AVASANT

Internet of Things Services 2025 Market Insights™

Driving Industry 4.0 transformation and shaping the human-centric vision of Industry 5.0

September 2025

Table of contents

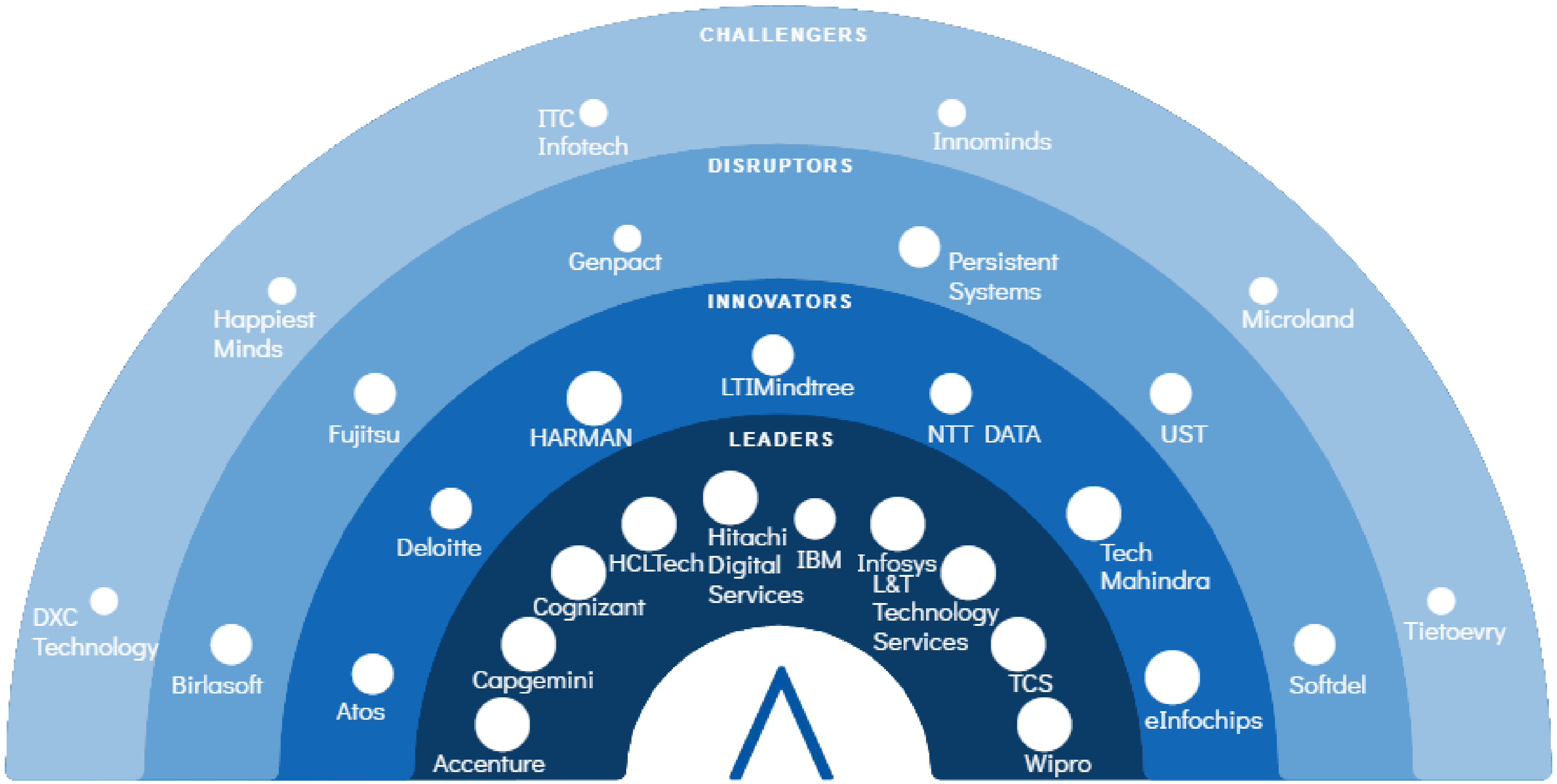
Executive summary

Key drivers	Enterprise response
Industrial IoT scaling into production, powering Industry 4.0 and shaping Industry 5.0	• IoT adoption is scaling across industries, with the industrial IoT as the most prominent segment. It is evolving from Industry 4.0 toward the human-centric, resilient, and sustainable goals of Industry 5.0. • Enterprises are deploying connected machinery, robotics, and digital platforms that integrate IoT with AI and automation, enabling predictive maintenance, safer shop floors, energy optimization, and human–machine collaboration.
AIoT convergence with edge and 5G is enabling real-time, autonomous IoT services	• The shift toward AI convergence is enabling IoT services to deliver real-time insights, autonomous actions, and seamless connectivity through edge and 5G integration. • Enterprises are experiencing early adoption of agentic AI pilots to automate workflows, signaling a shift toward more autonomous IoT services. They are using edge AI with 5G connectivity for anomaly detection, predictive maintenance, and real-time decisions in IoT environments while applying Gen AI to optimize operations.
Scaling IoT deployments and IT-OT convergence are elevating cybersecurity as a critical enterprise priority	• With the expansion of connected devices, IT-OT convergence, rising threats, and regulatory mandates, securing IoT environments is crucial to protecting data, ensuring device reliability, and sustaining critical operations. • Enterprises are embedding security by design with zero-trust architectures, device authentication, and AI-driven monitoring. They are adopting managed security services to detect and respond to threats faster.
Digital twins, powered by IoT and AI, are enabling real-time simulation and optimization across industries	• Enterprises are adopting digital twins to manage operational complexity, simulate supply chain disruptions, test design changes, and model decarbonization pathways before physical execution. • They are combining IoT telemetry with AI analytics, AR/VR interfaces, and digital thread integration to build dynamic simulations for factory optimization, urban mobility, predictive maintenance, and healthcare applications such as patient monitoring and hospital operations.
Focus on human-centric and emotion-aware IoT to deliver adaptive and personalized services	• IoT is becoming human-centric, with devices using AI to interpret voice, facial expressions, and gestures to deliver adaptive, personalized services. • Enterprises are combining IoT sensors with computer vision, natural language processing, and biometric analytics at the edge to detect emotional states in real time. These are integrated with AI models for context interpretation and adaptive responses, enabling applications in vehicles, safety, and consumer devices.

Source: Avasant Research

Avasant recognizes 29 top-tier providers offering IoT services

Practice maturity



Note: Please refer to Avasant's *Internet of Things Services 2025 Ma*

AVASANT

Scaling IoT deployments and IT–OT convergence are elevating cybersecurity as a critical enterprise priority

There is a growing need for cybersecurity assessments across industries. Due to the expansion of connected devices, IT–OT convergence, rising threats, and regulations, enterprises are strengthening IoT security by implementing AI-driven monitoring, adopting zero-trust frameworks, and enhancing device identity and authentication to safeguard connected environments and ensure operational resilience.

***9%** The cyber attacks on botnet/IoT services in FY 2024, compared to 7% in FY 2023

****91%** Enterprises are planning to increase its cybersecurity investment in the next 12-18 months.

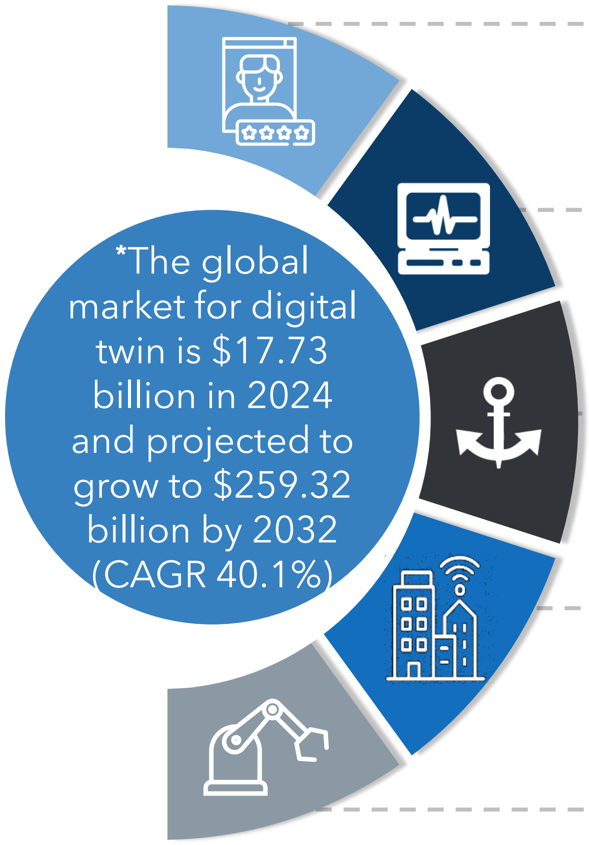
1. **Samsung** enhanced IoT security in its AI-powered home appliances through the Knox Matrix platform. The solution enables cross-device trust using blockchain technology, synchronizes encrypted credentials, supports cross-platform security, and biometric authentication for safer, seamless access. The solution provides protection across the smart home ecosystem.
2. **Church & Dwight** partnered with Rockwell Automation to modernize IT-OT cybersecurity. It leveraged Claroty for continuous monitoring and managed services. The initiative assessed network architecture, asset inventory, and security gaps, which improved visibility, minimized production risks, and strengthened resilience across its global manufacturing operations.
3. **Mitsubishi Electric** announced it would acquire Nozomi Networks, an OT/IoT cybersecurity firm. The acquisition will strengthen Mitsubishi's ability to embed security-by-design into industrial operations, enhancing visibility and faster threat detection as IoT deployments scale.
4. **A global automotive company** modernized its IAM (Identity and Access Management) system by centralizing governance, consolidating identity sources, and standardizing access processes. This transformation improved compliance, enhanced operational efficiency, and improved visibility, which strengthened the company's security foundation for connected systems and digital operations.

A global automotive company

Source: Avasant Research; *Digital Enterprise 5.0: Digital Reac… …ecurity Services 2025 RadarView

Enterprises are adopting digital twins to manage complexity, simulate disruptions, test design changes, and optimize processes across industries

Rising operational complexity and sustainability pressures are driving digital twin adoption. Enterprises are integrating IoT telemetry, AI analytics, and AR/VR to simulate, optimize, and streamline execution before physical execution.



Initiatives	Illustrative examples	Provider
Virtual factory and production simulation	BMW scaled its virtual factory across more than 30 production sites worldwide, creating digital twins powered by NVIDIA Omniverse that integrate building data, equipment data, logistics information, and 3D simulations of manual work processes. It simulates entire production lines, robotics, and human workflows before physical implementation.	BMW GROUP
Predictive healthcare maintenance	GE Healthcare's OnWatch Predict uses AI-powered digital twins and IoT telemetry to monitor MRI machines in real-time, predicting failures before they occur. This proactive maintenance reduces unplanned downtime, improves equipment uptime, and enhances patient care.	GE HealthCare
Supply chain digitization and visibility	Schneider Electric enhances supply chain efficiency through AI-enabled IIoT solutions and digital twin capabilities, providing real-time visibility, predictive maintenance, and automated control towers. The system optimizes inventory tracking, streamlines logistics, reduces manual interventions, and advances sustainability initiatives.	Schneider Electric
Smart city planning and urban development	The city of Aachen developed a 3D urban digital twin that integrates IoT sensor feeds, traffic flows, and infrastructure data to simulate city-wide mobility scenarios, optimize public transport, and reduce congestion. It supports predictive analytics, cross-departmental collaboration, and sustainable, data-driven urban mobility planning.	**The City of Aachen, Germany**
Manufacturing optimization	Airbus uses digital twins integrated with IoT and AI to optimize aerospace manufacturing and operations at its plants. Sensor data enables predictive maintenance and quality control, digital simulations optimize production, refine aerodynamics design, and sustainability outcomes such as improved fuel efficiency and reduced emissions.	AIRBUS

Sources: Avasant Research; *Fortune Business Insights

AVASANT

EMPOWERING BEYOND

GET CONNECTED

www.Avasant.com