



tcs **TATA**
CONSULTANCY
SERVICES

Google Cloud

Future-Ready Manufacturing

TCS Physical AI Readiness

Report 2026

From pilots to scale: Building the foundations for future-ready manufacturing





Future-Ready Manufacturing

Partnering in your journey toward a resilient, sustainable, and human-centric manufacturing enterprise.

Table of Contents

01	Executive Summary
02	Current State of Physical AI Adoption
03	Operational Impact and Use Cases
04	Technology and Infrastructure Readiness
05	Workforce Transformation and Skills Development
06	Governance, Autonomy, and Compliance
07	Strategic Priorities and Investment Outlook
08	Conclusion

Foreword

Building the Foundations for Physical AI at Scale

In today's AI-driven world, technology is evolving at remarkable speed. Across global manufacturing hubs, lights-out or dark factories are already operating with minimal human intervention, offering an early view of Physical AI in action. Machines can increasingly sense their environment, adapt to changing conditions and act in real time.

Physical AI is not only about autonomous factories. It can help a vehicle detect a worker in its path and change course, enable a robotic system to identify a defect before more products are affected, or support employees performing hazardous and repetitive tasks. This is intelligence moving beyond the screen and creating value through action.

Our study shows growing momentum for Physical AI as manufacturers strengthen the capabilities needed to scale it across their enterprises.

Key signals from the study

- **77%** → expect significant or transformational impact in warehouse operations
- **60%** → see mitigating labor shortages as a leading opportunity
- **55%** → identify improved worker safety as a key benefit
- **32%** → have progressed beyond experimentation into pilots or active deployment
- **26%** → plan to increase investment, while none plan to reduce it

These findings point to a clear direction. Scaling Physical AI requires more than individual technologies. It depends on trusted data, modern infrastructure, skilled people and clear accountability working together across the enterprise.

TCS' "infrastructure to intelligence" approach positions manufacturers to lead this transformation. By combining advanced AI, robotics, edge intelligence and deep manufacturing expertise, we are moving Physical AI from promising pilots to enterprise-scale value.

The manufacturers that build these foundations today will define the next era of manufacturing—creating more resilient, adaptive and future-ready manufacturing enterprises. I believe these insights provide a clear view of what it will take to scale Physical AI successfully and position your enterprise to lead this transformation.

”



Anupam Singhal
President – Manufacturing,
Tata Consultancy Services





Executive Summary

This TCS report draws on a survey of **300 senior industry leaders** from automotive, aerospace and defense, electronics and high-tech, industrial equipment, and process manufacturing organizations across **North America and Europe**.

Manufacturing is entering a pivotal phase of technological transformation, where **Physical AI** is emerging as a critical enabler of future operational excellence. However, unlike broader digital AI adoption, the sector remains in the early stages of realizing its full potential. The survey reveals a landscape defined by strong ambition but cautious execution.

The defining tension is not between believers and sceptics, but between ambition and readiness. Manufacturers increasingly recognize the potential of machines that can perceive, reason and act in the physical world; far fewer have assembled the foundations required to deploy them repeatedly and safely across operations.

Despite growing strategic importance, adoption is still nascent: **68% of manufacturers are either not deploying Physical AI or remain in experimental phases.** This gap between experimentation and scale is the report's central finding. Physical AI is advancing, but technical feasibility alone is not enough. Integration with operational systems, trusted data, workforce capability and clear governance will determine which pilots become durable business capabilities.

The primary challenges are structural rather than financial. **Legacy system integration, workforce skills gaps, and inadequate data infrastructure** emerge as the most significant barriers to scaling Physical AI. These foundational constraints highlight a critical truth: success in Physical AI is less about acquiring advanced technologies and more about building the organizational and technical ecosystem needed to support them.



At the same time, **governance and compliance gaps are creating new forms of risk exposure**, particularly as Physical AI systems begin to influence real-world operations. Combined with **extended ROI timelines**, these factors are forcing manufacturers to rethink traditional investment models and adopt more patient, long-term value frameworks.

The sector's cautious approach to autonomy reflects its inherent risk sensitivity. Manufacturers are **prioritizing controlled deployment and augmentation over full automation**, with workforce strategies focused more on collaboration than replacement. This reinforces a human-centric adoption model, where Physical AI enhances decision-making rather than displacing it.

Looking ahead, the next three to five years will be decisive. Encouragingly, investment momentum remains strong, with **no manufacturers planning to reduce spending and 26% planning increases**. However, the path to value realization requires a shift in focus—from isolated experimentation to enterprise-wide enablement through infrastructure modernization, governance maturity, and workforce readiness.

The next phase will therefore be defined less by isolated technology trials and more by enterprise enablement. Manufacturers that modernize the surrounding operating environment while testing high-value use cases will be positioned to move faster as the technology matures.

The key insight is clear: **scaling Physical AI is fundamentally an organizational transformation challenge, not just a technological one**. Manufacturers that align technology investments with structural readiness will lead the transition, setting the benchmark for competitiveness in the decade ahead.

“Physical AI is moving manufacturing from digital insight to autonomous real-world action. Through our partnership with TCS, we’re bringing Gemini’s multimodal reasoning to the factory floor, enabling robots and systems to operate safely and intelligently in complex industrial environments.”

Kevin Ichhpurani

President, Global Partner Ecosystem, Google Cloud



Chapter 1: Current State of Physical AI Adoption

Physical AI is attracting attention across manufacturing, but deployment maturity remains uneven. The findings reveal an industry actively testing technology while still working through the operational, technical and organizational requirements needed for scale.

Deployment Levels Across Manufacturing Operations

The manufacturing sector finds itself in the early stages of Physical AI adoption.

45% of manufacturing companies surveyed report no active Physical AI deployments at all. Across all manufacturers surveyed, 23% are running experimental proof-of-concept projects, while 18% have advanced to pilot deployments within a single facility.

How extensively are Physical AI systems — AI-enabled machines capable of perceiving their environment and adapting actions in real time — currently deployed in your manufacturing and logistics operations?

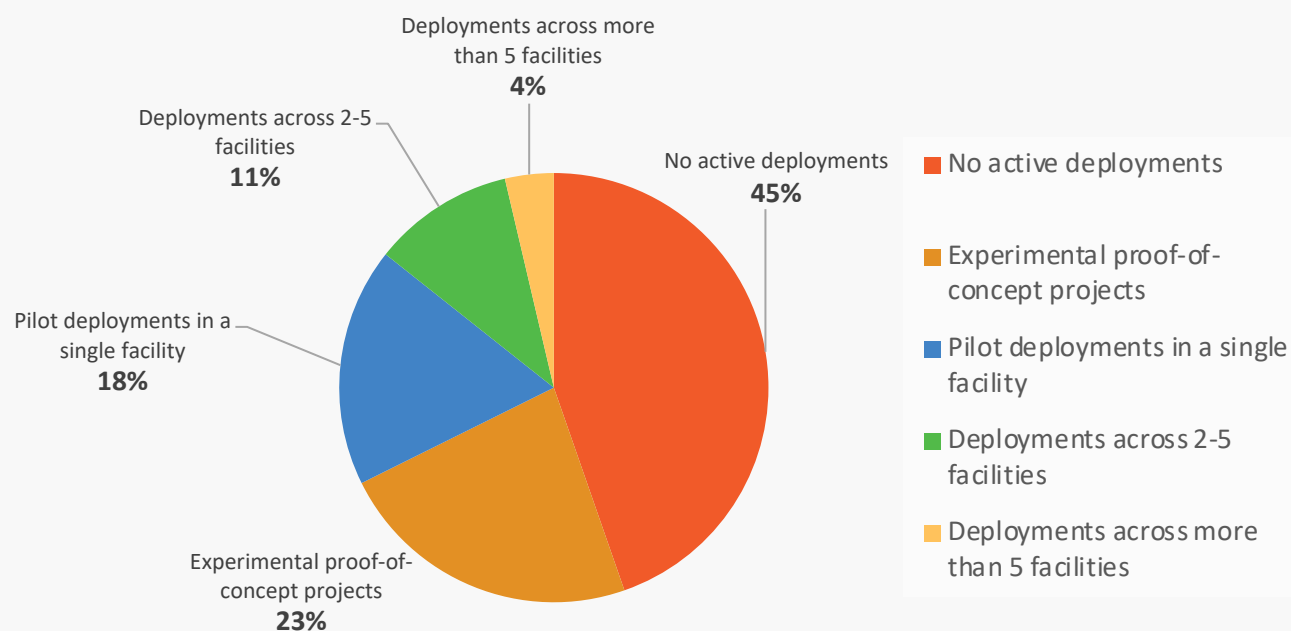


Chart 1

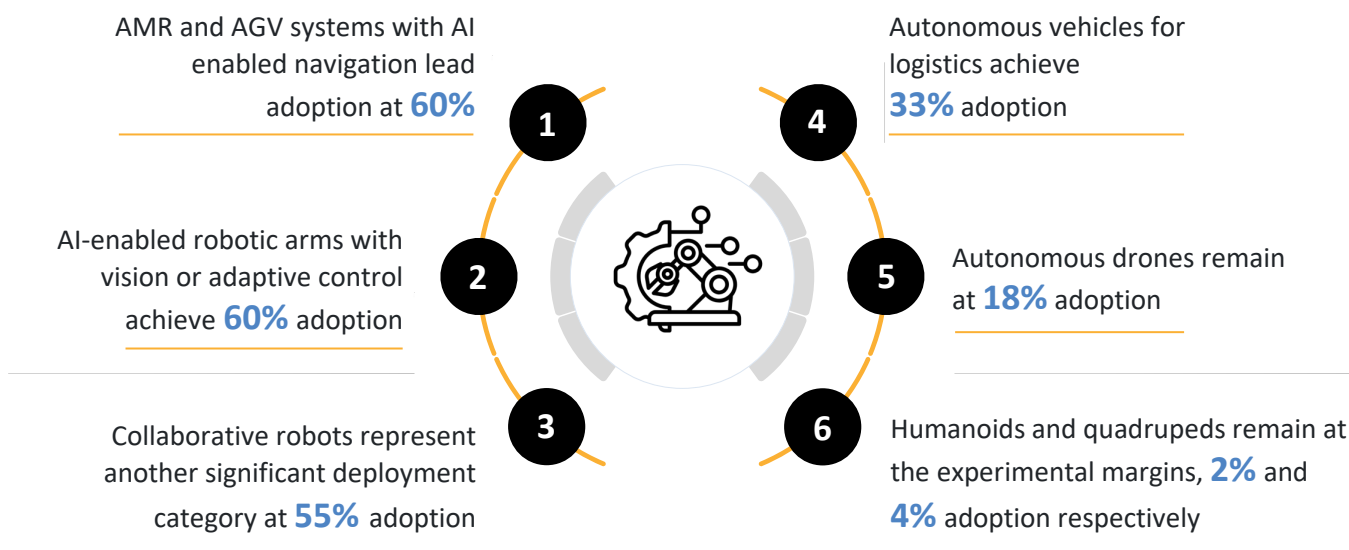
Note: Individual chart percentages are rounded independently. Combined figures are calculated from the underlying respondent counts and may differ by one percentage point from the sum of displayed values.



The scaling challenge becomes evident in subsequent tiers. Only 11% have managed to deploy across 2 to 5 facilities, and 4% have achieved deployments spanning more than 5 facilities. This distribution underscores a fundamental market reality. Over two thirds of manufacturers (68%) remain either non-deploying or still in experimental phases.

Types of Physical AI Systems in Use

Current adoption is concentrated in technologies that address established industrial tasks and can operate within comparatively structured environments. Among the 166 respondents with active deployments:



The pattern is pragmatic. Manufacturers are prioritizing systems with proven use cases and clearer paths to value, while humanoids and quadrupeds remain at the experimental edge. Their broader adoption will depend on continued progress in reliability, dexterity, safety, and economics.





Evaluation pipelines point to a gradual expansion from mobility and material movement into more adaptive forms of automation over the next two to three years.

AMR and AGV systems maintain their leadership at **64%**



AI enabled robotic arms rise to **69%**



Collaborative robots reach **62%**



Autonomous drones jump to **33%**



Planned Physical AI Deployment (Next 2-3 Years)

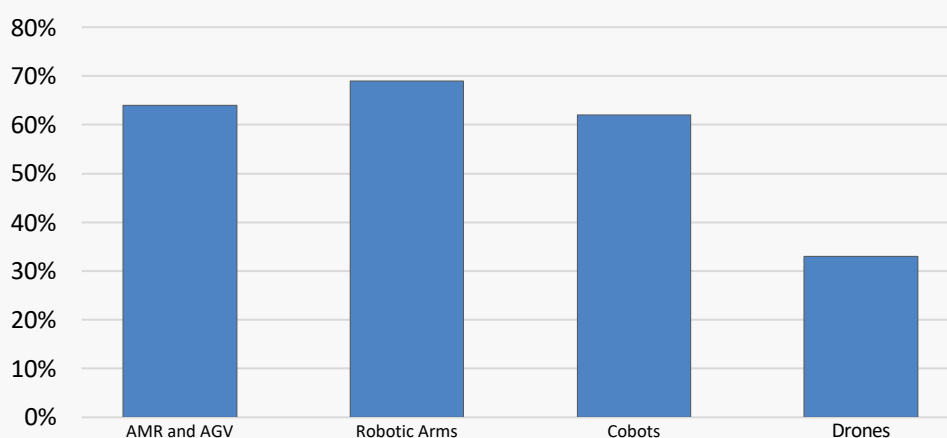


Chart 2

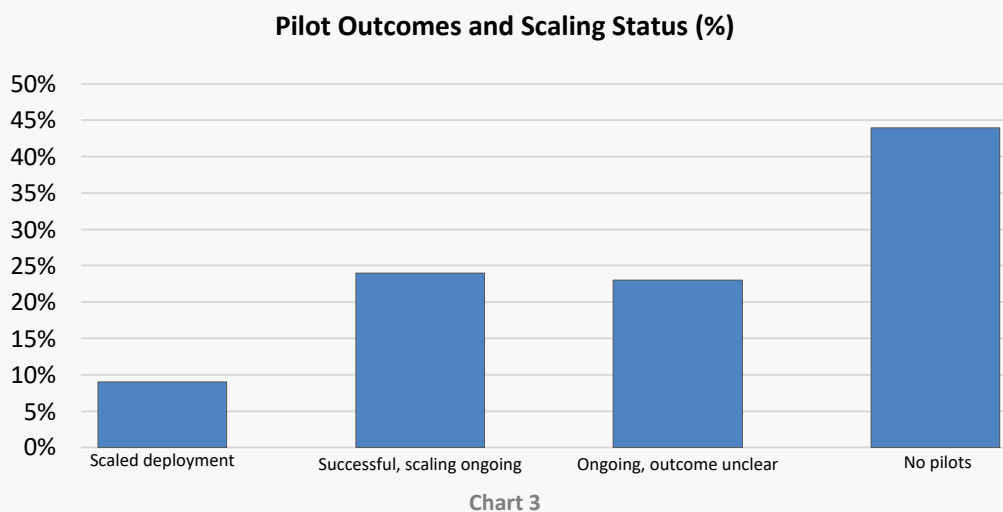
Planned adoption is not the same as deployment readiness. Converting these intentions into operational systems will depend on data accessibility, legacy integration, safety validation and the ability to support new technologies across multiple sites.



Pilot Outcomes and Scaling Challenges

The journey from pilot success to scaled deployment reveals significant challenges.

Only 9% of manufacturers report successfully scaling pilot projects into operational deployments. A larger segment (24%) characterizes their pilots as technically successful but report that scaling efforts remain underway. Nearly a quarter (23%) report pilots that remain ongoing with unclear outcomes. The remaining 44% report no Physical AI pilots.



Technical success is not yet translating reliably into operational scale. Production environments introduce variability, legacy dependencies, safety requirements, and organizational constraints that controlled pilots often avoid. Moving from pilot to value requires production integration, clear operational ownership, safety validation and the ability to replicate deployments across sites.



Chapter 2: Operational Impact and Use Cases

Manufacturers are not approaching Physical AI as a technology in search of a problem. Their priorities are grounded in persistent operational pressures—from labor shortages and worker safety to quality, flexibility and downtime.

Key Challenges Addressed by Physical AI

Manufacturing leaders view Physical AI as a strategic solution to multiple operational challenges

- Labor shortage mitigation emerges as the most widely recognized challenge, cited by 60% of companies
- Improving worker safety in hazardous environments ranks second, identified by 55%
- Enhancing quality consistency and defect detection represents the third major challenge, cited by 49%
- Increasing operational flexibility (36%)
- Reducing downtime through predictive intervention (32%)
- Addressing skills gaps (25%)
- Optimizing energy consumption (24%)
- Accelerating new product introduction (18%)



Key challenges addressed by Physical AI in Manufacturing

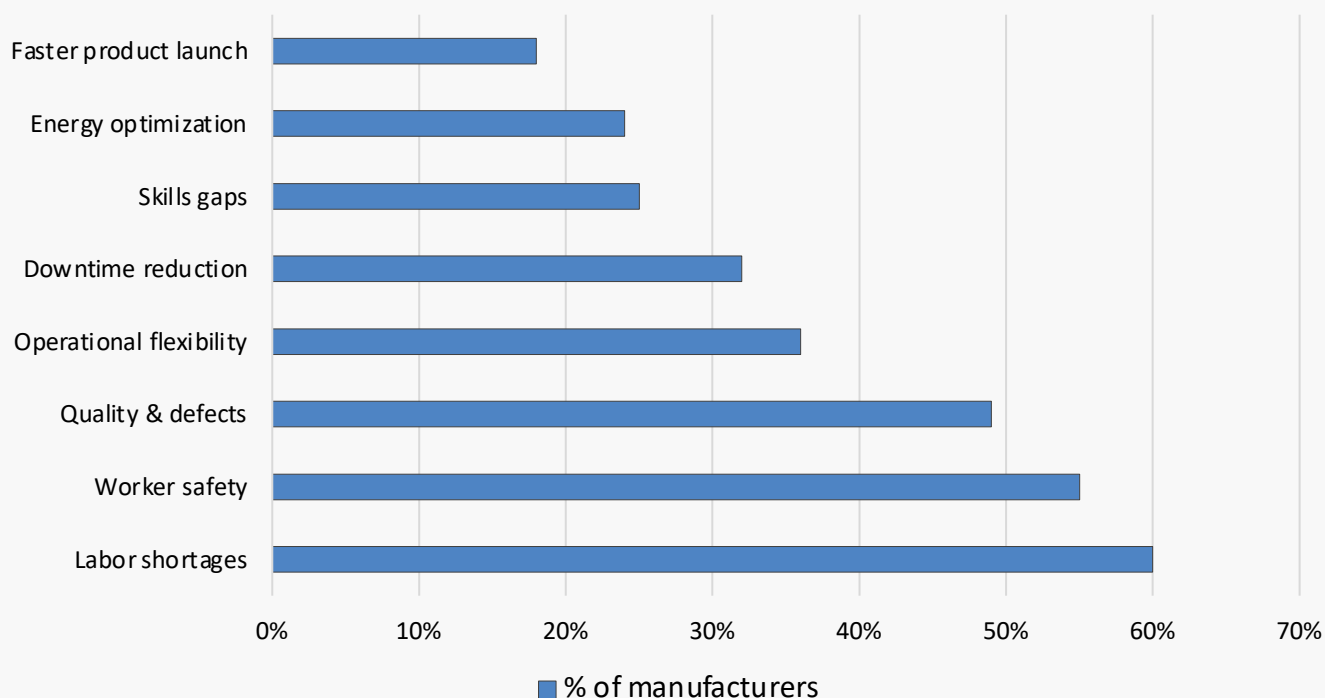


Chart 4

The ranking shows that the strongest near-term value proposition lies in supporting people and strengthening operational resilience. Labor availability and safety rank above energy or speed-to-market benefits, suggesting that manufacturers first expect Physical AI to expand capacity and perform difficult or hazardous work more effectively.

“Mitigating labor shortages and enhancing worker safety—cited by 60% and 55% of manufacturers respectively—are among the most compelling human-centric benefits of Physical AI. At the TCS Physical AI Gemini Center in Troy, we combine Gemini models with the TCS Physical AI Blueprint, robotics, advanced sensing, and edge intelligence. This enables manufacturers to scale high-value use cases across autonomous inspection, quality monitoring, worker safety, and predictive asset health.”

Gaurav Syal

Vice President and Global Head, Google Business, Tata Consultancy Services



High Impact Operational Areas

Physical AI's expected impact varies significantly across operational domains

- » Warehouse operations lead the impact rankings, with 77% of manufacturers anticipating significant or transformational impact
- » Assembly and manufacturing operations follow closely at 75%
- » Logistics and material movement achieve 72% significant or transformational impact expectations
- » Maintenance operations reach 70%, with 211 of 300 manufacturers anticipating significant or transformational impact
- » Quality inspection reaches 67%

Which operational areas are currently seeing or are expected to see the greatest impact from Physical AI deployments overall (across all systems)?

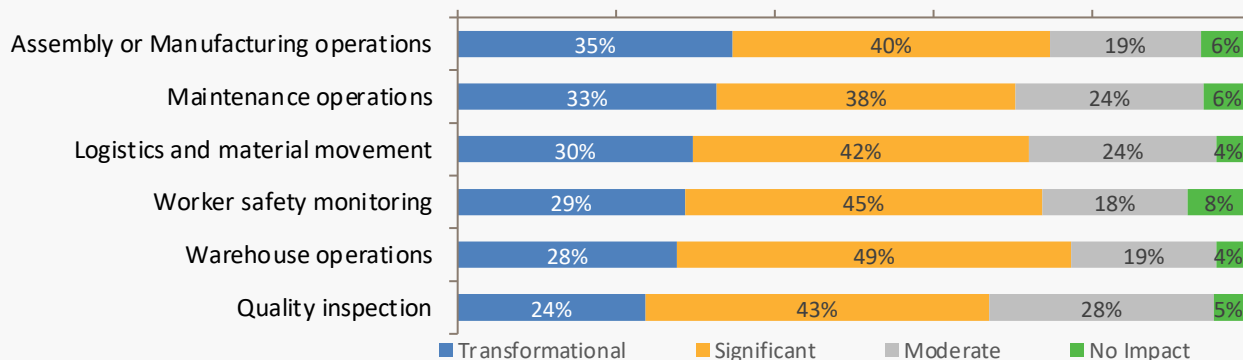


Chart 5

Note: Individual chart percentages are rounded independently. Combined figures are calculated from the underlying respondent counts and may differ by one percentage point from the sum of displayed values.

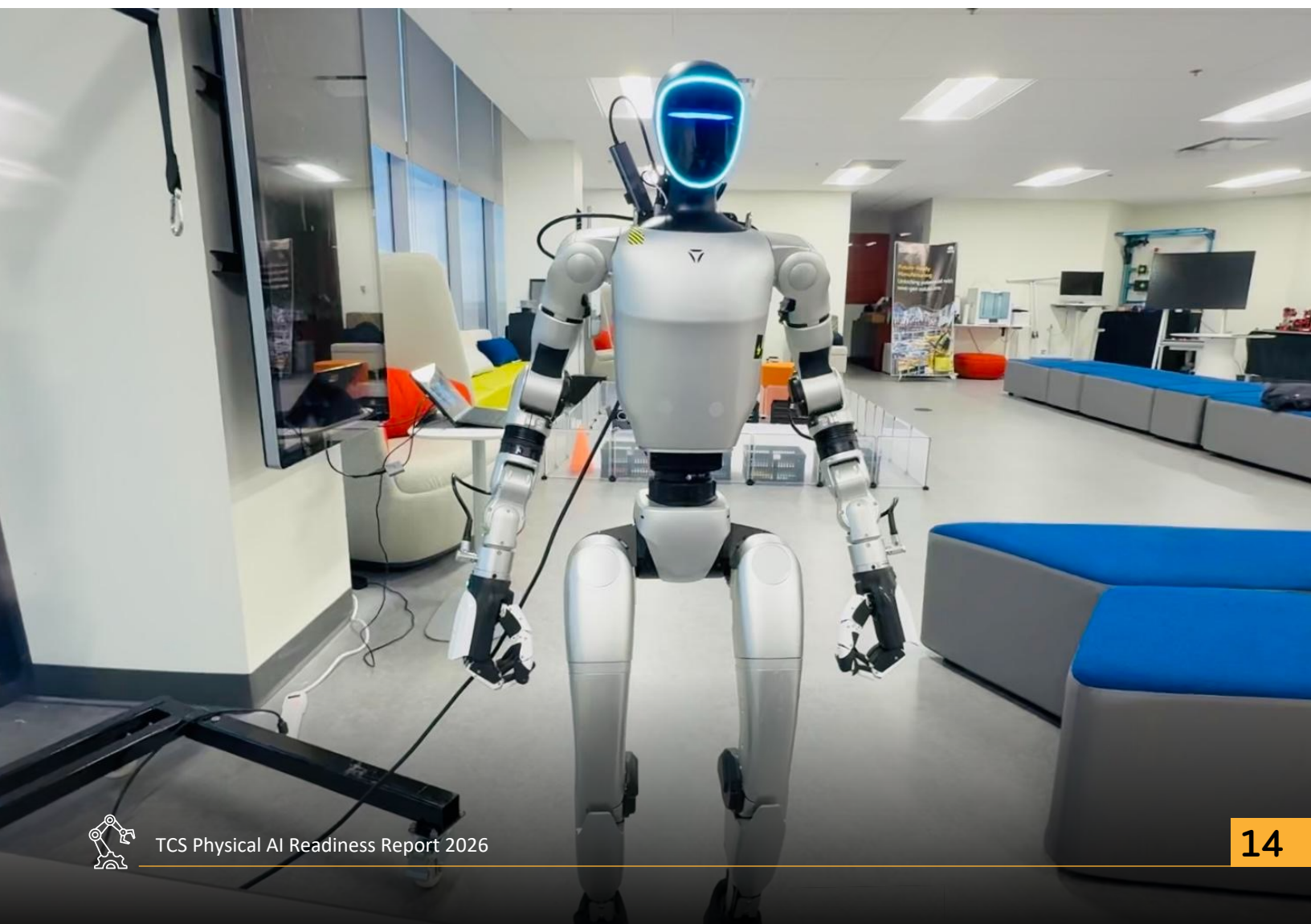
The highest-impact areas share a common characteristic: they involve continuous physical movement, repetitive activity or decisions that benefit from real-time perception. These environments offer practical starting points where manufacturers can connect Physical AI to measurable outcomes in throughput, quality, safety, and asset availability.



Role of Humanoid Robots in Manufacturing

When manufacturers rank operational areas where humanoid robots might prove most useful over the next five years, material handling and logistics support is the leading first-choice use case, selected by 31% of manufacturers. Worker safety and hazardous tasks follow at 25%, while 20% identify quality inspection as their first choice. Assembly assistance is ranked first by 13% and second by 21%.

Expectations for humanoids are therefore practical rather than speculative. Manufacturers see their greatest potential in flexible support roles where a general-purpose form factor could complement conventional automation. Wider deployment will require further advances in safety, reliability, dexterity, and economic viability.

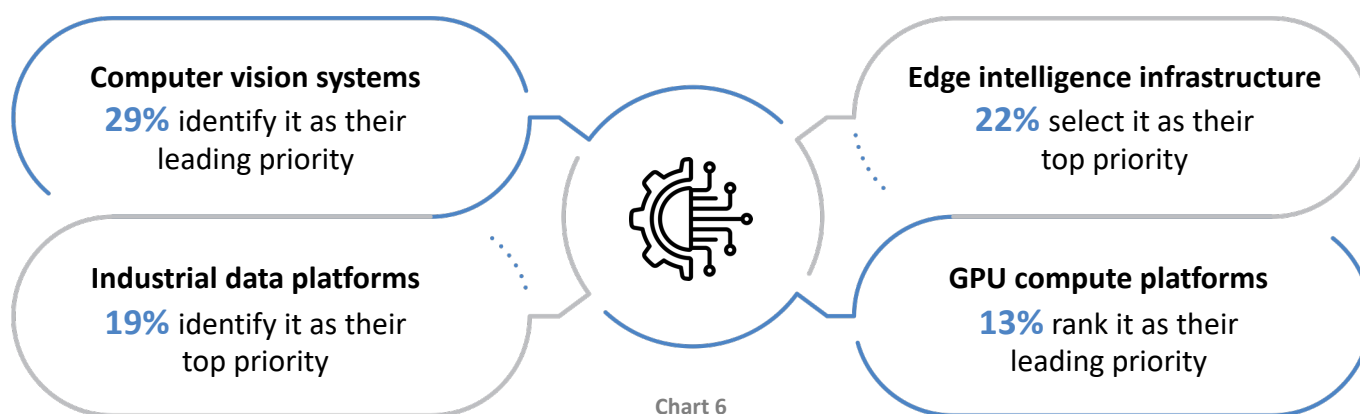


Chapter 3: Technology and Infrastructure Readiness

Physical AI depends on an interconnected technology foundation. Machines must perceive their surroundings, access trusted operational data, process information with low latency and translate decisions into safe physical action.

Critical Technology Capabilities for Scaling Physical AI

When manufacturers rank the technology capabilities most critical for scaling Physical AI, computer vision systems emerge as the leading first-choice capability:



These capabilities should not be treated as separate investments. Vision provides perception, data platforms provide context, edge intelligence enables timely decisions, and compute supports increasingly sophisticated models. Scale will depend on how effectively manufacturers orchestrate these components as a unified architecture.

"The next frontier of industrial intelligence isn't just about analysing data but embodying it. By integrating Gemini's multimodal capabilities with TCS's deep domain expertise, we are transforming static factories into sentient ecosystems where machines don't just follow scripts—they perceive, learn, and act."

Praveen Rao

Industry Head – Manufacturing, Google Cloud



Data Integration and Accessibility in Manufacturing

Physical AI systems rely on high-quality, contextual manufacturing data, yet the survey shows this foundation remains incomplete across much of the industry.

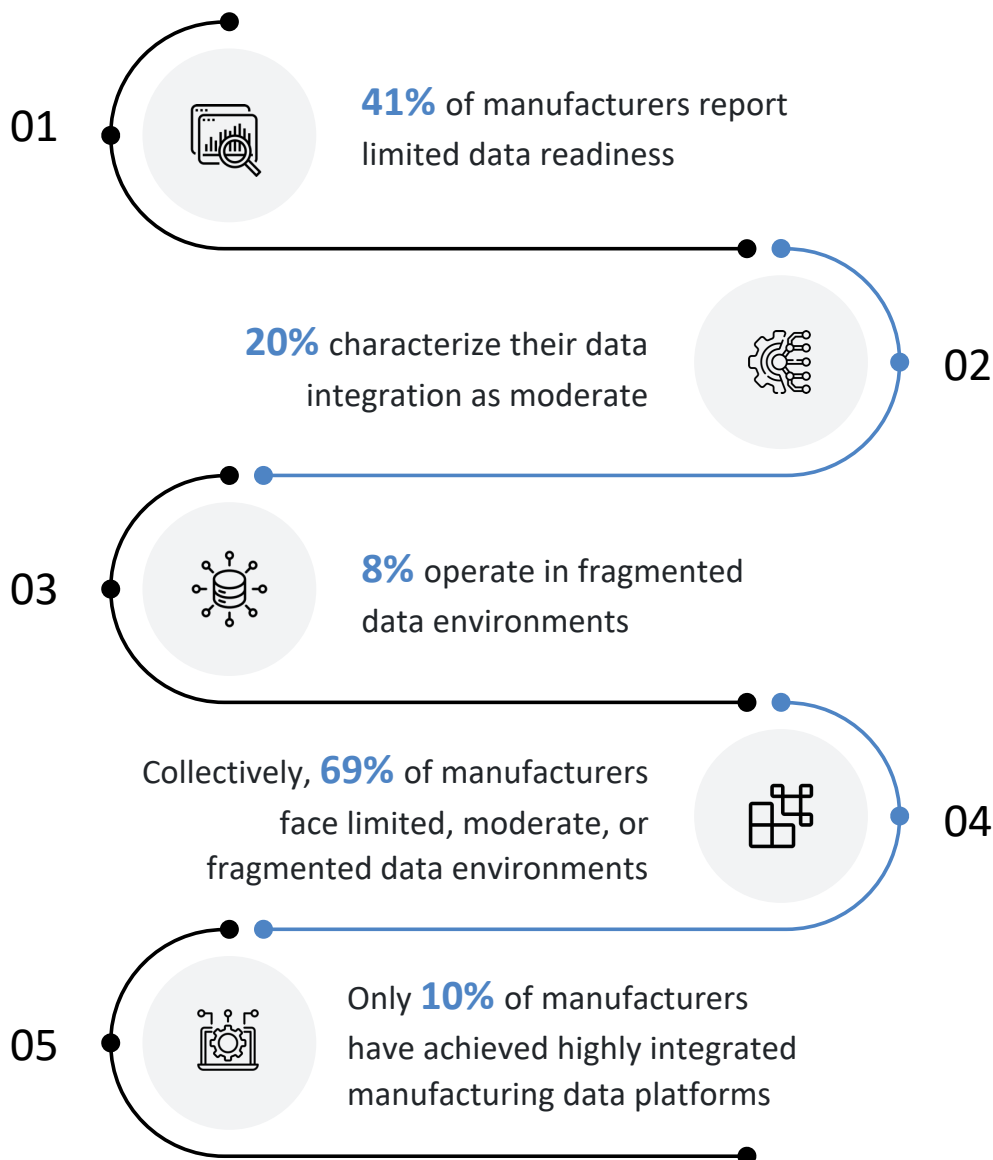


Chart 7

Fragmented data limits more than model performance. It prevents systems from understanding conditions across machines, production lines and facilities, making consistent enterprise-scale operation difficult. Data modernization is therefore a prerequisite for scaling Physical AI—not a parallel initiative.



Barriers to Scaling Physical AI

When asked to identify their single biggest barrier to scaling, manufacturers point to several key constraints:

- » Legacy system integration: 32% (most significant constraint)
- » Workforce skills gaps: 25%
- » Data infrastructure readiness: 19%
- » Identification of appropriate use cases: 11%
- » Edge intelligence infrastructure limitations: 7%
- » Investment constraints: 4%

Which ONE of the following represents the biggest barrier to scaling Physical AI deployments?

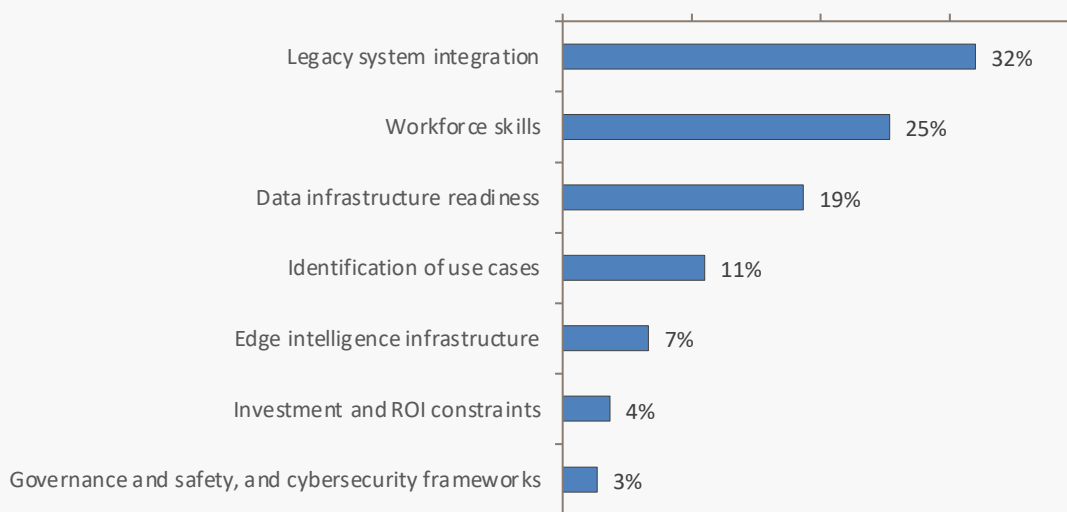


Chart 8

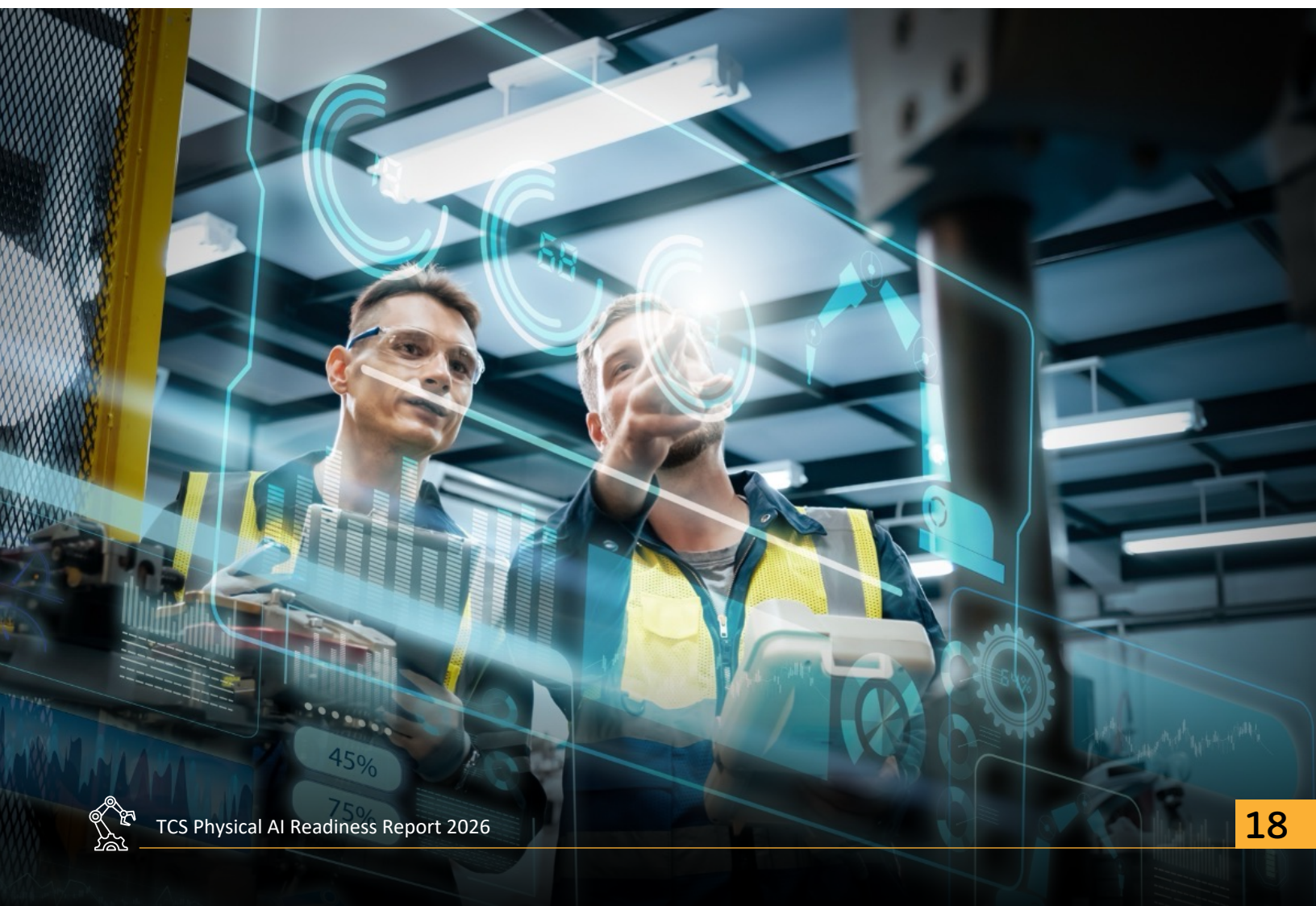
Legacy system integration is the most significant barrier to scaling Physical AI, cited by 32% of manufacturers, followed by workforce skills at 25% and data infrastructure readiness at 19%. The findings highlight the importance of connecting Physical AI with existing OT and IT environments, workforce capabilities and trusted data foundations.



The workforce dimension reinforces this challenge. When manufacturers assess how skill availability affects scaling:

- 15% face critical barriers
- 32% encounter significant constraints
- 40% experience moderate constraints
- This reveals that 87% of manufacturers face moderate to critical constraints in scaling Physical AI

With 87% experiencing at least moderate workforce-related constraints, skills readiness is the norm rather than an exception. Manufacturers should assess capability gaps before pilots begin and build multidisciplinary teams that can connect engineering, operations, data, and AI.



Chapter 4: Workforce Transformation and Skills Development

The workforce implications of Physical AI are more nuanced than a simple automation-versus-jobs debate. Manufacturers largely expect the technology to reshape how work is performed, with people increasingly supervising, collaborating with and making decisions alongside intelligent machines.

Impact of Physical AI on Workforce Size and Roles

Manufacturers hold nuanced views about how Physical AI will reshape workforce dynamics. Regarding workforce augmentation, 42% anticipate significant augmentation, while 29% expect moderate augmentation.

However, when the question shifts to workforce size, 39% expect minimal reduction through attrition, while 24% anticipate moderate impact with noticeable reductions. Notably, 30% expect no net change in workforce size, anticipating redeployment and retraining rather than headcount reduction.

The findings point toward augmentation rather than immediate large-scale displacement. While some roles may decline through attrition, new responsibilities will emerge around supervision, exception management, maintenance, safety, and optimization. Workforce planning must therefore address both job redesign and reskilling.



Skills Critical for Physical AI-Enabled Factories

The skills manufacturers identify as most critical for Physical AI enabled operations:

- OT/IT integration and cybersecurity: 68% (most widely recognized need)
- Data engineering: 59%
- AI and machine learning expertise: 54%
- Industrial automation expertise: 50%
- Robotics engineering: 44%

Physical AI requires capabilities that cross traditional organizational boundaries. The most important skills reflect the need to connect digital intelligence with physical operations.

Which skills will be critical in Physical AI-enabled factories?

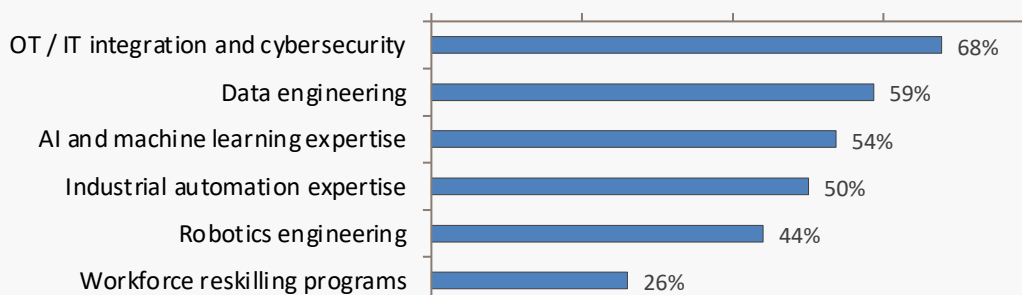


Chart 9

The emphasis on OT/IT integration and cybersecurity is particularly significant. Manufacturers need professionals who understand both industrial operations and digital systems—not isolated AI specialists. Yet only 26% identify workforce-reskilling programs as critical, suggesting that organizations may be underestimating the structured learning and change management required.



Chapter 5: Governance, Autonomy, and Compliance

As AI moves from generating recommendations to taking action in physical environments, governance becomes an operational requirement. Decisions involving machinery, workers, products, and production processes require clearly defined accountability, safeguards, and escalation paths.

Accountability Structures for Physical AI Failures

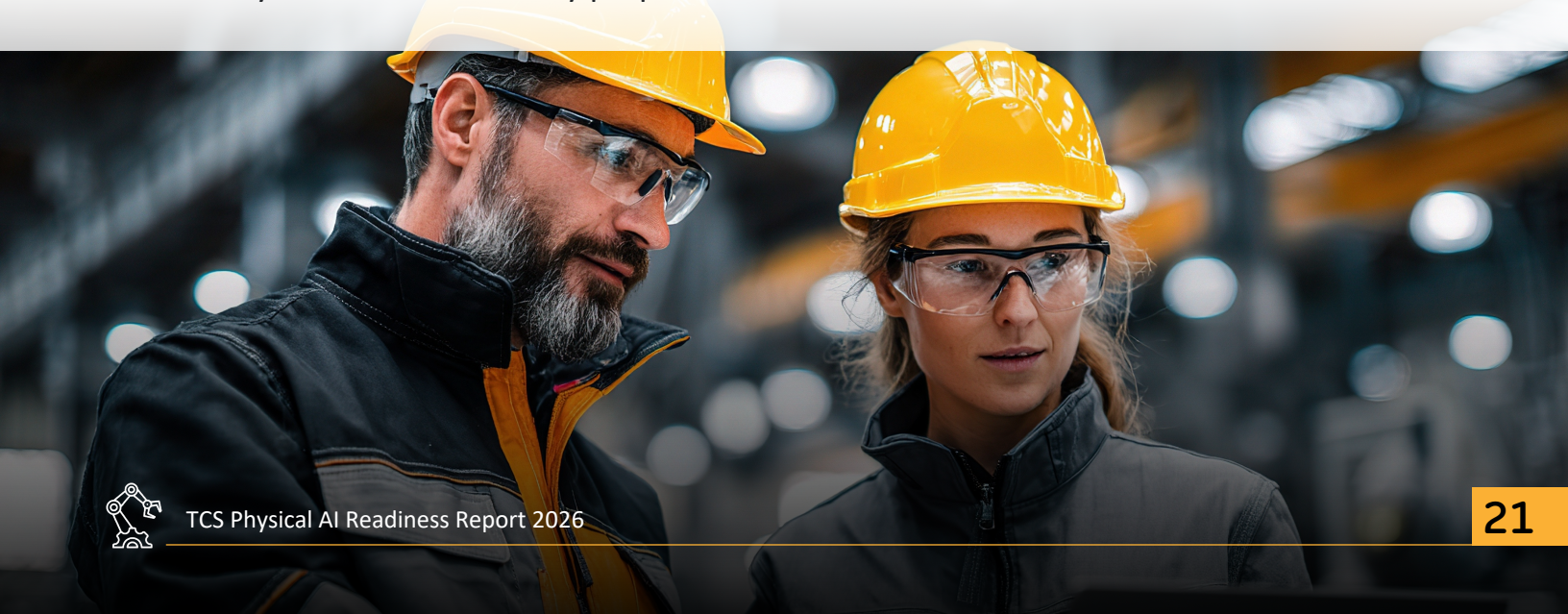
44% report that no formal accountability structure exists and roles are undefined. A further 17% describe accountability as only slightly clear and 11% as somewhat clear. **Only 29% describe accountability as mostly or very clear.**

Ambiguous accountability can become a direct barrier to deployment. Manufacturers must define responsibility for system design, operational approval, monitoring, incident response, and decisions made under different levels of autonomy.

Preparedness for Regulatory and Compliance Requirements

Manufacturers demonstrate unpreparedness for emerging regulations:

- » 40% acknowledge they are not prepared for regulatory requirements
- » 18% are unsure of their preparedness status
- » 16% describe themselves as partially prepared
- » 15% are in early stages of preparation
- » Only 12% claim to be fully prepared





How prepared is your organization for emerging regulatory and compliance requirements related to autonomous systems in industrial environments?

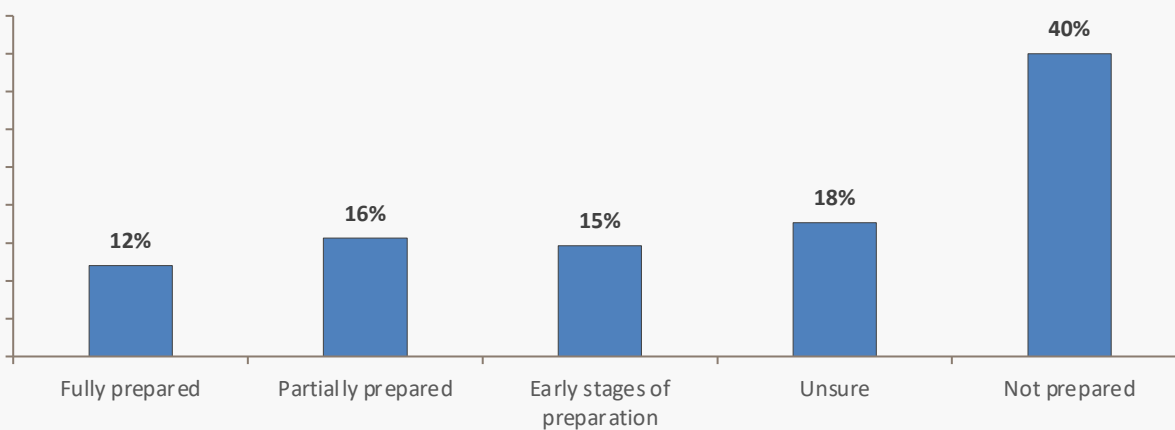


Chart 10

The preparedness gap is especially concerning because regulatory, safety and operational requirements must be incorporated during system design—not addressed after deployment. Organizations that establish governance frameworks early will be better positioned to scale without creating unacceptable risk.

Levels of Autonomy in Current Deployments

Current Physical AI deployments reflect conservative approaches to autonomy.

The survey reveals that 47% have not deployed Physical AI in live manufacturing environments. Across all respondents, 27% operate semi-autonomous systems with periodic human oversight, while 19% use AI-assisted systems requiring continuous human control. Only 5% report fully autonomous systems for defined tasks, and 3% operate mostly autonomous systems with limited oversight.

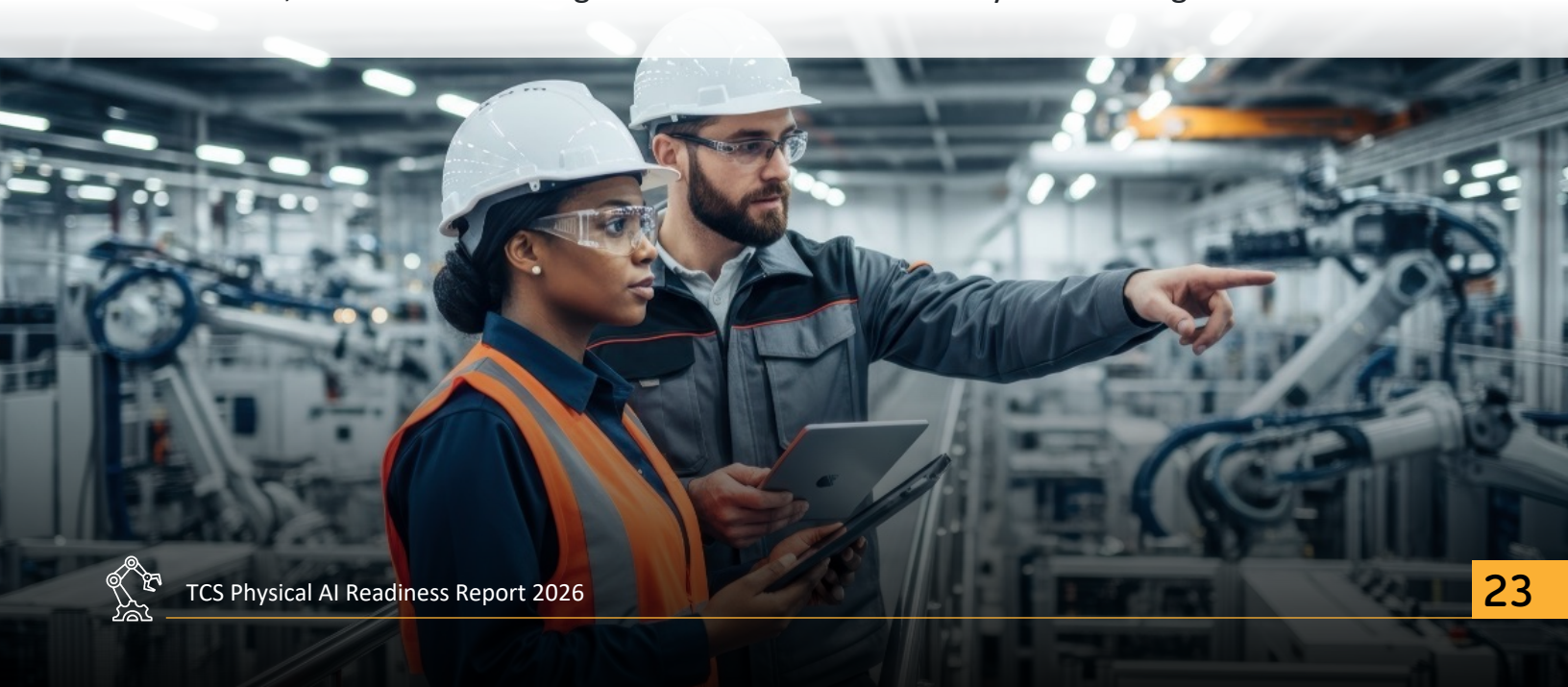
“Physical AI is a continuous loop of perception, reasoning, decision, and action. When this loop is engineered into how industrial systems sense conditions, analyse context, and execute decisions, autonomy becomes safe and scalable. Organizations that embed this flow across machines, systems, and people are turning Physical AI into real operational advantage.”



Sreenivasa Chakravarti

VP & Global Head - Industrial Autonomy & Engineering, TCS

This conservative posture is consistent with manufacturing’s safety and reliability requirements. Near-term adoption is likely to favor bounded autonomy: systems operating independently within clearly defined tasks, conditions and escalation thresholds, with human oversight retained where variability or risk is high.



Chapter 6: Strategic Priorities and Investment Outlook

Physical AI spans operations, engineering, technology, data, and risk. Its cross-functional nature makes clear ownership essential—but the final data shows that responsibility still sits predominantly within individual functions.

Ownership of Physical AI Strategy

The survey shows where responsibility for Physical AI currently sits:

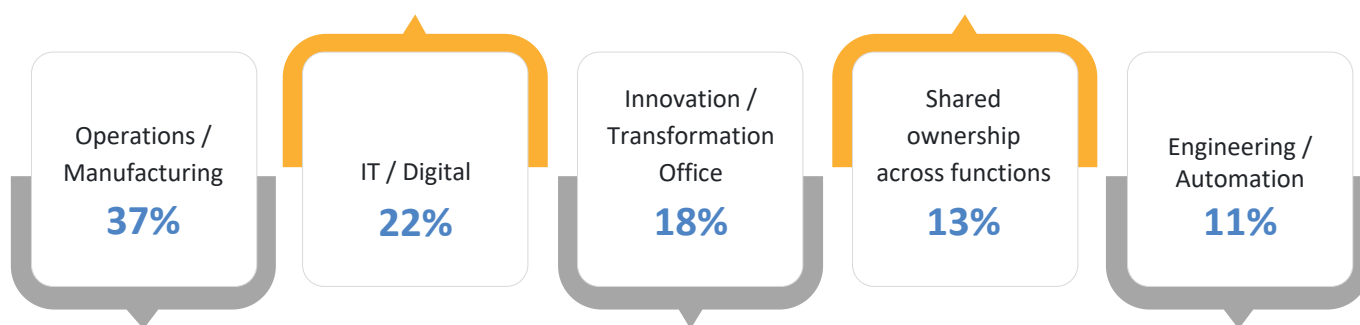


Chart 11

Operations and manufacturing functions lead ownership of Physical AI strategy and deployment at 37%, followed by IT and digital at 22% and innovation and transformation offices at 18%. Only 13% report shared ownership, underscoring the need for stronger cross-functional coordination as adoption scales.

Importance of Physical AI in Manufacturing Strategy

Nearly two-thirds of manufacturers (64%) have already placed Physical AI on their strategic agenda, either as a core initiative or an emerging priority.

The findings reveal a market divided between active strategic commitment and continued exploration. For many manufacturers, the immediate task is not enterprise-wide deployment but establishing credible use cases and the readiness required to move Physical AI onto the strategic agenda.

Investment Trends and Expected Financial Impact

Investment intentions indicate continued interest without suggesting universal acceleration. Most manufacturers are either maintaining current levels or are not yet ready to determine the scale of future spending.

- 39% indicate it's too early to determine future investment levels
- 35% plan to maintain current investment levels
- 19% plan moderate increases of 1 to 10%
- 7% plan significant increases exceeding 10%
- Notably, no companies plan to reduce investment

Regarding ROI expectations

- 46% expect returns beyond five years
- 23% anticipate returns within 3 to 5 years
- 14% face uncertain financial impact
- 12% expect returns within 1 to 2 years
- 6% report already seeing measurable returns
- Overall, 205 of 300 manufacturers—or 68%—expect Physical AI deployments to take at least three years to deliver measurable financial returns

Note: Individual chart percentages are rounded independently. Combined figures are calculated from the underlying respondent counts and may differ by one percentage point from the sum of displayed values.





When do you expect Physical AI deployments to deliver measurable financial impact in manufacturing operations?

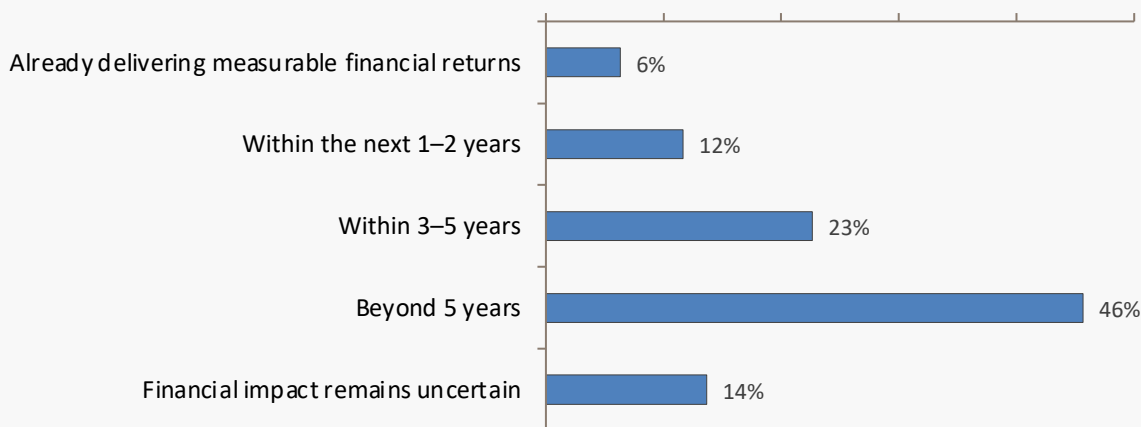


Chart 12

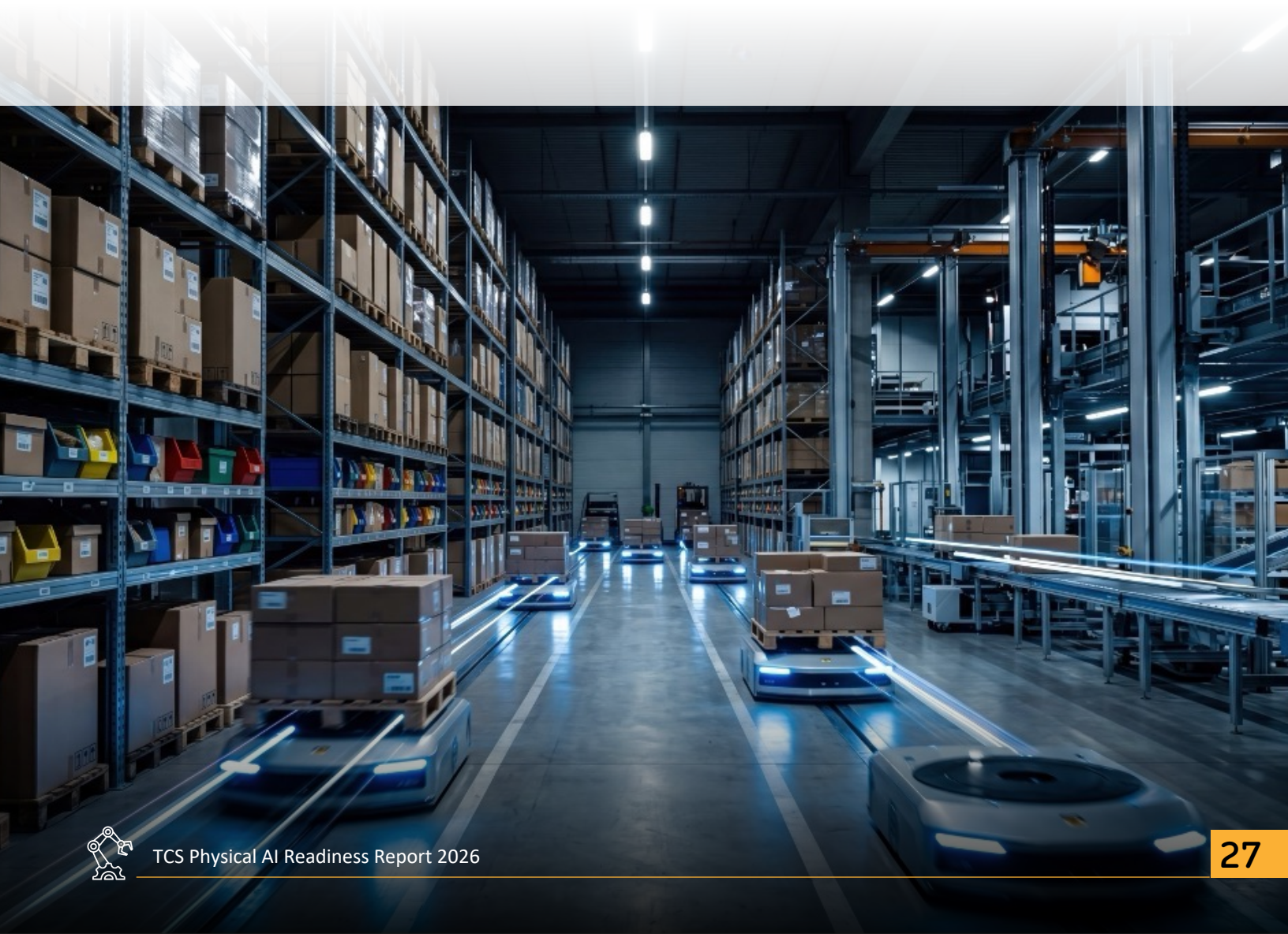
The long value-realization horizon calls for broader investment models. Manufacturers will need to capture benefits beyond immediate cost savings—including safety, flexibility, quality, resilience, and faster operational decision-making—while maintaining discipline around measurable outcomes.

Timeline for Widespread Deployment

Industry expectations vary widely regarding mainstream adoption timing.

The largest segment (32%) remains uncertain about timing. Of all manufacturers surveyed, 25% anticipate mainstream adoption within 3 to 5 years. However, 19% anticipate more than 10 years, while 16% expect 6 to 10 years. Only 8% expect mainstream adoption within two years.

The wide variation in expectations reflects both the early maturity of the market and the diversity of manufacturing environments. Adoption will not occur uniformly: structured, repeatable applications may scale relatively quickly, while highly variable or safety-critical use cases will require longer validation and preparation.



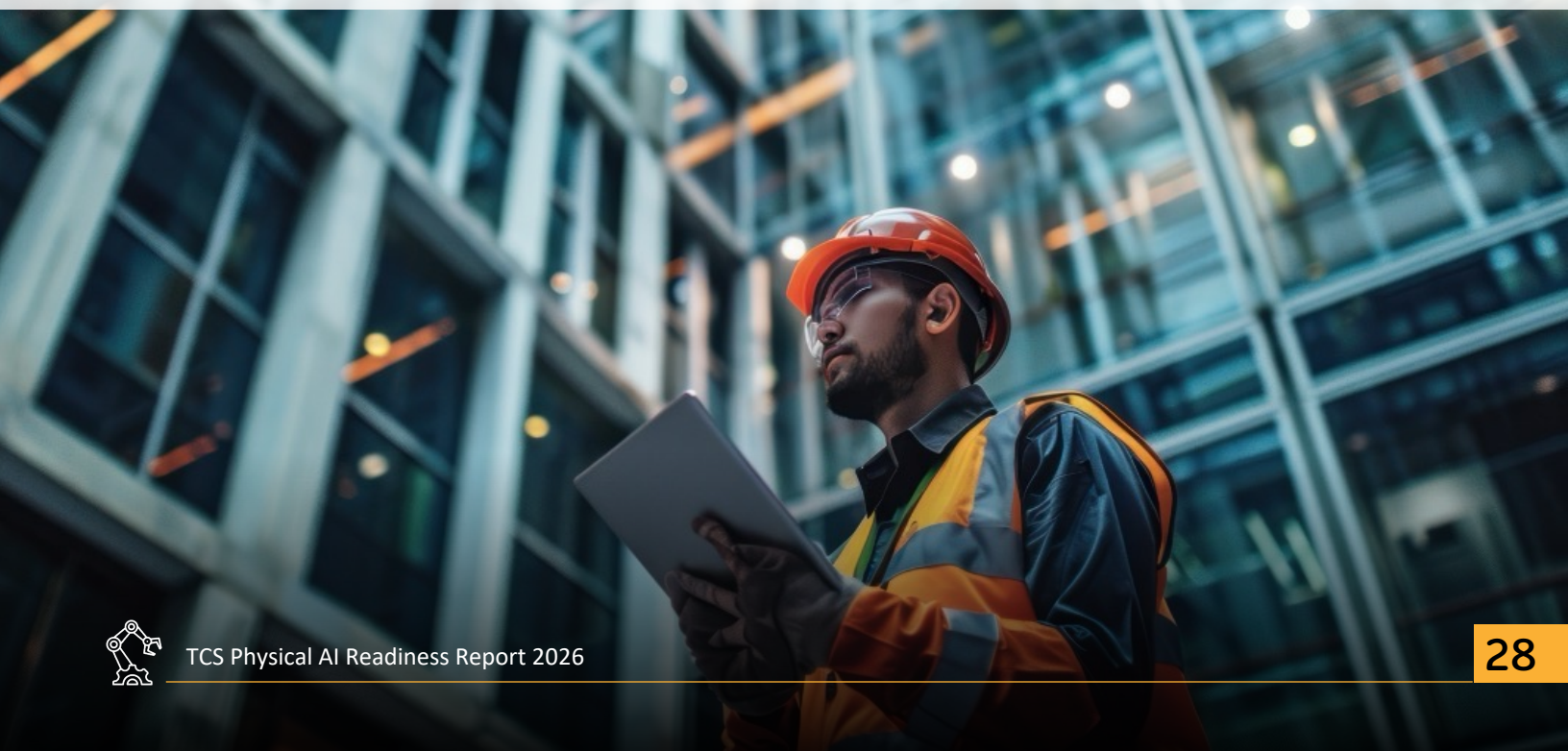
Conclusion

Physical AI adoption in manufacturing remains at an early and uneven stage. Sixty-eight percent of manufacturers report either no active deployment or only experimental activity, and just 9% have successfully scaled pilots into operations. Strategic commitment is similarly mixed: 25% identify Physical AI as a core priority or major initiative, while 36% say it is not currently a priority.

The findings show that manufacturers will not close this gap through technology investment alone. Data integration, legacy modernization, workforce capability, governance, and clearly defined accountability will determine whether promising pilots become repeatable, enterprise-scale deployments.

Expectations for widespread deployment vary considerably. While 25% anticipate adoption across most major sites within three to five years, 35% expect it to take at least six years and 32% remain uncertain. This creates a valuable window for manufacturers to build the foundations for scale while the market continues to mature.

The competitive question is therefore not who experiments first, but who builds the readiness to scale successfully. Manufacturers that connect Physical AI with trusted data, modern infrastructure, empowered people and responsible governance will be positioned to create more resilient, adaptive and future-ready enterprises.



Executive champions

This study was guided and sponsored by the following leaders:

- **Anupam Singhal**, President – Manufacturing, TCS
- **Naresh Mehta**, Global Chief Technology Officer – Manufacturing, TCS
- **Subhash Sakorikar**, Global Head – Manufacturing Industry Excellence, TCS
- **Gaurav Syal**, Vice President and Global Head of Google Business, TCS

Contributors

The executive champions express their appreciation to the following contributors for their expertise and support:

- **Anant Haidale**, VP and Business Head – Americas, Manufacturing, TCS
- **Rakesh Devpura**, VP and Business Head – Americas, Manufacturing, TCS
- **Ramit Rastogi**, Business Head – Americas, Manufacturing, TCS
- **Manish Mishra**, Business Head – Europe, MEA, APAC & ANZ, Manufacturing, TCS
- **Sudeep Mazumdar**, VP and Business Head – UK&I, Manufacturing, TCS
- **Gurudatt Trivedi**, Head – Strategy, Manufacturing, TCS
- **Ranjith Jayaraman**, Global Head – Google Cloud & Gemini Enterprise Partnerships, TCS

Acknowledgments

This study was made possible through the dedication and effort of numerous team members. A special thank you to the following leaders for their collaboration and continued support:

- **Abhinav Kumar**, Chief Marketing Officer, TCS
- **Vikrant Gaikwad**, Global Head – Industry Marketing Group, TCS
- **Serge Vatin-Perignon**, Global Head – Services Marketing, TCS
- **Rohaam Mishra**, Global Head of Marketing – Manufacturing, TCS
- **Ravindran Asoka Kumar**, Global Head of Marketing – Google Cloud Unit, TCS

Additional appreciation to:

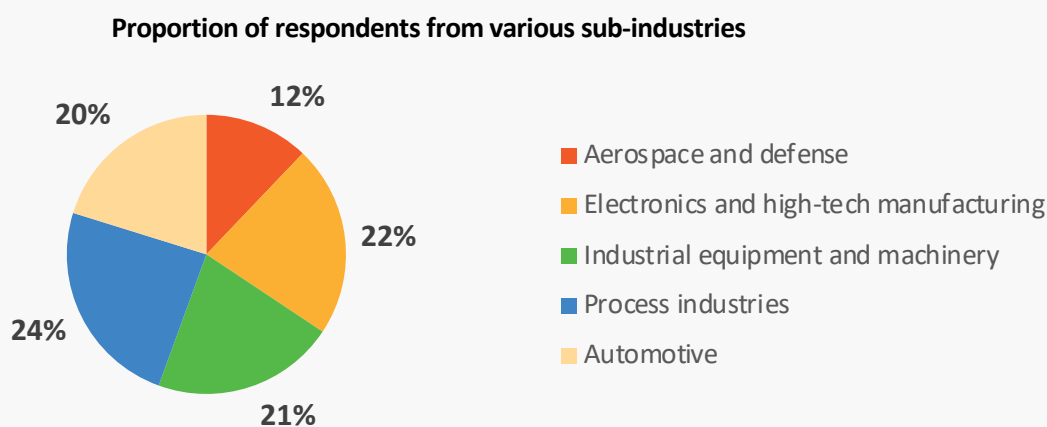
Pravir Kumar Rai, Mansha Dhingra, Kunal Makhija, Lokesh Rajpoot, Laura Rudolph, Bhuvaneshwari KS, Mrunal Lakal, Mahafrin Dumasia, Kartik Korpai, and Mayank Sharma



Methodology

This report is based on a quantitative survey commissioned by TCS, capturing insights from **300 manufacturing organizations across North America and Europe**.

The study spans a diverse set of industries, including:



The research examines multiple dimensions of Physical AI adoption, including deployment maturity and use cases, expected business impact and value realization, implementation challenges and barriers, data and infrastructure readiness, workforce implications and talent strategies, governance and compliance maturity, and investment priorities and future outlook.

Insights were gathered from **senior operational and technology leaders**, providing a comprehensive view of both strategic intent and operational realities shaping Physical AI adoption across the manufacturing sector.

Percentages displayed in charts are rounded independently. Combined figures are calculated from the underlying respondent counts and may therefore differ by one percentage point from the sum of displayed percentages. For multiple-response questions, totals may exceed 100%. Unless otherwise stated, percentages are based on all 300 respondents.



This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

About the Report

This report is published by Tata Consultancy Services (TCS). The Future-Ready Manufacturing: TCS Physical AI Readiness Report 2026 examines how manufacturers are preparing to scale Physical AI—AI-enabled machines and systems that can perceive their surroundings, adapt to changing conditions and act in real time.

Based on insights from 300 manufacturing organizations across North America and Europe, the report explores adoption maturity, high-value use cases, operational impact, data and infrastructure requirements, workforce transformation, governance, and investment priorities.

It offers a practical perspective on what manufacturers need to move from experimentation to enterprise-wide value. The findings underscore the importance of trusted data, modern infrastructure, skilled people, responsible human-machine collaboration and governance by design in building resilient, adaptive and future-ready manufacturing enterprises.

About Tata Consultancy Services

Tata Consultancy Services (BSE: 532540, NSE: TCS) is the technology partner of choice for industry-leading organizations worldwide. Since its inception in 1968, TCS has upheld the highest standards of innovation, engineering excellence and customer service.

It has set an aspiration to become the world's largest AI-led technology services company and is enabling its clients to transform themselves across the full AI stack, from infrastructure to intelligence.

Rooted in the heritage of the Tata Group, TCS is focused on creating long term value for its clients, its investors, its employees, and the community at large. With a highly skilled workforce spread across 56 countries and 194 service delivery centers across the world, the company has been recognized as a top employer in six continents. With the ability to rapidly apply and scale new technologies, the company has built long term partnerships with its clients – helping them emerge as perpetually adaptive enterprises. Many of these relationships have endured into decades and navigated every technology cycle, from mainframes in the 1970s to artificial intelligence today.

TCS sponsors 13 of the world's most prestigious marathons and endurance events, including the TCS New York City Marathon, TCS London Marathon, Tata Mumbai Marathon, and TCS Sydney Marathon with a focus on promoting health, sustainability, and community empowerment.

TCS generated consolidated revenues of over US \$30 billion in the fiscal year ended March 31, 2026. For more information, visit www.tcs.com.

Follow TCS on [LinkedIn](#) | [Instagram](#) | [YouTube](#) | [X](#)

