Digital Twin Strategies and Technologies for Modern Supply Chains

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Abstract : With the advent of cost-effective hardware and communication technologies, the scope of digitalising operations within a supply chain has tremendously increased. This has provided the opportunity to create digital twins of entire supply chains through the use of Internet-of-Things (IoT) and communication technologies. Adverse events like the COVID-19 pandemic and unpredictable geo-political situations have further warranted the importance of digitalization and remote operability of day-to-day operations at critical nodes. Globalisation, rising consumerism & e-commerce has exponentially increased the complexities of existing supply chains. We discuss here a scalable, future-ready and inclusive framework for creating digital twins developed along with the industry leaders from Cisco, Bosch, Accenture, Intel, Deloitte & IBM. We have proposed field-tested key technologies and frameworks required for creating digital twins. We also present case studies of real-life stable deployments done by us in the supply chains of a few marquee industry leaders.

Keywords : internet-of-things, digital twins, smart factory, industry 4.0, smart manufacturing

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