CIMdata

What's the State of AI in PLM?

Insights from a study of industrial companies, software providers, and service providers



eBook sponsored by: Siemens Digital Industries Software

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Takeaways

- **Adoption is real but early.** Most industrial companies are still in the earliest stages of their AI journey, with AI applied to fewer than a quarter of their projects.
- **Investment intent is broad.** At least 80% of every group in the study—industrial companies, software providers, and service providers—expect AI investment to grow over the next two years.
- **Data quality is the gating constraint.** 60% of industrial companies name data quality as a top-three adoption challenge, and service providers independently report the same figure for their clients.
- **Integration outranks everything at selection time.** Integration with existing systems is the #1 solution selection factor at 62%, ahead of proven ROI, security, and production-readiness.
- **Validation is the bottleneck.** Only 5% of industrial companies are very confident in their ability to validate AI outputs—indicating a gap between pilot and production.
- **Industrial companies want to stay in control.** A blended buy-and-build approach, led by internal teams, is the default—and service providers are most valued as enablers.
- **Benefits are real but uneven.** Reduced manual work and faster information access lead realized benefits, yet 31% of industrial companies with AI in use cannot point to a measurable benefit.
- **The biggest near-term opportunity is putting AI to work.** Only 8–33% of industrial companies use the AI already available in their primary tools—much of the capability is already in reach, sitting unused.

Introduction

AI has moved to the center of the conversation in product development. Software and service providers across the product lifecycle are building it into their offerings, and industrial companies are weighing where to invest and how quickly to move. The questions now are practical: where AI is genuinely paying off, what to prioritize, and how to move from interest in AI to business results.

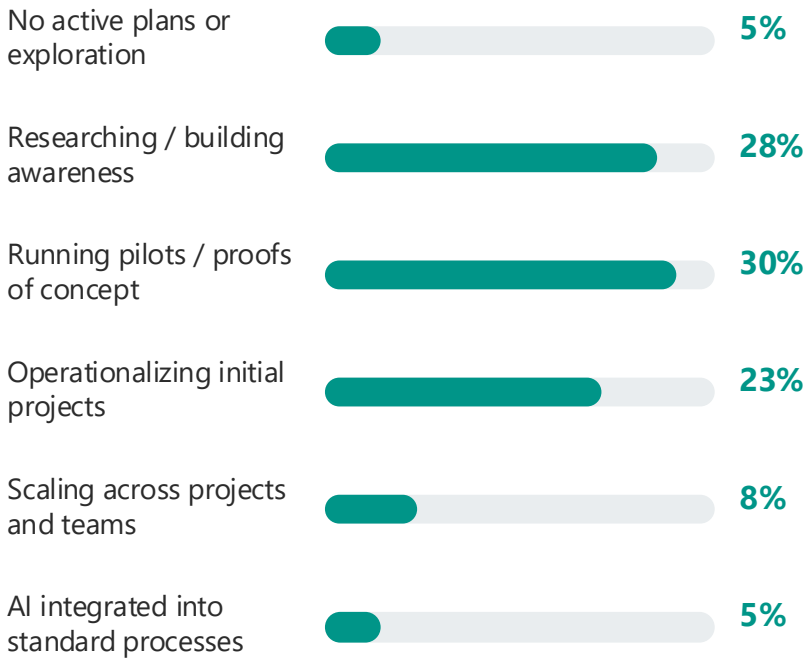
This eBook draws on the CIMdata AI in PLM Study, an independent research program conducted in early 2026 and followed by a CIMdata report in April 2026 that surveyed the three groups whose decisions shape this market: the industrial companies that design and build products, the software providers whose technologies support the product lifecycle, and the service providers that help implement them. It captures what they reported—where AI adoption stands, what industrial companies want from AI, what is slowing them down, and what is already delivering value.

The pages that follow turn that research into a practical read for anyone investing in AI for product development. Each page pairs a finding with guidance on what to do about it—so you can see where your own organization stands, understand what your peers are prioritizing, and make better-informed decisions. Throughout, Siemens adds its own perspective and experience, connecting the research to how it helps industrial companies apply AI in practice.

The State of AI in PLM

Adoption of AI in PLM is real, but it is shallow. Most industrial companies place themselves in the earliest stages of their AI journey: 58% are either building awareness or running pilots, and only 13% have scaled AI across multiple projects or built it into standard processes. Use within active projects is lower still—87.5% apply AI to fewer than a quarter of their projects.

Intent runs well ahead of the deployed footprint. Around 80% of industrial companies expect their AI investment to grow over the next two years. The segment to watch is the 23% in the operationalizing phase—past piloting, not yet scaling—looking for the path to production.

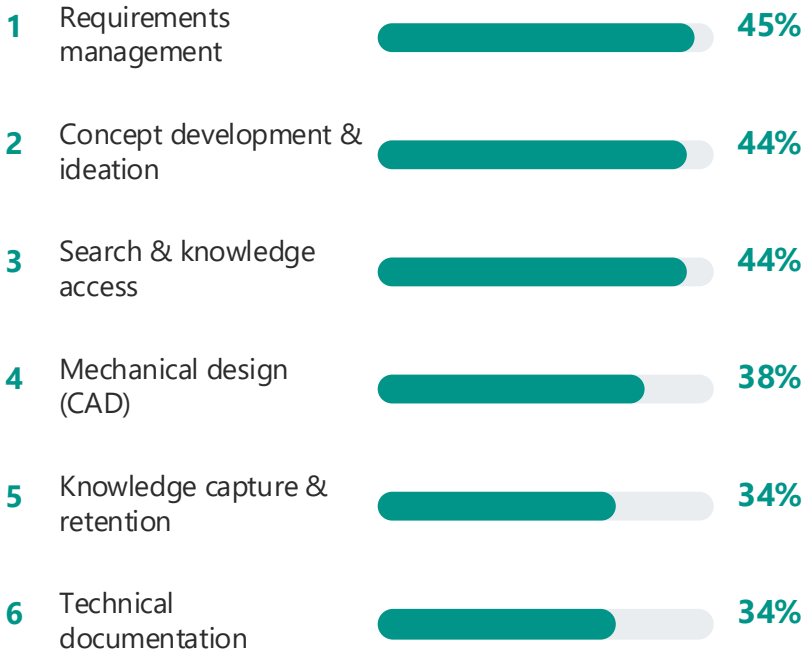


AI Journey Stage—Single Select

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Where AI Is Being Applied Today



Where AI is Used or Piloted Today—Select All that Apply

Today, industrial companies apply AI to a focused set of product-development uses. Four application areas lead: requirements management (45%), concept development and ideation (44%), search and knowledge access (44%), and mechanical design (38%). A second tier—technical documentation, knowledge capture, and simulation—sits in the low 30s.

The pattern is telling. The leading uses are about finding, reusing, and generating information rather than autonomously creating designs. Industrial companies apply AI where it lowers the cost of knowledge work, not yet where it makes engineering decisions—leaving clear headroom as the data management use cases mature.

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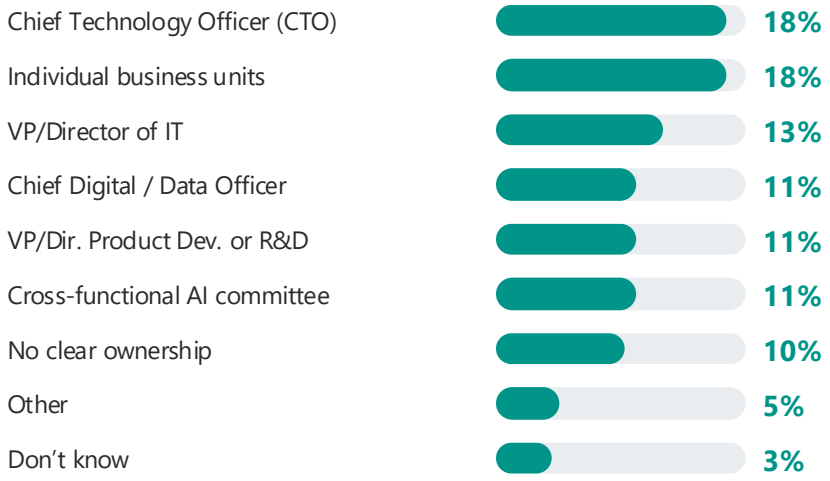
AI Strategy and Ownership

Most industrial organizations are pursuing AI without a formal plan. Only 6% have a comprehensive AI strategy with a defined roadmap and governance. The largest group (40%) is still developing a high-level strategy, a third (34%) operate informally and leave individual teams to decide, and 18% have no strategy at all.

Ownership is just as unsettled. No single function owns AI in product development—responsibility is split across the CTO, individual business units, IT, a Chief Digital or Data Officer, engineering leadership, and cross-functional committees. Weak strategy and diffuse ownership reinforce each other, and together they help explain why broad investment intent has not yet translated into deployment.



Formalization of AI Strategy



Organizational Ownership of AI—Single Select

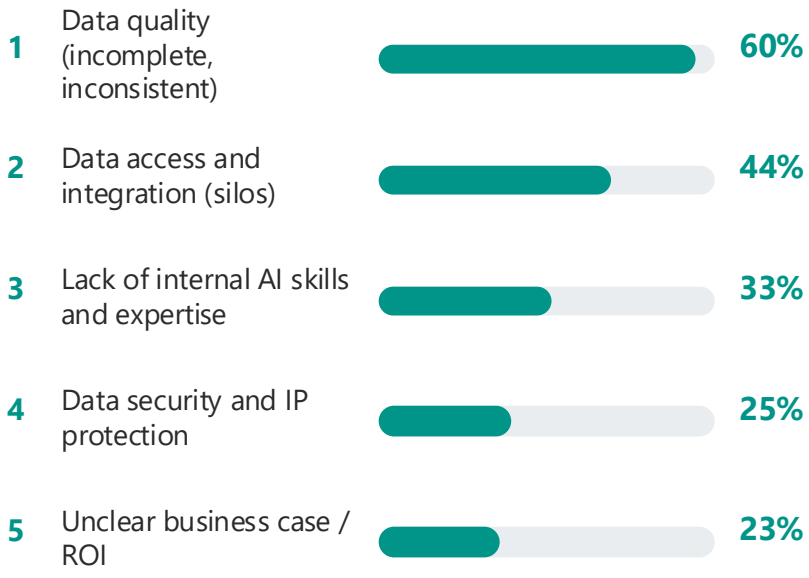
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Top Challenges to AI Adoption

Ask industrial companies what stands between them and AI in PLM, and the answer starts with their own data. 60% name data quality as a top-three adoption challenge—the single most-cited obstacle in the study, and one that service providers independently report at the same rate for their clients.

Data access and integration across siloed systems is close behind at 44%—a second data problem feeding the first. The next tier is different in kind: 33% cite a shortage of internal AI skills and 23% an unclear ROI or business case. The list describes an organizational readiness problem more than a technology problem.



Top Adoption Challenges—Select Top-3

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Top Buyer Priorities



Top Solution Selection Factors—Select Top-3

When industrial companies evaluate an AI-enabled PLM solution, one factor stands above the rest: integration with existing systems, cited by 62% as a top selection factor. It outranks proven ROI and business value (49%), data security and compliance (47%), and production-ready capabilities (44%).

Read down the list and a consistent buyer emerges: one who wants AI that fits the systems already in place, proves its value, and protects sensitive data. These are practical, deployment-focused priorities—the factors that decide whether a solution moves from evaluation into production.

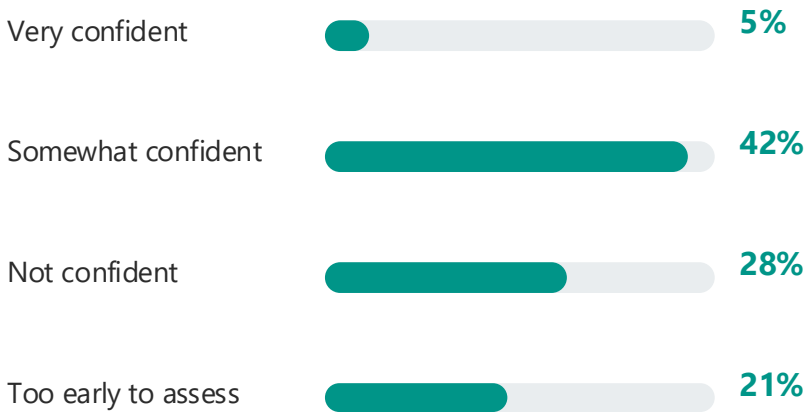
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Validation Confidence

The gap between piloting AI and trusting it in production shows up clearly in validation. Only 5% of industrial companies say they are very confident in their ability to validate and safely use AI outputs. The largest group (42%) is just "somewhat confident," with methods available but not proven; more than a quarter are not confident, and another 21% say it is simply too early to assess.

For engineering organizations—where an unvalidated output can carry real safety, warranty, or certification consequences—low validation confidence is a brake on scaling an AI implementation. It is also an opening: the providers and methods that make AI outputs reviewable inside existing engineering processes address the single biggest blocker between pilot and production.

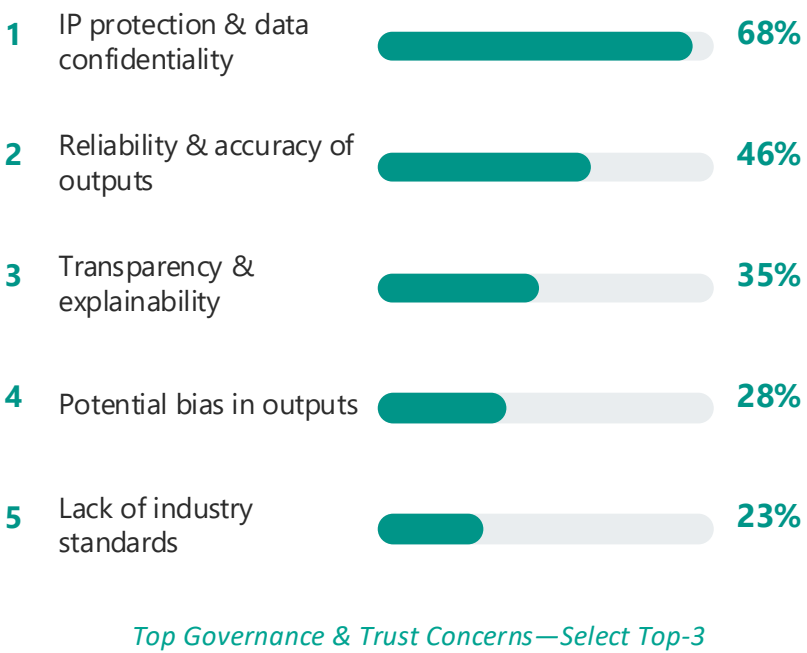


Confidence in Validating AI Outputs

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What Companies Want from Responsible AI



Top Governance & Trust Concerns—Select Top-3

For industrial companies, responsible AI starts with protecting what is theirs. Intellectual-property protection and data confidentiality is the dominant governance concern, cited by 68%—far ahead of any other. Engineering organizations work with proprietary designs and controlled data, and they will not feed that into systems they do not trust.

Two further concerns follow. Reliability and accuracy of AI outputs (46%) ties directly to the validation gap. Transparency and explainability (35%) reflects a demand for AI whose reasoning can be reviewed and justified. Responsible AI, for this audience, is less about abstract ethics and more about IP, accuracy, and traceability that fit existing review processes.

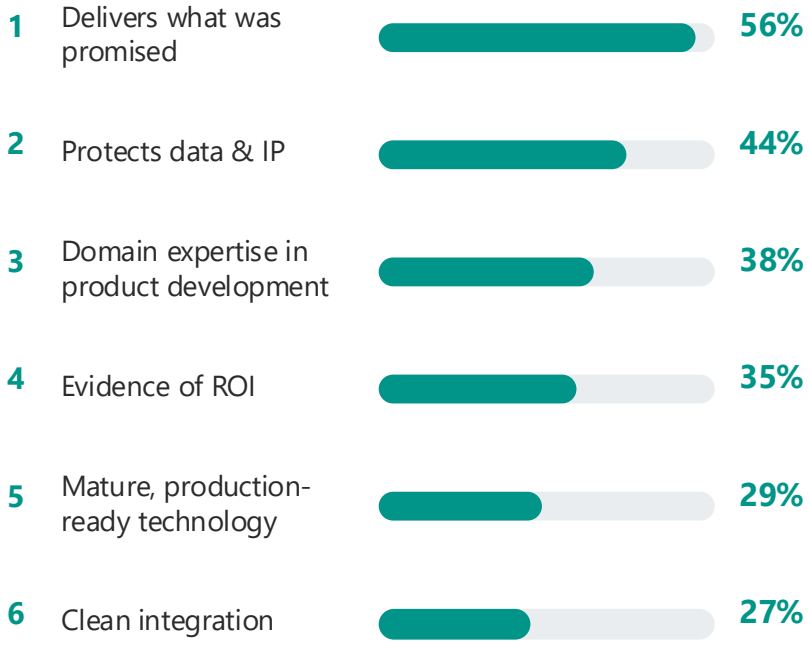
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What Earns Industrial Companies' Trust

Trust is earned on a short list of tests, and industrial companies apply them to every AI provider they consider. The one that carries the most weight is the simplest: the distance between promise and delivery. 56% name it as a leading factor, so a track record of shipping exactly what was shown is the strongest trust signal a provider can offer.

The rest reads as a credibility checklist a provider can meet on evidence rather than assertion: protecting data and IP (44%), demonstrating genuine domain expertise (38%), showing real evidence of ROI (35%), proving the technology is production-ready (29%), and integrating cleanly with existing systems (27%).

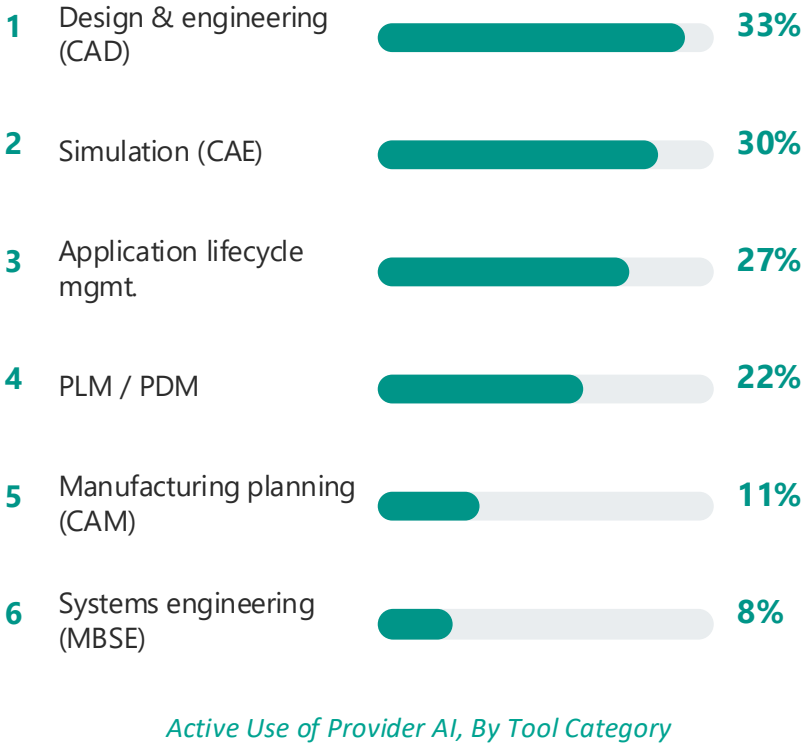


What Earns Provider Trust—Select Top-3

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The Activation Opportunity



Active Use of Provider AI, By Tool Category

For many industrial companies, the quickest path to value from AI runs through capability they already have. AI is now built into many of the PLM solutions they use every day, and there is clear room to put more of it to work: 33% actively draw on AI in design and engineering (CAD), 30% in simulation (CAE), 27% in application lifecycle management, 22% in PLM/PDM, 11% in manufacturing planning (CAM), and 8% in model-based systems engineering.

The main barrier is awareness more than availability—"don't know" responses rise with tool specialization, reaching 50% for MBSE. That makes activation the most valuable near-term move: putting AI that is already in place to work, without waiting on new tools or deployments.

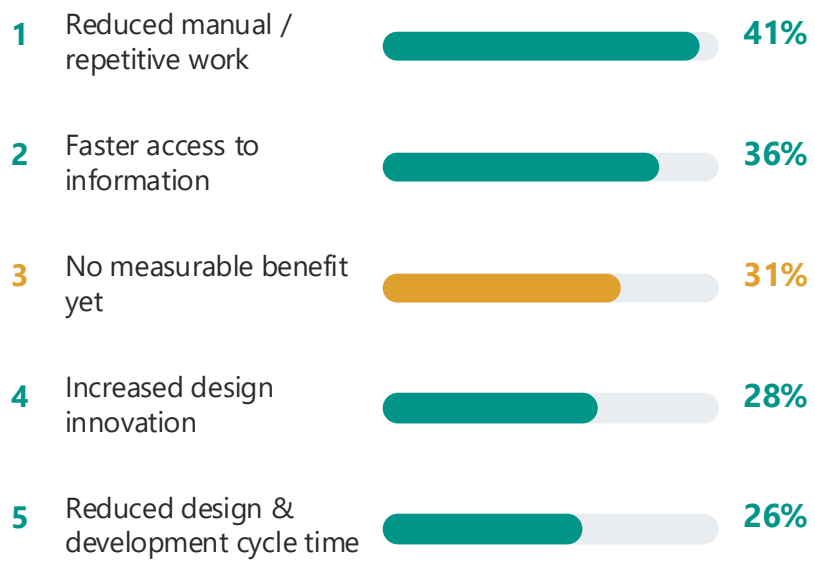
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What AI Is Delivering Today

Where AI is in use, the benefits industrial companies report are practical and efficiency-oriented. Reduced manual and repetitive work leads at 41%, followed by faster access to information at 36%. Increased design innovation (28%) and reduced cycle time (26%) follow—useful, but secondary to the time savings that come first.

Alongside the gains sits a clear opening: 31% of industrial companies with AI in use cannot yet point to a measurable benefit. In an AI-focused sample, that reflects how early most deployments still are—and it marks exactly where experienced implementation help turns deployment into demonstrable results.

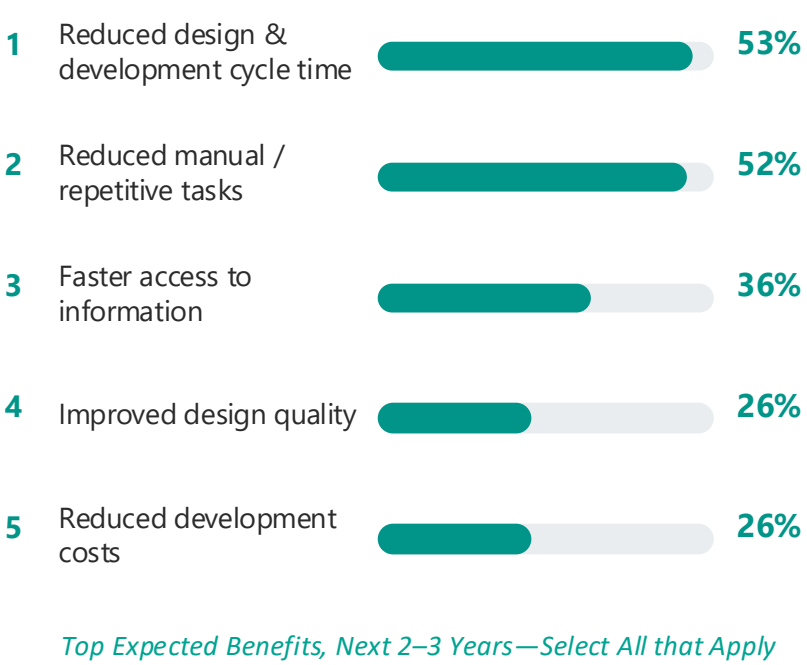


Realized Benefits—Select All that Apply

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What Industrial Companies Want from AI



Top Expected Benefits, Next 2–3 Years—Select All that Apply

Industrial companies are clear about what they want AI to do next, and it is practical: more help with the work they already do. The top expected benefits are reduced design and development cycle time (53%) and reduced manual and repetitive tasks (52%), followed by faster access to information (36%).

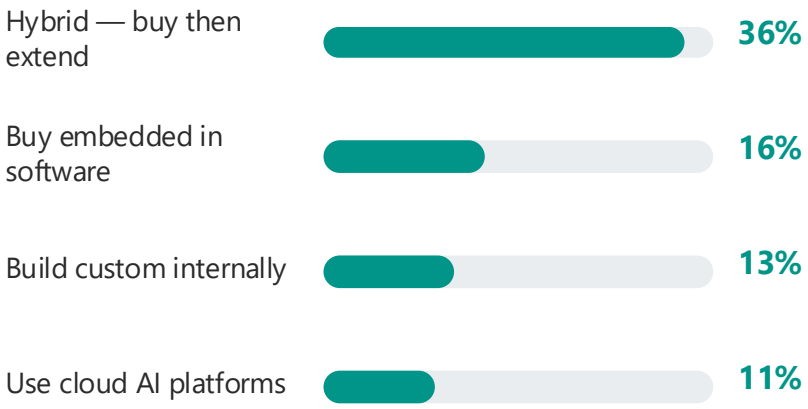
Increased design innovation ranks lower, named by 17%—though that likely understates it: the efficiency gains at the top free engineers to explore new ideas, and "innovation" here may be read narrowly as generative design. Meeting industrial companies where their priorities are—speed and efficiency first—is the surer path to adoption, and often to more innovative work as well.

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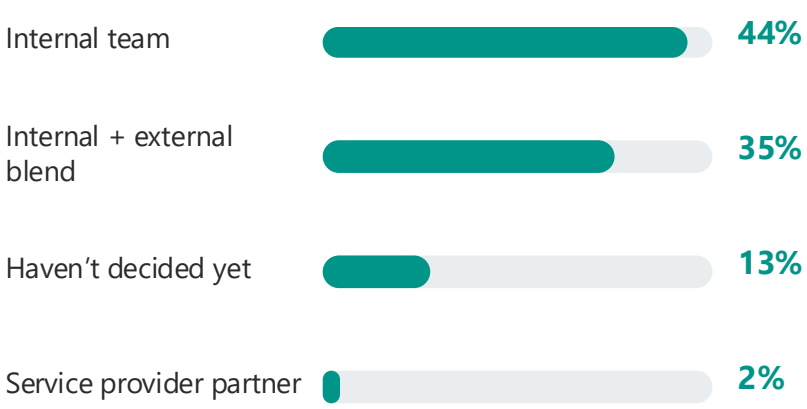
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How Your Peers Buy and Lead AI

When industrial companies source AI capability, they prefer to keep their hands on the wheel. The most common posture is hybrid—buy a foundation, then extend and customize it—chosen by 36%, well ahead of pure buy (16%) or pure build (13%). Leadership preferences point the same way: 44% want an internal team to lead and 35% want a blend of internal and external hands—making enablement and advisory the most natural role for a service provider.



Preferred Sourcing Approach



Preferred Implementation Leadership

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How Companies See AI Changing Engineering

CIMdata's position is clear: the value of AI in product development comes from *augmenting* engineers, not replacing them—amplifying human insight and decision-making rather than trying to automate it. What industrial companies expect of AI lines up closely with that view: 71% expect it to enable engineers to focus on higher-value work, 69% expect it to reduce certain repetitive tasks, and 55% expect it to make them more productive.

The workforce anxieties that dominate public conversation are muted here: only 9% expect minimal impact, and job-displacement worries are low. What industrial companies anticipate instead is a shift in where engineering effort goes—26% expect demand for new AI and data skills, and 36% see AI as a way to capture and retain knowledge from experienced employees.



Expected Impact on the Workforce—Select All that Apply

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What to Look For in AI-Enabled PLM

Drawing the findings together, a practical buyer's checklist emerges—the questions worth asking of any AI-enabled PLM solution.

- **Integration depth:** does it fit your existing systems?
- **Proven capability:** can the provider show proven ROI and production-ready capability, backed by evidence?
- **Validation:** can outputs be reviewed and trusted inside your engineering processes?
- **Governance:** does it protect IP and make AI's reasoning reviewable?
- **Commercial clarity:** is the pricing one you can see value in?
- **Implementation support:** does the provider help build your team's capability?

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Siemens and the State of AI in PLM

The study describes where AI in PLM stands today. Here is how Siemens helps industrial companies act on it.

Native AI from Siemens Xcelerator

With Siemens Xcelerator, AI is embedded in the architecture of our portfolio, not bolted-on. We're building an AI-native portfolio that's grounded in engineering context, physics, and trusted lifecycle data – delivering deterministic, auditable, and real-world outcomes. At the core of our portfolio is Siemens Teamcenter, our leading PLM solution, providing seamless access to advanced AI capabilities right where your teams work.



Faster engines

Empowering teams with AI-accelerated tools to reach solutions faster



Smarter execution

Enabling people with AI to get work done faster across design, simulation and operations



Trusted outcomes

Turning distributed data and context into auditable, decision-ready insights so teams act faster

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Next Steps

For industrial-company readers, the study points to a practical sequence rather than a leap.

- **Assess your maturity.** Strategy, ownership, data, and change management are where most organizations are weakest.
- **Treat data as the gating item.** AI built on inconsistent data will disappoint regardless of the model.
- **Pick a focused application area.** One where AI lowers the cost of knowledge work, rather than spreading effort thin.
- **Set validation expectations early.** So outputs can be trusted in production.
- **Decide your sourcing posture deliberately.** A blended buy-and-build approach, led by internal teams, is the norm for good reasons.
- **Set governance and IP expectations with providers up front.** Not after deployment.

The organizations that close the data, integration, validation, and governance gaps on purpose will be the ones that pull ahead.

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Conclusions

AI in PLM is at an inflection point. Investment intent is broad, interest among industrial companies is real, and the technology is advancing quickly—and deployment, though still early, has real room to deepen as the foundations strengthen. Adoption is gated less by the sophistication of AI than by data quality, integration, validation confidence, and governance: the unglamorous work of making AI trustworthy inside engineering.

The ecosystem is not short on capability. The opportunity ahead lies in putting that capability to work, proving its value, and earning trust. The industrial companies who treat AI as an organizational change rather than a tool purchase—and the providers who meet them with integration, proof, and follow-through—are the ones who will turn this moment into lasting results.

About Siemens

Siemens is a global technology leader that combines the real and the digital worlds like no other, helping customers around the world to become more competitive, resilient and sustainable. Our technology empowers customers to transform the industries that form the backbone of economies — from factories and infrastructure to transportation and grids.

At Siemens, we combine decades of industrial data, deep domain expertise and advanced AI to help customers move faster across the entire lifecycle. Together with our partners, we're reinventing the entire end-to-end industrial value chain through AI — from design and engineering to manufacturing, production, operations, and into supply chains. Through Siemens Xcelerator, we're making trusted industrial AI accessible to all.



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