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AI Trends 2025
Manufacturing & Automotive

AI has catalyzed a wave of rapid innovation—and the pace shows no sign of slowing. Its evolving capabilities will continue to drive a radical transformation in how organizations operate, compete, and innovate in 2025.

To map its impact, Google Cloud analyzed data to identify the top five AI trends reshaping business. Here, Praveen Rao, Global Director, Head of Manufacturing Industry explores what this means for manufacturing & automotive organizations.

Multimodal AI: Unleash the power of context

2025 is a pivotal year for enterprise AI adoption, driven largely by multimodal learning and the contextual awareness it enables.

Multimodal AI mirrors human learning by integrating diverse data sources like images, video, and audio in addition to text-based commands.[1] This unlocks AI's ability to decipher and learn from a much broader range of contextual sources with unprecedented accuracy, producing outputs that are more precise, customized, and tailored, creating an experience that feels natural and intuitive.[2]

> "We expect that manufacturers will focus on using gen AI to proactively address operational efficiency and maintenance needs. By analyzing multimodal sensor data such as text, videos, noise, and vibrations, potential anomalies leading to equipment failures can be identified before they occur, minimizing downtime and maximizing productivity."

Praveen Rao, Global Director, Head of Manufacturing Industry, Google Cloud

[1] MIT Technology Review, Multimodal: AI's new frontier, May 2024
[2] Forbes, Sensing Success: OpenAI, Anthropic And 40+ Others Leverage Multimodal AI, May 2024

AI agents: The evolution from chatbots to multi-agent systems

Customer agents | Employee agents | Creative agents | Data agents | Code agents | Security agents

AI applications have evolved from chatbots into sophisticated AI agents capable of handling complex workflows. These AI agents show reasoning, planning, and memory; and have a level of autonomy to make decisions, learn, and adapt.

Multi-agent systems are the next phase of evolution. They are composed of multiple independent agents that collaborate to achieve a goal or complex workflow beyond the ability of an individual agent.

> We expect code agents will play a greater role in bridging the gap between digital blueprints and the machines that build our world. Using gen AI, manufacturers can convert computer-aided design (CAD) files into computer numerical controlled (CNC) programming code that a CNC machine can read, whether it's a cutting, milling, or turning tool. This can improve productivity and code quality, and reduce barriers to entry for the factory floor workforce."

Praveen Rao, Global Director, Head of Manufacturing Industry, Google Cloud

Assistive search: The next frontier for knowledge work

AI has changed the way the world discovers information, creating a shift from retrieving to creating knowledge.

Advanced AI-powered search technology includes site search, product search, and customer support self-service search.

It is helping organizations enrich and optimize product data catalogs, save significant manual work, and improve conversion and cross-selling efficiency.

Learn more about enterprise search

> To fuel product innovation, we'll see more manufacturers using social media sentiment to pinpoint unmet needs and emerging trends. This will accelerate the design and development of new products that were previously unimaginable, and optimize distribution and inventory strategies in real-time."

Praveen Rao, Global Director, Head of Manufacturing Industry, Google Cloud

Suzano, the world's largest pulp manufacturer and a leader in sustainable bioeconomics, sought to enhance data access through gen AI. To achieve this, they partnered with Google Cloud to develop Vagalúmen, a solution that enables users to find information within Suzano's cloud-based data sources using natural language. **Read more**

AI-powered customer experience: So seamless, it's almost invisible

Today's real-time conversational insights and speech-based customer support features are a stepping stone, not the final destination of AI-powered CX.

This will be reached when companies can combine customer engagement applications and enterprise search to provide customers with precisely what they want: experiences so seamless, personalized, and efficient that issues are resolved without a customer even noticing they have interacted with a company's customer service or support technology.

> "We anticipate a shift from the traditional stock-and-sell sales model to a complex make-to-order sales model. To fuel this shift, manufacturers need to have a robust, real-time view of their operations, unify their IT and OT data, and optimize product design, production, marketing, and customer service."

Praveen Rao, Global Director, Head of Manufacturing Industry, Google Cloud

Alaska Airlines is using gen AI to make planning trips a delightful experience for travelers. Alaska built a gen AI destination search experience — Careline — that helps guests plan their vacations and land the best flight deals with a single prompt. **Watch the video**

Security gets tighter—and tougher—with AI

2025 is a revolutionary year for AI's adoption into security and privacy best practices.

AI has the potential to become a powerful tool in every security professional's toolkit—helping to bolster security defenses, identify and combat threats, relieve manual work, and speed up responses.

Get Mandiant's latest AI-powered threat intelligence insights

> We expect manufacturers to employ AI-powered systems to verify data integrity and detect prompt injection risks, ensuring the authenticity and reliability of data used in training AI-powered robots and machinery. This will involve robust data provenance tracking and anomaly detection to identify inconsistencies and potential risks."

Praveen Rao, Global Director, Head of Manufacturing Industry, Google Cloud

For a deeper dive into these trends, download the full **AI Business Trends 2025 report.**

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