NTT DATA

2026 Global AI Report – Manufacturing and Automotive

A playbook for industry AI leaders

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Contents

Who is leading in AI?

For manufacturing and automotive enterprises, AI leadership is no longer defined by experimentation alone. The organizations pulling ahead are those that use AI deliberately and consistently—implementing AI by domain end-to-end—to strengthen operational performance and resilience. This AI leader approach in manufacturing and automotive translates execution gains into measurable business outcomes.

Overall, the data shows that forward-thinking organizations are moving from early alignment, where AI was treated as a complement to the business plan, to full fusion, where AI is the business plan.

Manufacturing and automotive leaders are those organizations that have:

- Well-defined or in-progress AI strategies
- Mature or evolved AI status, implementing AI both core and non-core functions
- Significantly higher profit realization from AI compared to their peers

Manufacturers and automotive enterprise laggards typically lack well-defined or in-progress AI strategies, rank low in AI maturity with little or no AI implementation plans and realize negative or no profit from AI. These laggards suffer from fragmented efforts, limited operational integration and inconsistent outcomes.

The gap between laggards and leaders is widening as AI becomes more deeply embedded in manufacturing and automotive operations.

How respondents were grouped

Using the same cohort definitions as the 2026 Global AI Report, manufacturing and automotive respondents were analyzed by AI maturity and realized value. Organizations were classified as AI leaders, laggards or all other respondents, based on their reported AI strategy, level of AI adoption and financial outcomes achieved from AI (i.e., increased annual revenue and higher operating profits).

Levels of AI maturity defined

- **No plans:** Have not yet explored usage in our organization
- **Explorer:** Strategies and plans under consideration, but no adoption or capability
- **Novice:** Just starting; limited experience and/or use cases
- **Enabled:** Use is sporadic and somewhat siloed; feasibility pilots and limited adoption by individual business units in mostly noncore functions
- **Mature:** Use is broad and strategic across business units and functions, with strong governance, best practices and scalable workloads
- **Evolved:** Incorporated into core and noncore business functions as well as continuous service delivery; AI-led innovation is accelerating business transformation and advancing business outcomes

How manufacturing and automotive AI leaders stand out

Our data shows that manufacturing and automotive AI leaders are operational outliers within their industries. These leaders stand apart in how effectively they translate AI into execution-at-scale.

Compared with manufacturers and automotive enterprise laggards and all other manufacturing and automotive organizations, AI leaders move faster from pilots to production, invest more decisively and embed AI more deeply into the systems and workflows that run day-to-day operations.

In short, manufacturing and automotive AI leaders:

Organize faster and decisively: **43.2%** of manufacturing and automotive AI leaders say they are ready to move fast and lead the market, compared with **28.3%** of laggards and **34.0%** of all other manufacturing and automotive organizations.

Turn early impact into sustained momentum: **67.6%** of leaders describe their current AI investment as very significant, compared with **43.5%** of laggards and **34.0%** of all others. Leaders are also far more likely to plan significant investment increases over the next two years. **83.8%** of leaders plan to significantly increase investment, compared with **42.8%** of laggards and **39.0%** of all others.

Embed AI into operational systems: **38.6%** of manufacturing and automotive AI leaders report rebuilding applications with embedded AI capabilities, versus **12.0%** of laggards and **17.9%** of all others.

Scale on stronger foundations: Roughly **37.8%** of leaders prioritize scalable and secure technology stacks, compared with **21.0%** of laggards and **30.8%** of all others.

Taken together, these patterns show that leaders in manufacturing and automotive organizations distinguish themselves by how consistently they operationalize AI. They embed AI into core systems, govern it rigorously and scale it responsibly across complex, asset-intensive environments.

9 key characteristics of AI leaders (01-04)

In this playbook, we present nine key characteristics that distinguish manufacturing and automotive AI leaders. Together, they illustrate how these organizations operate and why they are already realizing tangible operational benefits from their AI investments.

Strategy: Manufacturing and automotive AI leaders treat AI as a core operational capability and align it tightly with business and plant-level priorities.

01 Strategic alignment and speed

Manufacturing and automotive AI leaders win by tightly aligning AI initiatives with business and operational strategy and by moving decisively from pilots to production. Strategic clarity and execution speed translate into faster operational impact across plants and value chains.

02 Focused end-to-end approach

Top performers concentrate on high-value manufacturing and automotive domains such as production, quality, maintenance and planning, redesigning workflows end-to-end. AI is embedded directly into operational decision loops rather than layered onto existing processes.

03 Flywheel effect

Manufacturing and automotive AI leaders create a reinforcing cycle where early successes build confidence, justify continued investment and speed up further progress. Impact fuels reinvestment, enabling sustained momentum rather than one-off successes.

04 Core reinvention

Leaders rebuild core operational systems with embedded AI capabilities instead of relying on surface-level add-ons. By integrating AI into production, quality and planning platforms, they enable scalable, repeatable improvement across plants.

9 key characteristics of AI leaders (05-09)

Execution: They differentiate through resilient technology foundations, empowered frontline experts, disciplined adoption, strong governance and trusted partners.

05 Secure at scale

Manufacturing and automotive AI leaders build scalable and secure technology stacks capable of supporting business-critical operations. They localize or relocate AI infrastructure where needed for private or sovereign AI and proactively address infrastructure bottlenecks that would otherwise limit scale.

06 Expert-first AI

These leaders use AI to amplify the impact of experienced engineers, operators and planners rather than replace them. Human-in-the-loop models ensure accountability, safety and trust in environments where operational expertise is essential.

07 Change that sticks

Top performers treat AI adoption as a company-wide operational change program. They invest in enablement, communication and trust-building to ensure AI is embraced on the shopfloor and embedded into day-to-day ways of working.

08 Governed for scale

Manufacturing and automotive AI leaders centralize governance, formalize enterprise-wide oversight and empower dedicated Chief AI Officers (CAIOs) to own AI risk. Governance provides the consistency and control required to scale AI safely across plants and regions.

09 Partner-powered growth

Best-in-class manufacturers and automotive players lean on strategic external partners to accelerate AI value creation. They are open to co-innovation and outcome-based commercial models that align incentives around operational improvement and shared success.

> “What separates manufacturing and automotive leaders from laggards is the discipline to move AI into the core of the operations, where reliability, scale and accountability shape real performance.”
>
> **Prasoon Saxena,** Global Co-Lead of Products Industries, NTT DATA, Inc.

How manufacturing and automotive leaders focus AI on high-value operational workflows

Manufacturing and automotive leaders know that AI experimentation alone does not create industrial advantage. In asset-intensive environments where margins are tight and downtime is costly. Enterprises must apply AI deliberately to the workflows that define operational performance.

That is why leaders concentrate initial AI investment on a small number of high-impact operational domains where value is immediate and measurable. These domains include production planning, quality inspection, predictive maintenance and supply chain execution. Even incremental improvements in these areas can translate into meaningful gains in throughput, cost, reliability and resilience.

What differentiates leaders is how they redesign their organization around AI. Rather than layering AI onto isolated steps, they reconfigure workflows end to end, embedding AI directly into operational decision loops so actions can be taken in real time on the shop floor.

As execution confidence grows, leaders extend AI into adjacent commercial and service workflows. But they sequence this expansion deliberately, stabilizing the core before scaling outward.

This focus is essential in manufacturing and automotive contexts. Without it, AI remains a collection of pilots. With it, AI becomes a repeatable lever for sustained operational advantage across plants and value chains.

The stack: GenAI, agentic AI and enterprise guardrails

The success of AI in manufacturing and automotive environments, encompassing both GenAI and agentic AI, rests on four cornerstones: high-quality data, robust data engineering, powerful computing and scalable infrastructure. Together, these foundations enable AI systems to perform reliably in production settings. Each layer plays a distinct role in supporting scale, resilience and operational trust.

GenAI (the creator): Mainstreamed in recent years, GenAI systems turn manufacturing and automotive data into insights, instructions and recommendations. They support engineering, planning and frontline teams by accelerating analysis, improving knowledge access and raising the baseline for productivity across industrial functions.

Agentic AI (the doer): Agentic AI extends GenAI from insight to action through autonomous, outcome-oriented systems that execute, iterate and optimize in closed loops. In manufacturing and automotive environments, agentic AI enables flexible workflows that respond dynamically to changes in production, supply and operating conditions.

Private, sovereign and sustainable AI (the protector): As industrial AI systems grow more complex and consequential, manufacturers and automotive enterprises seek greater control, reliability and compliance. Private AI protects proprietary operational data and intellectual property. Sovereign AI aligns infrastructure with jurisdictional and regulatory requirements. And sustainable AI balances compute intensity with long-term efficiency and responsibility.

Individually, these layers address specific technical and operational needs. Collectively, they form the backbone of enterprise-grade AI in manufacturing and automotive enterprises. This enables a cohesive, governed architecture capable of supporting business-critical operations.

What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, enterprise-grade AI depends on building a cohesive stack that can support scale, resilience and trust. GenAI, agentic AI and private or sovereign AI each address distinct needs. However, value is realized only when these capabilities are integrated into a governed architecture that aligns with operational realities. Organizations that treat these layers in isolation often struggle to move beyond pilots or sustain performance in production environments.

Strategic alignment and speed

Manufacturing and automotive AI leaders differentiate themselves by aligning AI initiatives with core business and operational priorities. They move decisively from pilots to production, shifting ownership from isolated technology teams to operational leaders.

In asset-intensive manufacturing and automotive environments, alignment shows up most clearly in execution behavior. When business and operational leaders clearly own AI initiatives, organizations are better positioned to act quickly. They can test, learn and scale AI solutions under real production conditions rather than keeping them confined to pilots. Without this ownership shift, AI risks stalling in perpetual experimentation, delivering little operational value.

Among manufacturing and automotive AI leaders, **43.2%** say they aim to 'move fast and lead the market' with AI, compared with **28.3%** of laggards. This emphasis on speed accelerates learning cycles and allows leaders to compound operational gains ahead of slower-moving peers.

Percentage of organizations that aim to 'move fast and lead the market' with AI

Conversely, only **13.5%** of manufacturing and automotive AI leaders report "letting others take the risks first," versus **26.8%** of laggards. Together, these patterns show that leaders prioritize speed, but with discipline. They establish guardrails early and accelerate deployment where their organization can most rapidly realize operational value.

Percentage of organizations willing to 'let others take the risks first' with AI

What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, strategic alignment determines whether AI becomes an operational accelerator or a stalled experiment. Clear ownership by business and operational leaders enables faster learning, disciplined risk-taking and earlier scaling under real production conditions. Organizations that fail to establish this alignment often remain constrained by fragmented decision-making and slower execution.

Focused end-to-end approach

Manufacturing and automotive AI leaders focus on high-value operational domains and redesign workflows end-to-end to unlock disproportionate value. Where workflows remain fragmented, AI impact is typically diluted, limiting improvements to isolated steps rather than system-level performance.

In manufacturing and automotive environments, value creation is concentrated in a relatively small number of core workflows. AI leaders prioritize these domains, such as production planning, quality, maintenance, engineering and supply-chain execution. These improvements translate into measurable gains in productivity and reliability, strengthening cost discipline across plants and value chains.

Rather than applying AI in isolated steps, manufacturing and automotive leaders redesign workflows end-to-end. This approach enables faster decision-making, clearer accountability and near-term operational gains, including measurable lifts in productivity and cost efficiency.

Our data shows that **manufacturing and automotive AI leaders are significantly more likely to apply AI across core operational functions,** rather than confining it to narrow or peripheral use cases. **93.2%** of manufacturing and automotive AI leaders use AI to support back-office and mid-office workflows, such as operations management, planning and engineering, compared with **68.8%** among laggards, who are more likely to apply AI selectively, limiting their ability to drive sustained operational improvement.

Percentage of organizations that use AI to support back-office and mid-office workflows

This emphasis on end-to-end operational workflows reflects a clear understanding of where value is created in manufacturing and automotive organizations and a willingness to invest decisively in those areas.

Once again, manufacturing and automotive AI leaders achieve results not by spreading AI broadly, but by concentrating where it can reshape core workflows and scale across plants and value chains.

What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, the performance gap is increasingly shaped by where AI is applied, not how broadly. Leaders concentrate AI in workflows that determine throughput, quality and reliability, and they redesign those workflows as integrated systems rather than isolated steps. Organizations that disperse AI across disconnected use cases often see localized improvements but fail to shift overall operating performance. The implication is clear: Meaningful AI impact requires a deliberate focus on a small number of end-to-end operational flows that matter most to plant and value-chain outcomes.

Becoming AI-native

The transformation of workflows and processes is central to a manufacturing or automotive organization's journey toward an AI-native operating model. In industrial environments, becoming AI-native is a fundamental shift in how work is planned, executed and continuously improved across plants and value chains.

Where cloud-native architectures emphasize elasticity and scalability, AI-native in manufacturing and automotive enterprises emphasizes adaptability and autonomy. AI-native architectures embed reasoning, feedback and self-correction directly into operational systems. This enables systems to respond dynamically to variability in demand, supply, equipment performance and operating conditions.

An AI-native manufacturing and automotive operating model is one in which decisions, processes and outcomes are increasingly software-defined and agent-enabled. Moreover, humans remain firmly in the loop. To achieve this state requires a coordinated bottom-up redesign of operational workflows across production, quality, maintenance and planning. Clear top-down leadership and executive direction on AI strategy must guide this change.

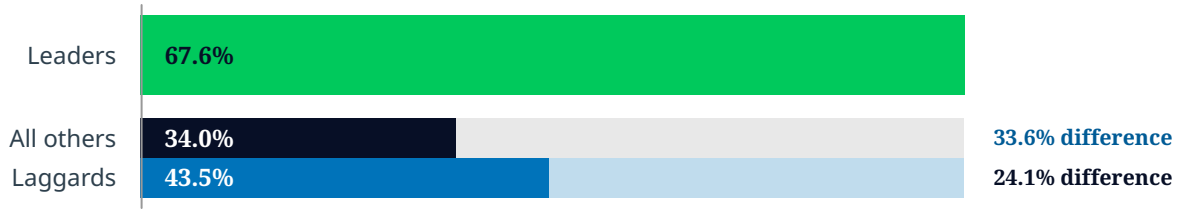
Flywheel effect

Manufacturing and automotive AI leaders create a reinforcing cycle where early operational impact fuels investment and investment speeds up further progress.

Our research shows that, in manufacturing and automotive organizations, the level of investment in AI matters and early success directly drives reinvestment. Leaders are significantly more likely than their peers to describe their AI spending as very significant. This reflects confidence built through repeatable results in production, quality and operations, supported by clearer investment discipline and governance.

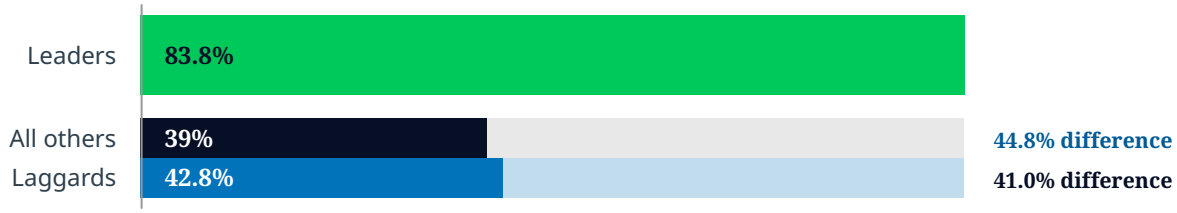
Among manufacturing and automotive AI leaders, **67.6%** report very significant current investment in AI compared with **43.5%** of manufacturing and automotive laggards and **34.0%** of all other manufacturing and automotive organizations. This gap highlights the extent to which leaders are already committing capital and resources to scale AI beyond pilots.

Percentage of organizations that report very significant current investment in AI



Manufacturing and automotive AI leaders are more likely to plan further acceleration: **83.8% say they plan to significantly increase their AI investment over the next two years.** This contrasts with **42.8% of laggards** and **39.0% of all others.** For leaders, reinvestment is driven by results being realized consistently. This creates a reinforcing cycle that widens the execution gap between those able to scale AI and those that remain stuck in pilot projects.

Percentage of organizations that plan to significantly increase their AI investment over the next two years



What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, sustained AI progress depends less on initial ambition than on the ability to convert early results into repeatable investment decisions. Leaders use operational proof points such as improvements in reliability, productivity or decision quality to justify further funding and expansion. Organizations that cannot translate early AI success into disciplined reinvestment often plateau, regardless of technical capability. Over time, this dynamic compounds. It widens the execution gap between organizations that scale AI deliberately and those that remain constrained by cautious or fragmented investment models.

Core reinvention

Manufacturing and automotive leaders rebuild core operational systems with embedded AI rather than relying on surface-level add-ons.

This approach enables scalability, reliability and consistency across plants and value chains. In contrast, organizations that rely on bolt-ons often face fragmented systems, rising technical debt and diminishing returns.

In manufacturing and automotive environments, leaders increasingly recognize a hard truth: Ambitious AI goals cannot be realized if underlying production, planning and operational systems are fragmented, underpowered or difficult to govern. Disconnected tools drive duplicated costs, inconsistent controls and failures under the demands of real-world, high-stakes operations.

Manufacturing and automotive AI leaders address this challenge by embedding AI directly into core systems rather than bolting it onto existing applications. This approach enables scalability, reliability and consistency across plants and value chains.

Our data shows a clear divide in application modernization strategies:

Among manufacturing and automotive AI leaders, **38.6%** report rebuilding core applications with embedded AI. This contrasts sharply with the **12.0%** among laggards and **17.9%** of all other manufacturing and automotive organizations.

Percentage of organizations that report rebuilding core applications with embedded AI

For laggards, augmenting existing applications with AI add-ons or APIs is more common, with **49.1%** relying on this approach, compared with only **36.4%** of leaders.

Percentage of organizations that rely on augmenting existing applications with AI add-ons or APIs

This pattern reflects a strategic choice: Leaders invest in rebuilding the foundations required for scale. Others attempt to extend legacy systems beyond their limits.

Hybrid deployment and co-innovation in manufacturing and automotive

Manufacturing and automotive AI leaders also differentiate themselves through how they deploy AI. Given the complexity of industrial environments, hybrid AI deployment models that combine plug-and-play solutions with targeted co-innovation are the most common approach. **55.4%** of manufacturing and automotive AI leaders report using hybrid AI deployment, compared with **31.9%** of laggards.

Percentage of organizations that report using hybrid AI deployment

Additionally, **nearly half of leaders (47.3%)** pursue bespoke co-innovation solutions with strategic system-integration partners, versus **40.6%** of laggards.

Percentage of organizations that pursue bespoke co-innovation solutions with strategic system-integration partners

These approaches allow leaders to balance speed and standardization with the customization required for plant-specific systems, data and operating constraints.

What this means for manufacturing and automotive organizations

For manufacturing and automotive AI leaders, core reinvention is about operational resilience and scalability. Leaders create an architecture that can support AI at an industrial scale by embedding AI into the systems that run production, planning and quality. Such architectures also combine standardized platforms with selective co-innovation. Laggards often struggle to move beyond bolt-on solutions, limiting both reliability and long-term impact.

At the same time, leaders do not rely on standardization alone. They combine standardized platforms with hybrid deployment models and selective co-innovation, balancing reusable capabilities with targeted customization where plant environments, legacy systems, or equipment requirements demand it. This approach allows them to move quickly without sacrificing integration depth or long-term stability.

Secure at scale

Manufacturing and automotive AI leaders build scalable, secure technology stacks, localize AI infrastructure where needed and invest proactively to remove infrastructure bottlenecks that limit scale.

In manufacturing and automotive environments, AI systems increasingly support business-critical operations. As a result, leaders are more likely to prioritize scalable and secure technology foundations that reduce friction, enable compliance and support reliable deployment across plants and regions.

Our data shows that manufacturing and automotive AI leaders are more likely to prioritize scalable, secure technology stacks. This reflects the operational and risk realities of industrial AI:

37.8% of manufacturing and automotive AI leaders prioritize scalable and secure technology stacks, compared with **21.0%** of laggards and **30.8%** of all other manufacturing and automotive organizations.

Percentage of organizations that prioritize scalable and secure technology stacks

This emphasis reflects an understanding that AI cannot be scaled safely or profitably without strong foundational infrastructure.

What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, scaling AI safely is inseparable from infrastructure choices. As AI systems begin to influence production, quality and compliance, weaknesses in security, resilience or data control quickly become operational risks rather than technical inconveniences. Leaders invest early in foundations that support consistent deployment across plants and regions. Organizations that defer these investments often find that infrastructure constraints, rather than use-case availability, become the primary limiter of AI scale.

The power of a platform in manufacturing and automotive

For manufacturing and automotive AI leaders, platforms play a central role in scaling AI. A resilient, unified AI platform creates a shared fabric where models, agents, data products, guardrails and evaluations coexist.

By defining policies once and enforcing them consistently across data access, model routing, agent behavior, logging and retention, platforms enable governed autonomy in complex industrial environments. Unified observability provides a common lens on latency, cost per inference, model drift, agent outcomes and security events.

The payoff for manufacturing and automotive organizations includes faster onboarding of use cases, reuse across plants, clearer accountability and a shared language across operations, IT, risk and finance.

Sovereignty as operational control in distributed production environments

In manufacturing and automotive, AI operates across plants, suppliers and regions with different regulatory and geopolitical constraints. As AI moves from pilots to production systems, leaders distinguish themselves not only by how they deploy AI, but by how deliberately they govern it across jurisdictions.

Hybrid AI deployment models that combine plug-and-play platforms with targeted co-innovation are the most common approach among leaders. **55.4%** of manufacturing and automotive AI leaders report using hybrid deployment models, compared with **31.9%** of laggards.

More significantly, leaders are substantially more likely to treat cross-geography data privacy and sovereignty as a primary governance concern. **68.9%** of manufacturing and automotive AI leaders flag cross-geography data privacy or sovereignty as a top governance issue, compared with **55.2%** of all others and **45.7%** of laggards.

Percentage of organizations that flag cross-geography data privacy or sovereignty as a top governance concern

What this means for manufacturing and automotive organizations

For organizations operating across multiple geographies, sovereignty directly shapes where and how AI can be deployed in production environments. Leaders increasingly build platform-based architectures that enforce data residency, access controls and governance policies consistently across plants and regions.

Rather than reacting to regulatory or geopolitical constraints after deployment, leaders anticipate them by localizing or restructuring AI infrastructure before scale forces reactive redesign. Organizations that delay sovereignty considerations often encounter compliance bottlenecks, rework and operational friction that slow enterprise-wide adoption.

Sovereign and private AI defined

1

Sovereign AI: The geopolitical response

As global regulations tighten, sovereign AI is emerging as a strategic necessity for manufacturing and automotive organizations that must keep data, computing and operational control within national or regional boundaries. Sovereign AI environments are often mandated by policy, but they also deliver advantages in risk reduction, operational resilience and regulatory compliance.

For multinational manufacturers and automotive enterprises, sovereign AI mirrors the earlier era of private data centers: tailored, compliant and geographically contained. It is particularly relevant in industries where data residency, production continuity, critical infrastructure and local operational control are not negotiable.

2

Private AI: The preference for control

Distinct from sovereignty, private AI reflects organizational priorities rather than political boundaries. In manufacturing and automotive contexts, control is driven by sensitivity such as proprietary production data, intellectual property, regulated operational information or the economics of owning rather than renting infrastructure.

Private AI allows manufacturers and automotive organizations to optimize cost, performance and governance simultaneously, while maintaining tighter control over business-critical systems. It also serves as a gateway to AI-native operating models, where systems are designed from the ground up to absorb variability, resist attack, and scale reliably across shifting market and regulatory landscapes.

Expert-first AI

Manufacturing and automotive AI leaders use AI to augment experienced employees rather than replace them. **26.7%** of manufacturing and automotive AI leaders empower experienced employees with AI tools, allowing them to focus on higher-value strategic work while junior staff handle AI-augmented tasks, compared with **20.0%** of manufacturing and automotive AI laggards.

Percentage of organizations that empower experienced employees with AI tools rather than replace them

Rebalancing talent portfolios in manufacturing and automotive enterprises

As AI adoption progresses, workforce planning in manufacturing and automotive organizations is beginning to reflect three emerging roles:

01 **Augmented employees**
Engineers, operators and planners whose productivity is enhanced by AI tools

02 **Supervisory operators**
Professionals responsible for monitoring, escalation and compliance in AI-supported systems

03 **AI-native professionals**
Specialists in data governance, model evaluation and optimization

This rebalancing reflects a pragmatic approach to AI adoption that prioritizes safety, reliability and institutional knowledge alongside productivity gains.

What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, workforce strategy increasingly determines whether AI strengthens or destabilizes operations. Leaders design AI systems around experienced personnel, using technology to reinforce judgment, consistency and safety in complex environments. Organizations that pursue automation without this anchoring often encounter resistance, quality issues or trust gaps that limit adoption.

At the same time, manufacturing and automotive leaders recognize that even modest differences in how they empower experienced employees with AI tools can influence adoption trajectories and long-term scalability. The lesson is not to slow AI deployment, but to ensure that human expertise remains integral to decision-making loops as systems scale.

> “Automotive leaders create AI value on a foundation of prepared people, intelligent infrastructure and dependable applications. They require transparent leadership accountability for every decision impacting safety, quality, experience or supply.”

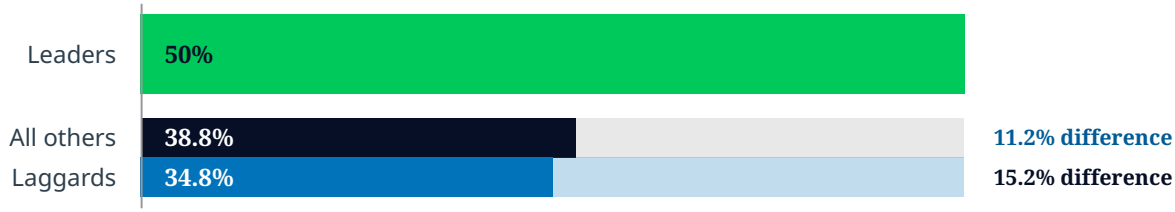
Ralf Malter, Global Automotive leader, NTT DATA, Inc.

Change that sticks

Top-performing manufacturing and automotive organizations treat AI adoption not as an IT rollout, but as an organizational change program. In industrial environments where workflows are tightly coupled with safety, quality and compliance, successful AI deployment requires training, workflow redesign and sustained frontline engagement.

Our data shows that **50%** of manufacturing and automotive AI leaders use effective change management to scope, scale and embed AI into workflows. By contrast, only **34.8%** of laggards and **38.8%** of all other manufacturing and automotive organizations do so. Leaders are more likely to align operational teams early, redesign processes end to end, and make AI part of day-to-day execution rather than a parallel technology initiative.

Percentage of organizations that use effective change management to scope, scale and embed AI into workflows



Workforce sentiment further reinforces this distinction. **83.8%** of manufacturing and automotive AI leaders report positive sentiment toward AI (confident, excited or amazed), compared with **43.5%** of laggards and **67.2%** of all others. In safety-critical and performance-driven environments, that confidence directly influences adoption speed and durability.

For manufacturing and automotive organizations, scaling AI means embedding it into daily operations rather than simply deploying new tools.

Governed for scale

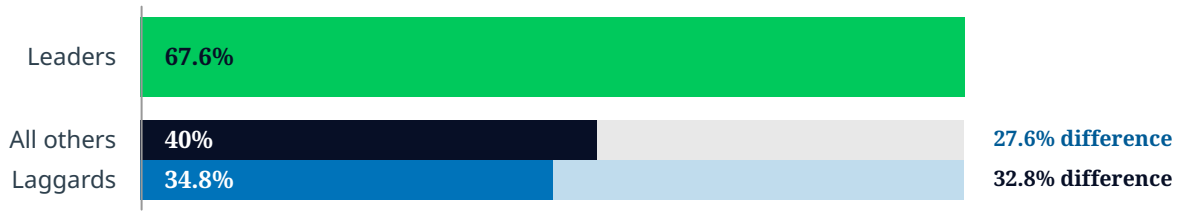
Manufacturing and automotive AI leaders centralize AI governance, formalize enterprise-wide oversight and empower dedicated CAIOs to own risk and align innovation. In the absence of centralized governance, AI initiatives remain fragmented, increasing operational and compliance risk as organizations attempt to scale.

In manufacturing and automotive environments, AI increasingly influences production quality, safety, compliance and operational continuity. As a result, leaders are moving decisively toward governance models that enable consistency, control and scalability across plants, regions and business units.

Our data shows that **manufacturing and automotive AI leaders are far more likely to adopt centralized AI governance models** than laggards.

67.6% of manufacturing and automotive AI leaders report following a centralized AI governance model, compared to only **38.4% of laggards** and **40% of all other manufacturing and automotive organizations.**

Percentage of organizations that report following a centralized AI governance model



Notably, centralized governance is also more prevalent among manufacturing and automotive leaders than among cross-industry AI leaders more broadly **(67.6% vs. 53.3%)**. This likely reflects the operational realities of asset-intensive, safety-critical environments, where AI decisions can directly affect product quality, worker safety and regulatory compliance. These factors make structured oversight a prerequisite for scale.

This shift reinforces a clear pattern: decentralized, ad hoc governance approaches struggle to support AI at industrial scale.

What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, treating AI as an enterprise capability rather than an IT initiative is a prerequisite for scale. Formal governance structures allow decisions about risk, prioritization and deployment to be made once and applied consistently across plants and programs. Organizations that rely on informal or decentralized approaches often duplicate effort and expose themselves to uneven controls, making large-scale deployment harder over time.

> “What separates leaders from laggards is not ambition, but the discipline to operationalize AI where safety, quality and performance intersect.”

Ranjeet Saudagar, Global Manufacturing leader, NTT DATA, Inc.

Keeping AI in check

In manufacturing and automotive organizations, a set of dedicated governance bodies plays a critical role in supporting leadership and steering the enterprise toward responsible AI deployment.

As AI increasingly influences production quality, safety, compliance and operational continuity, manufacturing and automotive leaders rely on formal governance structures to balance innovation with risk control. By standardizing decisions, policies and artifacts, these bodies enable AI to scale across plants and regions without compromising reliability or regulatory compliance.

Key governance bodies commonly established by manufacturing and automotive AI leaders include:

AI governance office: Coordinates AI policies, compliance and audit readiness across plants and functions. This aligns the organization with regulatory, ethical and internal standards.

AI review board: Approves new AI use cases against defined risk taxonomies, reviews evaluation results and mandates mitigation before promotion into production.

Safety and reliability council: Monitors incidents, override and deflection rates, and model or agent drift in production environments.

Operational AI team: Runs evaluation, observability, rollback and routing to ensure AI systems perform safely and consistently at scale.

By putting these structures in place, manufacturing and automotive AI leaders accelerate deployment while maintaining the controls required in safety-critical, asset-intensive environments.

Dedicated leadership and risk ownership

Manufacturing and automotive AI leaders are significantly more likely to formalize accountability for AI at the executive level.

82.4% of manufacturing and automotive AI leaders report having a dedicated CAIO, compared with **68.8%** of laggards and **66.4%** of all other manufacturing and automotive organizations.

Percentage of organizations that report having a dedicated CAIO

27% of manufacturing and automotive AI leaders say their CAIO owns enterprise AI risk, compared with **16.7%** of laggards and **25%** of all others.

Percentage of organizations whose CAIO owns enterprise AI risk

These differences reflect a clear shift toward treating AI risk with the same rigor as operational, safety and compliance risk.

What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, responsible AI is less about constraint and more about operational confidence. Dedicated governance bodies enable faster deployment by reducing uncertainty around safety, compliance and escalation. When these structures are absent, organizations tend to slow deployment to manage perceived risk. AI leaders use governance to enable speed with control, rather than forcing a trade-off between the two.

What the CAIO does

The emergence of the CAIO marks a turning point in manufacturing and automotive leadership. As a board-level strategist responsible for fusing business, operational and technology agendas, the CAIO plays a central role in scaling AI safely and effectively across complex operating environments.

The three core mandates of the CAIO in manufacturing and automotive organizations are:

1. **Strategic orchestration**
   Align AI investments with business outcomes, operational priorities and risk appetite across plants and value chains
2. **Operational integration**
   Embed AI safely into production, quality and planning systems, with strong observability, cost discipline and escalation mechanisms
3. **Cultural translation**
   Demystify AI for boards and executives while helping technical teams understand operational, economic and risk implications

Together, these mandates position the CAIO as a critical enabler of both scale and trust in AI-driven manufacturing and automotive operations.

Partner-powered growth

Manufacturing and automotive AI leaders lean on strategic external collaborators. They are also more open to outcome-based commercial models that accelerate AI value creation. Without these partnerships, many organizations struggle to overcome skills gaps, integration challenges and slower time-to-impact.

To speed AI impact in complex industrial environments, leaders rely more heavily on external partners, including system integrators, technology providers and domain experts. These collaborations help bridge gaps in skills, data and systems integration that are common in manufacturing and automotive organizations.

45.9% of manufacturing and automotive AI leaders focus on external collaborations, compared with **27.5%** of laggards and **36.6%** of all other manufacturing and automotive organizations.

Percentage of organizations that focus on external collaborations

Looking at procurement models, manufacturing and automotive AI leaders are also more open to partnership-centric approaches that align incentives around outcomes.

50.0% of manufacturing and automotive AI leaders prefer revenue-sharing or gain-sharing models, compared with **31.9%** of laggards and **39.8%** of all others.

Percentage of organizations that prefer revenue-sharing or gain-sharing models

These models reflect a willingness to co-create value and share both risk and upside in pursuit of faster, more durable AI outcomes.

What this means for manufacturing and automotive organizations

For manufacturing and automotive organizations, external partnerships increasingly determine how quickly AI moves from concept to operational impact. Leaders use partners to accelerate learning, integrate complex systems and share delivery risk in measurable ways. Organizations that rely solely on internal capabilities often face longer ramp-up times and slower realization of value. Outcome-aligned commercial models further reinforce execution discipline by tying success to operational results rather than activity.

Finding an expert partner for well-governed AI

Most manufacturing and automotive organizations recognize that navigating AI's growing complexity requires expert guidance. As AI becomes deeply embedded in industrial technology stacks, operational workflows and strategic planning, the challenge shifts from experimentation to building durable, production-grade expertise.

For manufacturing and automotive organizations, an expert AI partner brings together models, tools, architectures, governance and sustainability into a coherent program designed for industrial scale, safety and reliability. Responsible-AI principles must be embedded across every layer of design and delivery, from data pipelines to production systems.

Selection criteria for AI service providers that support manufacturing and automotive organizations should include:

01 **Proven lessons learned** from testing and applying AI strategies in their own industrial environments.

02 **Multi-LLM (large language model) and multicloud architectures** to avoid vendor, platform or geographic lock-in.

03 **Deep systems-integration expertise** and recognizing that AI must integrate with manufacturing execution system (MES), enterprise resource planning (ERP), OT and legacy systems to deliver value.

04 **ROI and cost-management frameworks** to support disciplined investment in capital-intensive environments.

05 **Transparent governance of data and models,** including contracts, lineage, retrieval scoping and privacy-by-design.

06 **Clear frameworks for fairness, accountability and human oversight,** particularly in safety-critical use cases.

07 **Security and safety capabilities,** including red teaming, continuous validation and incident-response readiness.

08 **Regulatory knowledge** to translate evolving requirements into enforceable internal standards.

09 **Practical sustainability playbooks** that emphasize energy efficiency and human empowerment.

10 **Ecosystem partnerships** across technology providers, hyperscalers and industrial platforms.

11 **Local expertise** that complements global delivery and reflects the geographic footprint of manufacturing and automotive operations.

AI leadership is now synonymous with manufacturing and automotive leadership

Our global AI research, based on input from more than 2,500 executives and senior leaders, 574 of whom work in manufacturing and automotive, confirms what many manufacturing and automotive executives already recognize: AI has moved from the periphery of operations to the core of value creation. It is no longer simply an enabler of strategy. In manufacturing and automotive organizations, AI strategy is increasingly the strategy.

Manufacturers and automotive companies that treat AI as a core operational engine, rebuilding their foundations accordingly and managing the human implications with intent, are pulling decisively ahead. These organizations align AI and business priorities end-to-end, focus on high-value operational use cases and move decisively from pilots to production. Early operational impact fuels reinvestment, creating a self-reinforcing flywheel that accelerates performance and resilience.

One of the most striking differences among manufacturing and automotive AI leaders is how they are structured. They increasingly operate as AI-native organizations, with redesigned workflows, centralized governance, secure and scalable infrastructure, and augmented rather than displaced expert talent.

Manufacturing and automotive leaders build platforms, not pilots. They embed AI into core production, quality and planning systems rather than bolting it on. They partner deeply, govern rigorously and scale responsibly, reaping the benefits of consistency, safety and repeatability across plants and value chains.

Looking ahead, it is clear that AI will become a foundational operating capability for manufacturing and automotive enterprises. Productivity, margin resilience, risk management and talent effectiveness will increasingly be shaped by how well organizations harness GenAI, agentic AI and private or sovereign AI within resilient industrial architectures.

At the same time, the emergence of a hybrid workforce where humans and AI agents operate side-by-side is no longer theoretical. Manufacturing and automotive leaders must now think about how to hire, train, govern and oversee not only people but also AI systems that participate directly in operational decision-making.

Visit our website to see how NTT DATA can help you chart a path forward with AI.

Explore our cross-industry research data in detail

Our 2026 Global AI Report survey is another milestone in primary research and thought leadership from NTT DATA. Look out for more insights and perspectives based on our findings and contact us to see how our comprehensive global research data, coupled with our consulting and services expertise, can support your organization's success.

About the research

Our primary research spans 35 countries in 5 regions, across 15 industries

A balanced sample of 2,567 global respondents, comprising key decision-makers from large IT (53%) and non-IT (47%) enterprises — mostly in C-suite roles.

North America 575

Canada: **75**

US: **500**

Latin America 300

Argentina: **50**

Brazil: **50**

Chile: **50**

Columbia: **50**

Mexico: **50**

Peru: **50**

Europe 745

Austria: **30**

Belgium: **75**

France: **75**

Germany: **115**

Italy: **75**

Luxembourg: **30**

Netherlands: **75**

Portugal: **50**

Spain: **75**

Switzerland: **30**

UK and Ireland: **115**

Africa 75

South Africa: **75**

Asia Pacific 872

Australia: **112**

China: **50**

Hong Kong: **50**

India: **115**

Indonesia: **50**

Japan: **110**

Malaysia: **50**

New Zealand: **30**

Philippines: **50**

Singapore: **75**

South Korea: **30**

Taiwan: **50**

Thailand: **50**

Vietnam: **50**

The global cross-industry research in numbers

Business functions

CEO | **10%**

CAIO | **4%**

IT | **31%**
(5% software engineers)

IT security | **11%**

Digital | **6%**

Operations | **21%**

Non-IT support | **17%**
(legal/compliance, risk, finance, HR, etc.)

Expertise

IT: **31%**

Operations: **21%**

CEO and/or CAIO: **14%**

IT security: **11%**

Digital: **6%**

Legal, risk and compliance: **6%**

Finance: **5%**

HR: **3%**

Marketing: **3%**

Includes:

Principal decision-maker/part of decision-making team: **94%**

Decision or budget influencer: **6%**

Organization size

2,501 to 5,000: **5%**

5,001 to 10,000: **11%**

10,001 to 15,000: **33%**

15,001 to 50,000: **34%**

50,001+: **17%**

Role levels

C-suite: **79%**

VP/Head of/Director: **15%**

Senior Manager: **6%**

The C-suite includes:

CIO or CTO: **16%**

CEO: **10%**

COO: **8%**

CCO or CXO: **8%**

CDO: **6%**

CISO: **6%**

Chief Risk/Compliance/ Legal Officer: **6%**

CFO: **5%**

CAIO: **4%**

CHRO: **3%**

CMO: **3%**

Chief Software Engineer: **2%**

Other C-suite: **2%**

15 industries

Automotive: **11%**

Banking and investment: **12%**

Consumer packaged goods: **7%**

Energy and utilities: **4%**

Healthcare: **5%**

Higher education and research: **5%**

Insurance: **11%**

Life sciences and pharmaceuticals: **4%**

Logistics, travel and transportation: **5%**

Manufacturing: **11%**

Mining and natural resources (including oil and gas): **7%**

Public sector: **4%**

Retail and ecommerce: **5%**

Supply chain: **4%**

Telco, media and technology: **5%**

Global cross-industry research methodology

All content in our 2026 Global AI Report series is based on independently sourced research data.

Participants were prescreened and then selected via random sampling on the basis that they had a direct or indirect influence on their organization's AI requirements, or decision-making authority in that regard.

The research data was gathered via an online questionnaire that ran in September and October 2025. Primary research fieldwork was conducted for NTT DATA by STRAT7 Jigsaw, an international strategic insight analytics and market intelligence agency with an exclusively senior team.

Data integrity, validation and analysis were performed by NTT DATA's specialist in-house Primary Research and Benchmarking Team. Data and outliers were validated in conjunction with STRAT7 Jigsaw and in accordance with standard research-industry rules, disciplines and best-practice approaches. The complete data set is presented at a **99%** confidence level with a **3%** margin of error.

December 2025

Meet the AI mandate head-on

NTT DATA is one of the world's leading AI and digital infrastructure providers, with unmatched capabilities in enterprise-scale AI, cloud, security, connectivity, data centers and application services.

We are committed to accelerating client success and positively impacting society through responsible innovation. Our full-stack, end-to-end portfolio of AI services and solutions incorporates models, data and platforms, secure ecosystems, and governance, compliance and ethics frameworks.

We curate AI ecosystems for organizations in every industry, and our Smart AI Agent™ Ecosystem matches industry-specific agents to business processes.

With our local expertise and global reach, we are the smart choice for helping you make AI strategy your business strategy and accelerate toward an AI-native state.

Visit nttdata.com to learn more.

NTT DATA is a $30+ billion business and technology services leader in AI and digital infrastructure. We accelerate client success and positively impact society through responsible innovation. As a Global Top Employer, we have experts in more than 70 countries. NTT DATA is part of NTT Group.

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