

“DATA-DRIVEN DECISION-MAKING AIDS INTELLIGENT SUPPLY CHAIN”



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How can India build a resilient supply chain by digitisation?

Logistics costs incurred in the Indian supply chain networks account for 14% of the GDP (global average of 8%), creating a competitive gap of USD 180 billion for India. This is likely to rise to USD 500 billion by 2030. Higher logistics costs result in lower pricing advantage for consumers, which, in turn, slow down adoption and growth.

This situation is a consequence of multiple challenges like poor-quality infrastructure support that leads to breakage and leakage of cost, technology adoption in the supply chain process, unbalanced logistics model on supply and demand leading to opportunity loss, poor inventory management, and availability and quality of data.

While organisations have not reached the highest level of maturity, digitisation and digital adoption have been rising exponentially in India. There has been a monumental shift in businesses, especially after the rise in e-commerce sector in India. Enterprises are more consumers experience-focused; therefore, a lot of technology integration with physical networks has taken place.

However, it has not been planned comprehensively with a clear roadmap of process, governance, and technology. With the proper roadmap and framework aided with technology adoption across the value chain, we could bring the right quality of data and traceability of physical assets in creating a resilient supply chain network. Data-driven decision-making could aid in an intelligent and agile supply chain.

How is digital twin crucial to the development of IoT technology?

A digital twin is the digital proxy of a physical object or process or device. The growing demand for IoT sensors and AI/ML makes digital twins crucial in maximising

efficiency, predicting complex outcomes, avoiding quality issues/rework, and reducing operating costs.

Digital twin coupled with IoT duplicates the physical model for remote monitoring, viewing, and controlling, which continuously adapts to operational changes based on real-time data. Besides providing descriptive decision-making capabilities, organisations can make agile AI predictions by coupling AI with real-time analytics. For example, there could be processes running for multiple hours before determining the success and failure of the batch by manufacturing companies. This helps predict the likelihood of a batch failure and quality issues during runtime with the help of sensor data and AI/ML capabilities.

Will the implementation of AI and data analytics in digital twin enable us to gain more insights? How?

Digital natives increasingly expect a seamless, integrated, consistent, and hyper-personalised experience across their digital footprint in the new post-pandemic digital era. ‘Information’ is a crucial phase in the consumer journey for making informed data-driven decisions.

With evolved modes of communication, integrating the consumer’s behaviour across channels to provide an omnichannel experience requires data collection across devices, making sense of the different logs, and building the right AI/ML models at scale.

Digital twin with AI/ML and IoT creates ‘connected digital things’. This aids organisations in generating real-time data, descriptive analytics with analysis and insights for better consumption and decision-making, and providing visibility and traceability of assets across the value chain, identify and support to create a balanced logistics model, along with collaboration and planning. It also enables predictive analytics to identify the problems in advance and early warnings on failure, downtime, forecasting of demand, and supply. This helps optimize logistics distribution and inventory stock-out vs. leakage.