monitor the product range, eliminate products that were phased out, and alert the webmaster in the event of any mismatch between demand and supply. This simple Machine Learning application enabled the semiconductor company to generate annual savings of US$ 360,000. Within a year, Infosys team implemented several use cases that generated multimillion dollar savings for the client.

The way ahead

High-tech manufacturing needs to harness automation and artificial intelligence on an industrial scale to drive sustainability. Smart technologies help high-tech enterprises synchronize processes, enhance quality, and boost production. The future of high-tech manufacturing is indeed bright, with shifts in these advanced and emerging technologies.

In the words of Jensen Huang, CEO of NVIDIA Corporation, "We stand at the beginning of the next era, the AI computing era… In this era, software writes itself and machines learn…"
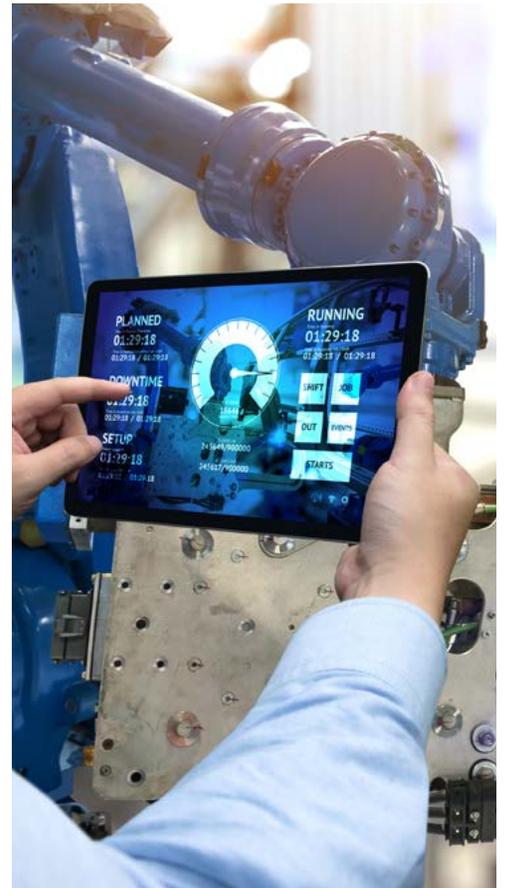
About the Author

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Komal joined the company in June 1998 and since then has played a variety of leadership roles in client services, sales & operations. Komal has been instrumental in helping clients develop and implement their Business Transformation programs, Global Sourcing strategy and IT initiatives. Komal participates in the steering committees of many of the key client relationships.

Komal holds a Bachelor's degree in Electronics Engineering from Kurukshetra University and an MBA from the Indian Institute of Management, Kolkata. Komal also is a marathon runner and lives in the Dallas, TX.

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