



AI in asset management

EBOOK

From potential to proven value

Across industrial sectors, from utilities and transport to oil & gas and manufacturing, companies are under growing pressure to improve reliability, cut costs and achieve sustainability targets.



Yet many are held back by the same internal challenges: aging assets, siloed data, skills shortages and slow-moving digital adoption.



AI is beginning to shift that equation. It helps industrial teams move from reactive fixes to predictive strategies, optimize maintenance schedules and uncover efficiency gains hidden in operational data.



The challenge now isn't whether AI can deliver – it's how to embed it in everyday workflows so the benefits last beyond the pilot stage.

Key insights on AI in asset management

Forrester Report – 2025 AI Predictions

75 percent of enterprises that attempt to build these AI agents themselves next year will fail. Instead, they'll turn to consultancies for custom setups or rely on agents embedded in their existing vendor software ecosystems.

The companies that succeed will recognize current limitations and work with vendors and system integrators to build agents at the cutting edge of this technology.

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Verdantix Global Corporate Survey – Where AI delivers value

Industrial firms are focusing their AI investments on five high-impact areas:

- Predictive maintenance
- Asset condition monitoring
- Production and process optimization
- Energy management
- Supply chain performance

These priorities show a shift from experimentation to targeted, outcome-driven AI deployments in asset-heavy sectors.

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Gartner 2025 Trends – Becoming AI forward

By 2027, more than half of all enterprise Generative AI models will be domain-specific – tailored to industry or business function – compared to just 1% today.

This shift is expected to boost adoption rates, trust and measurable returns by delivering context-rich outputs to operations teams.

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Top 6 challenges to scaling AI



Data silos

Asset information is scattered across legacy systems, preventing AI from creating a complete operational view.



Skills gap

Teams often lack the right mix of AI knowledge and domain expertise to build and apply effective models.



Vague objectives

Without clearly defined business problems, AI efforts struggle to show measurable results.



Low readiness

Models may work, but adoption stalls when teams don't trust outputs or processes aren't ready for change.



Poor integration

AI integrated into existing workflows rarely sticks; value comes when it is built into core asset management systems and processes.



Organizational misalignment

Business and technical teams often have mismatched expectations, and AI initiatives lose momentum without strong IT infrastructure, cloud readiness, training and governance.

Why AI in asset management matters now

- **AI, machine learning, automation, IoT and Python** are driving rapid digital transformation in asset-heavy industries.
- **In 2025, 3 billion+ IoT devices** will enable AI at the edge – assets that analyze and act on data in real time.
- **AI digitizes, cleanses and processes data**, automates analysis and generates asset strategies from manuals and historical records.
- **AI frees skilled resources for higher-value work** while improving asset health insights.
- The priority: **target measurable outcomes** and scale from pilots to production with strong data quality, governance and security.

5 top AI use cases in asset management

01

Python everywhere

In enterprise asset management (EAM), Python powers predictive models, analytics and automation – bringing advanced AI capabilities directly to asset teams.

02

Anomaly detection

Increasingly being built on top of work management to spot process problems earlier.

03

Big tech

What's available now feels far more accessible, especially when applied to real-world operational needs.

04

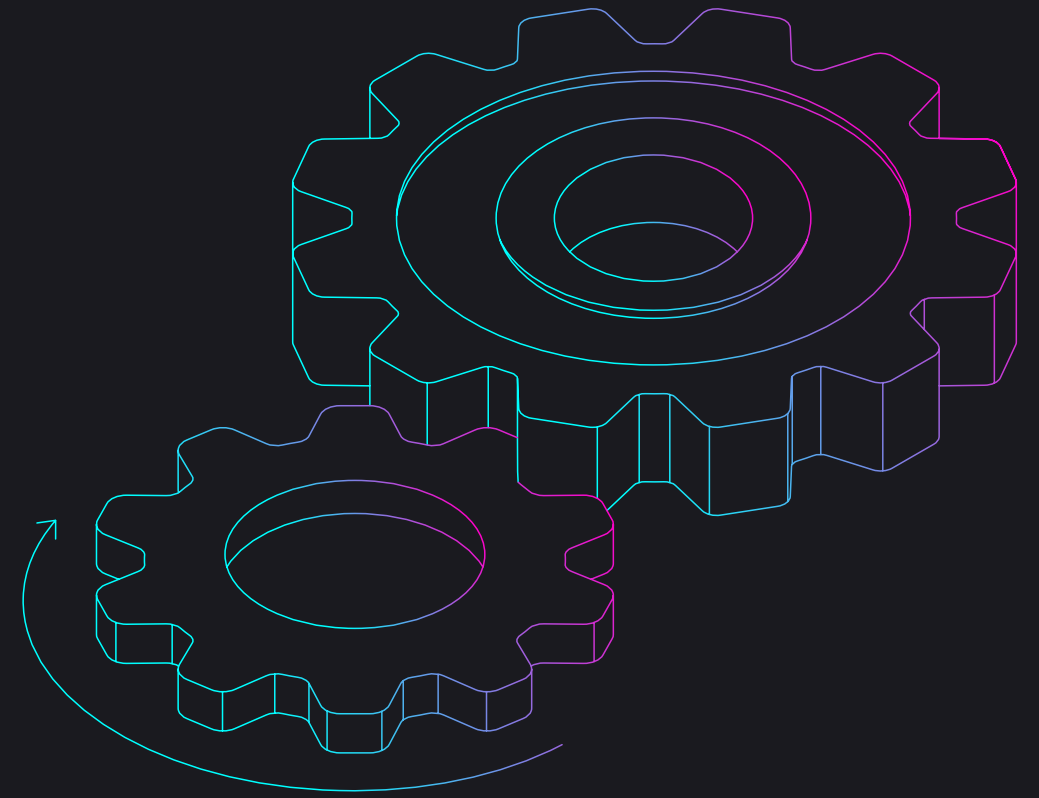
Embedded AI assistance

Delivers trusted recommendations based on application knowledge.

05

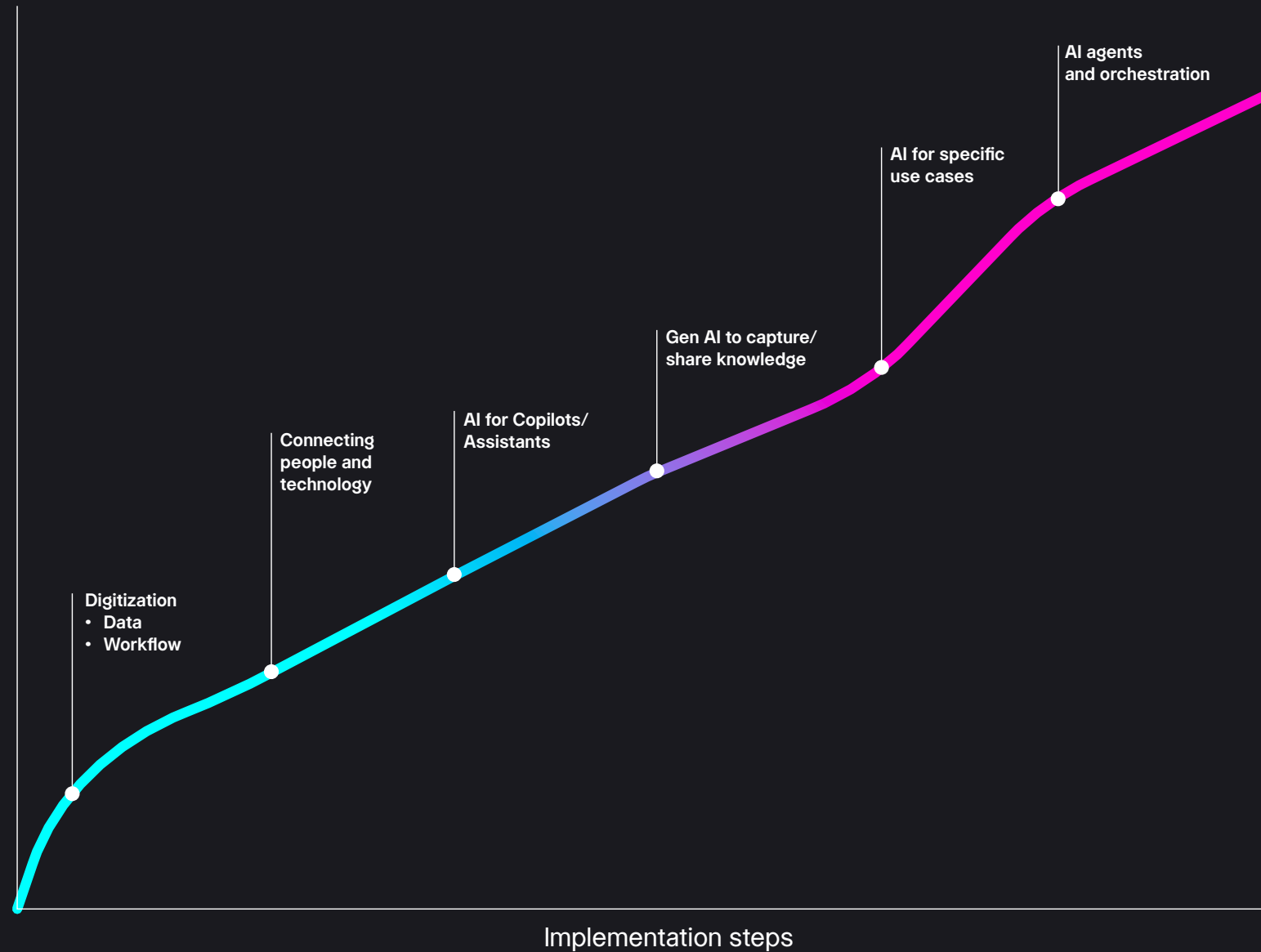
AI in asset performance management (APM)

In APM, AI models flag suspicious behavior based on merged operational inputs with historical records to detect anomalies.



The business value of AI adoption

How is AI being implemented?



Where's the value?

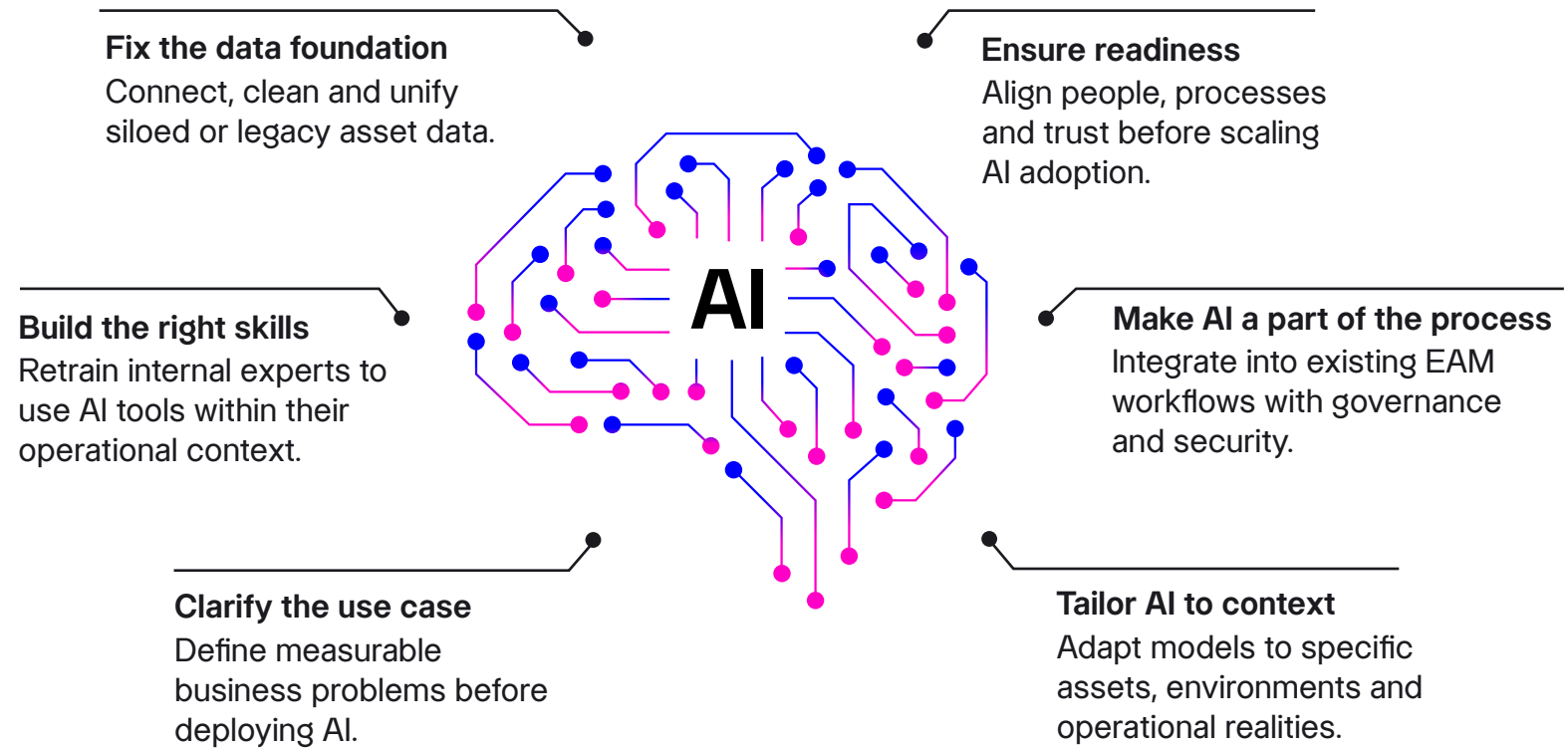
Potential benefits include up to:

- 5% reduction in new equipment costs
- 20% reduction in energy consumption
- 20% reduction in MRO material costs
- 20% increase in labor productivity
- 20% reduction in production downtime
- 30% reduction in MRO inventory levels
- 50% increase in warranty cost recovery
- 50% reduction in maintenance overtime labor and contractor costs

Business value multiplies as organizations progress along the AI adoption curve – from digitizing workflows to embedding AI into core operations.

Each stage drives efficiency and strengthens resilience, competitiveness and innovation capacity. The journey is less about deploying technology than unlocking sustainable ROI at scale.

What organizations should focus on to deliver value



As AI adoption scales, policies, ethics, security and accountability must remain central. Success depends on tailoring AI to your asset base and ecosystem — no two operational environments are alike.

Adapting models to specific asset types, data sources and operational realities ensures that AI delivers relevant, reliable and trusted insights that drive measurable value.

Expected ROI from AI in asset management, according to Forrester Q2 AI Pulse Survey 2024

Insight:

Leaders anticipate meaningful returns from AI, which requires phased scaling – validating value through pilots before moving to enterprise-wide rollout



About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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E-book

Want to learn more about AI in asset management?

Watch our on-demand webinar to see real-world examples and discover how to move from pilots to measurable value.

[Learn more](#)

