

India Digital Twin Market By Type (Process, Product and System), By Technology (Internet of Things, Artificial Intelligence & Machine Learning, Extended Reality, Blockchain, Big Data Analytics, 5G), By Application (Manufacturing Process Planning, Product Design, Predictive Maintenance, Others), By End-User (Manufacturing, Automobile & Transportation, Healthcare & Lifesciences, Aerospace & Defence, Energy & Utilities and Others), By Region, Size, Share, Trends, Opportunities and Forecast, 2019-2029

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Abstracts

India Digital Twin market is growing owing to the rising digital transformation movement that has spurred the need to monitor the condition of machines and equipment along with rising government investment on digital twin for disaster management. The increasing availability of skilled workforce and operational and development cost advantage across various end-use industries have led to an increased focus on digital twin to overcome the risk situation and optimize the performance. Moreover, adoption of Advanced Driver Assistance System (ADAS) technology integrated with digital twin for automobile have further boosted the demand for Digital Twin. Government measures such as Digital India initiative, emphasis on self-reliance, classification of digital twins for environmental sustainability are further increasing the demand for digital twins in the country. Many enterprises are adopting digital twins as a cost-effective solution. Moreover, the market is expected to be driven by rising demand for Network Digital Twin (NDT) for 5G in the telecom sector, which enables businesses to progress toward digital transformation and produce new business outcomes by utilizing new digital age

technologies such as the Internet of Things (IoT), cloud computing, and Artificial Intelligence (AI) and thus relying on different software are driving the market. Moreover, the growing demand for data and high bandwidth capacity, especially due to increasing need for risk free environment promotes the development of the digital twin market of India throughout the forecast period.

A digital twin is a virtual representation of an actual system that is capable of simulating, monitoring, analyzing, and continuously improving the real world. Depending on the point of the lifecycle that necessitates it, a product or system may have one or more digital twins. Digital twins are the foundation of the transition, even while technologies such as Artificial Intelligence (AI), the cloud, 5G, and edge computing are important accelerators of this journey. Digital twins enable real-time insights into a virtual environment, which facilitate more accurate data analysis and conclusion-making, boost productivity, and reinforce knowledge. The technology helps in reducing the risk, improving customer satisfaction, improving product quality, saves costs, enhance supply chain agility and resilience and reduces errors in the production stages. India's digital twin industry is expanding rapidly in the age of digitization. Owing to its incredible results, a digital twin technology has recently attracted more and more attention. The growing use cases of digital twin applications in industries such as manufacturing, logistics, service lifecycle management, automotive etc. are enabling the growth of digital twins in the Indian market. The technology is introduced at a time when organizations are transforming how businesses operate, communicate with their customers, and create new products and services.

Rising Demand for Monitoring & Maintenance

The use of digital twin technology to monitor the condition of machines and equipment holds major potential. The rise in demand for real-time tracking and monitoring of equipment or finished products is expected to drive the demand for digital twin technology. Digital twin technology enhances product performance, decreases asset downtime, and speeds up issue diagnosis. The rise of Industry 4.0, which has resulted in fast digitalization across various industries, including healthcare, automotive, manufacturing, and others, is driving the adoption of this technology in machine and equipment health monitoring. For instance, in the rail transportation industry, the technology has helped in switching from traditional to condition-based maintenance. Moreover, this technology can help anticipate high-impact process disruptions using predictive maintenance in the oil and gas industry. Digital Twin technology can track and monitor high-value, fragile goods to diminish loss and damage in the supply chain. In the healthcare sector, real-time monitoring of the vitals can prevent life-threatening

conditions in patients. Therefore, the rising demand for monitoring and maintenance by the Indian companies are driving the growth of Digital Twin in the Indian Market.

Government Initiatives in Digital Twins

Digital Twin is becoming more popular in the market such as 3D data has been massively ramped up in the last couple of years, as a result of the rising use of connected devices among consumers and organizations. In many Tier II and Tier III cities as well as in urban areas, this has resulted in a significant demand for high-definition mapping, necessitating the requirement of digital twins to process information for smart cars, e-commerce, logistics, gaming, utilities planning for next generation networks in telecom, renewable energy and in disaster management and emergency response. Recently, the Government of India's Niti Aayog has launched the Genesys International's digital twin platform for addressing 3D data as well as automated capture of features from 3D street map imagery. Moreover, the government has introduced several programs such as National Digital Twin of India under National Geospatial Policy 2022, Infrastructure Vision 2025, etc. to accelerate the adoption of digital twins in the current infrastructure embarking the contribution toward economic development. Furthermore, the Indian IT ministry intends to provide incentives for data related technology under a national policy framework valued up to USD 1.832 Billion. A draft of the policy states that over the next five years, the government plans to invest up to USD 36 Billion on the ecosystem of data and digital technologies. On announcing the Budget 2022–23, the finance minister gave the digital twin sector technology enabler status. This is expected expedite the growth of digital twins in India during the forecast period.

Need for Environmental Sustainability

While the Digital Twins are fueling India's digital transformation journey, many technology service providers have invested in clean, renewable energy and environmental sustainability sources to run their existing and future facilities as a result of the rising digitalization, power usage and the desire to reduce carbon footprint. Digital twins have a great advantage on improving efficiency, accelerating the adoption of circular transition and providing better tools for improved climate resilience and adaptation. With the use of digital twin, the environmental effect of cities, including their usage of energy, water, and waste management, may be examined and improved. Recently, Indian government has budgeted an additional investment of more than USD 30 billion to produce renewable energy by using sunlight, air, and water. Moreover, the technology can promote sustainability objectives and helps in reducing the city's carbon

impact. Digital twins have facilitated the sectoral transformation of wind energy. Moreover, Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan (PM KUSUM) and Draft National Energy Policy, both call for the Net Zero Emissions by 2070 to be implemented in order to fully use the country's potential for renewable energy. Digital twins and AI/ML algorithms can help simulate the behavior of all mechanical parts, generators, and turbines, etc. The effects of raising the turbine's power rate may be predicted with the use of the digital twin's simulation. The digital twin can aid in understanding performance prior to construction during the planning stage. Furthermore, according to a surveyed report on digital twins by Capgemini Research Institute, more than two-thirds of the organizations in India believe that digital twins will help them achieve environmental sustainability goals, and 85% concur that increasing sustainability is a major motivator for their adoption of digital twins. As the Indian digital twin sector develops, it will become more adaptive and able to integrate green technology though it is still in the early stages of development. Therefore, increasing need for environmental sustainability has led to the growth of digital twin in the Indian market.

Market Segmentation

India Digital Twin Market is divided on the basis of type, technology, application, end user industry. Based on type, the market is further divided into process, product and system. Based on technology, the market is further segmented into Internet of Things, Artificial Intelligence & Machine Learning, Extended Reality, Blockchain, Big Data Analytics, and 5G. Based on application, the market is further divided into manufacturing process planning, product design, predictive maintenance, and others. Based on end user industry, the market is further divided into manufacturing, automobile & transportation, healthcare & lifesciences, aerospace & defence, energy & utilities and others.

Market Players

Major market players in the India Digital Twin market are Pratiti Technologies, Tata Consultancy Services Limited, Ansys Software Pvt. Ltd., Siemens India Private Limited, PTC India Limited, IBM India Private Limited, Microsoft Corporation India Pvt. Ltd., Faclon Labs Private Limited, TwinGrid Labs Private Limited, Cisco Systems, Inc. and among others.

Report Scope:

In this report, the India Digital Twin market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

India Digital Twin Market, By Type:

Process

Product

System

India Digital Twin Market, By Technology:

Internet of Things

Artificial Intelligence & Machine Learning

Extended Reality

Blockchain

Big Data Analytics

5G

India Digital Twin Market, By Application:

Manufacturing Process Planning

Product Design

Predictive Maintenance

Others

India Digital Twin Market, By End-User:

Manufacturing

Automobile & Transportation

Healthcare & Lifesciences

Aerospace & Defence

Energy & Utilities

Others

India Digital Twin Market, By Region:

East India

West India

North India

South India

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the India Digital Twin market.

Available Customizations:

With the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

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Detailed analysis and profiling of additional market players (up to five).

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