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Predictions 2025: Manufacturing

A sector slow to transform faces the future

Manufacturing enterprises are laser-focused on maintaining smooth, safe, and secure operations in their industrial environments. To support these aims, the sector's technology leaders are combining networking, edge, and AI technologies with data from increasingly sophisticated sensors and devices to proactively solve problems, improve worker safety and maximize efficiency.

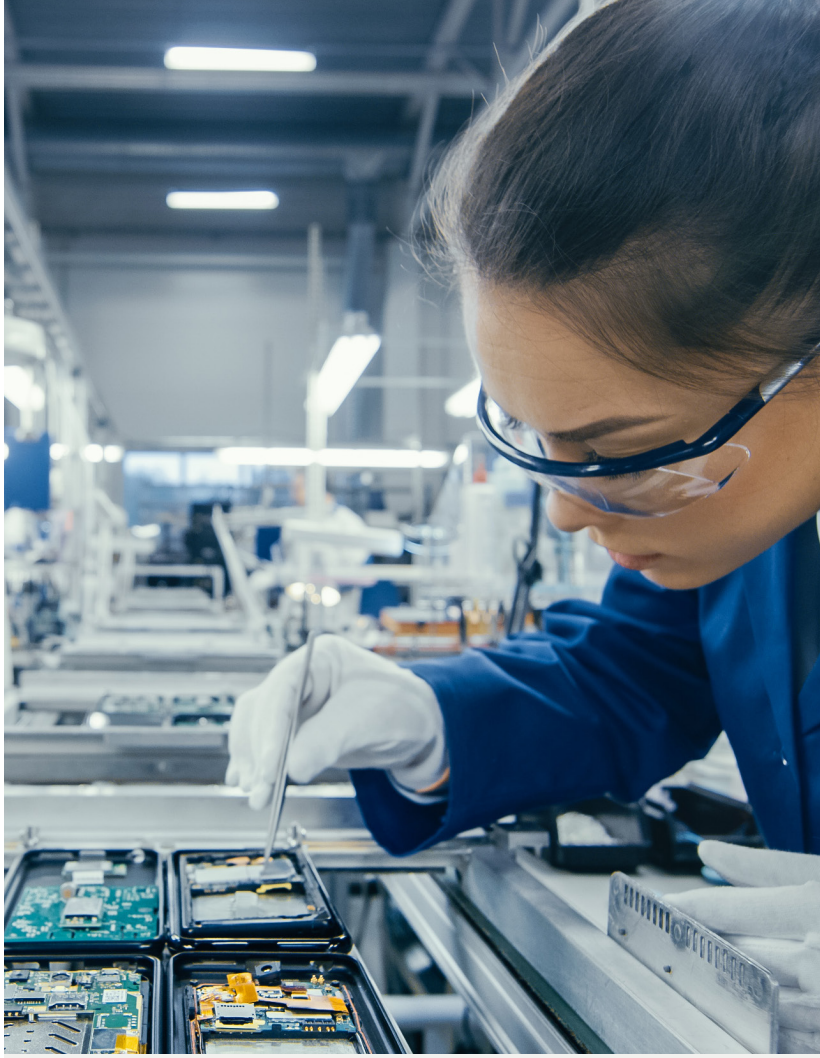
But barriers stand in the way of the sector's transformation. Enterprises rely on a growing number of outdated systems. They face heightened security threats as internet-connected devices proliferate in worksites. And because of the inherent risk in large-scale industrial operations, avoiding costly disruptions and managing safety hazards is imperative. Many manufacturing enterprises have fostered a culture that prioritizes incremental, rather than transformative, change.

The industry lags in modernization: out of six key industries, manufacturing leaders feel least prepared to manage future risks.[1] Companies are struggling to bridge skills gaps, keep pace with change and see business results from their AI investments.

In the coming year, manufacturing enterprises will confront how prepared they are to navigate the future. Manufacturers will need to tackle long-standing challenges around digitization, data integration and security — from the plant floor to the supply chain — before they can fully use and benefit from emerging technologies like generative AI.

Amid technological innovation, geopolitical fractures and a fast-changing regulatory landscape, manufacturing enterprises must balance old and new technologies, as well as ways of working. Technology strategy will be key to accelerating transformation as the sector continues to provide the products and materials that millions of consumers and businesses rely on every day.

[1] *Kyndryl's Readiness Report*, 2024 October



The readiness paradox

88% of leaders in the manufacturing sector are confident that their IT infrastructure is best-in-class.

55% of manufacturing leaders are concerned that their IT tools or processes are outdated or close to end-of-life.

Only **31%** of manufacturing leaders feel their IT infrastructure is completely ready to manage future risks, which is lower than the overall average of **39%**.

2025 outlook

- Enterprises will invest in 5G, Wi-Fi and hybrid networking models to achieve ubiquitous connectivity across manufacturing sites. These fast, reliable and widespread network capabilities will help enable rapid data processing and real-time communication between smart devices. Manufacturers will also be positioned to harness last-mile technologies and edge computing to integrate data, improve analytics and uncover new business insights. Ubiquitous connectivity will be a key digital enabler as the industry prepares to feed data to generative AI technologies — without risking control or security.
- As manufacturing leaders prepare to comply with changing regulations and navigate a growing threat landscape, they will focus on operational security and supply chain traceability. Companies will need to identify security risks caused by ageing systems and equipment to strengthen their operational security. Demands to improve visibility across their supply chains will also drive neglected technology investment around data integration and distributed manufacturing practices to help companies better track and understand risks throughout their supply chain.
- In the coming year, manufacturers will look for opportunities to bridge the divide between the business office and the plant floor. Driven by security concerns, changing budget priorities and the need to pull ahead in a competitive sector, more manufacturers will address data silos between IT and operational technology (OT) — as well as traditional divisions between teams. As Kyndryl's Readiness Report highlights, "Being 'people-ready' is just as important as being 'tech-ready'. IT is everyone's business." As digital ecosystems grow more complex and interconnected, driving close collaboration and alignment between IT and OT leaders will be essential to harmonizing the old and new — from technologies to company cultures and business objectives — and better preparing manufacturers to manage future risks.

Market activity

Using computer vision, Kyndryl worked with a global automotive glass manufacturer to reduce their false rejection rate to under 1%, from 25%. Previously, the automotive glass manufacturer required workers to monitor their existing machine vision system, which slowed production lines and resulted in high rejection rates.[2]

[2] *Seasonal shopping surges jeopardize worker safety. AI can change that*, 2024 August, Kyndryl News

"The integration of operational technology in manufacturing is a new frontier. With more and more IoT devices in networks, the threat landscape expands — and enterprises must be prepared to successfully manage an attack. Every other threat comes in second to security exposure."

— *Jason Jackson, Distinguished Engineer and VP, Manufacturing and Energy Sectors*

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