# Strategy₿

# The State of AI+BI
# Analytics Global
# 2025 Survey

Manufacturing, Engineering
& Construction in Focus

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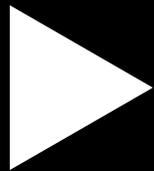
# Executive Summary

Manufacturing, engineering, and construction (MEC) companies are moving rapidly from AI experiments to real-world deployments. In 2025, these industries face mounting pressure to optimize operations, adapt to economic uncertainty, and make faster, data-informed decisions across all levels of the organization.

At the core of this shift is AI+BI: the fusion of artificial intelligence with business intelligence to deliver faster, more accessible insights—regardless of technical skill level.

This research brief explores how manufacturing, engineering, and construction organizations are deploying AI+BI to:

- Automate workflows for data professionals
- Empower less technical staff to ask and answer data questions
- Increase speed, accuracy, and consistency in decision-making
- Boost frontline productivity and scale adoption across departments

**#1 reported benefit:** Employee productivity, followed by cost savings and customer satisfaction

**28% of MEC companies** have fully operational self-service AI+BI across multiple departments

**44%** have deployed AI-powered bots or agents; a subset are using multiple agents across business lines

**Top barriers** include compliance risks (52%), integrations (40%), and inconsistent answers due to weak governance (40%)

## What sets leaders apart?

They are building modern semantic layers, automating legacy systems, and investing in AI+BI tools that reach from the data center to the construction site.

Case studies from **Honeywell** and **Emerson** show the impact of self-service analytics, embedded AI agents, and use cases including cost estimation and predictive maintenance.

# Key Takeaways from the 2025 Survey

AI-powered analytics is no longer experimental for manufacturing, engineering, and construction. This report presents findings from a global survey conducted in the first half of 2025 by an independent research firm commissioned by Strategy.

## Real-world impact at scale

AI+BI is helping MEC firms streamline operations and speed up decisions by embedding insights into everyday tools and workflows.



## Two tracks, one goal

Companies are advancing both expert automation and self-service analytics—with 28% fully operational across multiple departments.



## Maturity grows unevenly

While semantic governance is gaining traction, few organizations have moved toward proactive, decision-driving AI.

# Where AI+BI Is Working Now

Adoption of AI-powered analytics in manufacturing, engineering, and construction is already strong and steadily rising.

More than half of surveyed MEC organizations have fully operational use cases, either for single or multiple use cases and departments. Their primary goal is to increase operational efficiency, automation, and enabling faster decisions—from the data center to the construction and manufacturing sites.

Industrial firms are increasingly investing in:

- Governed data access through semantic layers
- Workflow-embedded insights to reduce delays and tool-switching
- AI+BI literacy programs to train non-technical staff on how to ask data questions and interpret results

## Why it Matters

Organizations that succeed in this transition will be better positioned to respond to shifting demand, labor shortages, and geopolitical volatility—while reducing operational lag and error.

## Top Motivators to Adopt AI-powered Analytics

What manufacturing, engineering and construction companies expect to achieve with AI + BI

**Empower frontline workers**
44%

**Improve decision-making**
44%

**Enhance operational efficiency**
40%

**Reduce costs**
40%

**Gain a competitive advantage**
32%

The data shows a clear trend: forward-looking manufacturers, builders, and engineers are scaling adoption across teams—not just tools.
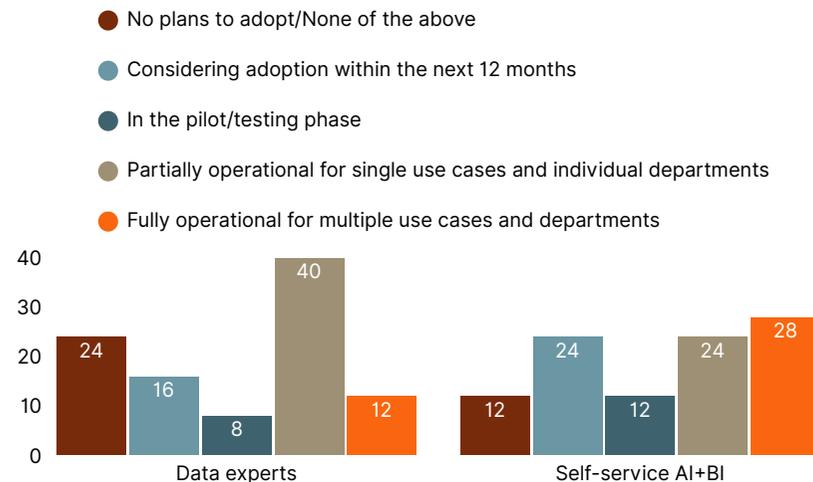
# Twin Use Cases: What's in Production

Momentum is building across two primary fronts: automation for data professionals and self-service insights for broader teams.

AI systems with structured, scalable platforms support tasks like ETL (Extract, Transform, Load) automation, historical trend analysis, and semantic data consolidation.

Natural language queries and AI-generated visualizations are helping staff on shop floors, in offices, and at job sites make data-driven decisions without technical skills.

## Twin Use Cases in Production

AI+BI deployment is progressing in two high-impact domains: data experts and self-service (responses in %)

- ● No plans to adopt/None of the above
- ● Considering adoption within the next 12 months
- ● In the pilot/testing phase
- ● Partially operational for single use cases and individual departments
- ● Fully operational for multiple use cases and departments



## Use Case 1: Data Experts

Manufacturing, engineering, and construction firms are advancing their AI capabilities to streamline data tasks and eliminate manual processing.

- **40%** of MEC companies already have partially operational systems (vs. 29% across all industries)
- **12%** have fully operational systems across multiple use cases and departments

## Use Case 2: Self-Service

Embedding AI+BI into daily workflows empowers employees to ask questions, spot patterns, and act, without relying on centralized analytics teams.

- **52%** have moved into production, either across a single or multiple departments (vs. 43% across all industries)
- **24%** are considering adoption within the next 12 months

# Bringing Data to the Frontlines

In manufacturing, engineering, and construction, frontline workers play a critical role—from factory floors to field offices. This transformation brings analytics closer to action. Instead of asking employees to learn new platforms, organizations are embedding data directly into familiar environments like Microsoft 365, CAD tools, and field management software.

An example of this shift includes **Honeywell,** which modernized reporting with Strategy's big data connector, centralized KPIs, and governed innovation zones—enabling 7,000 engineers to make faster, more consistent frontline decisions, and reporting over $1 million in measurable savings.

Already, 68% of MEC organizations report a positive ROI from their AI-powered analytics investments. However, only 8% see a significant impact—highlighting room for further improvement.

## Return on Investment

### 68%

Over two-thirds of companies are already seeing positive business outcomes from their AI-powered analytics investments.

### 8%

of the most advanced adopters report significant positive impact.

## What's Driving the Shift

AI-powered analytics is finally realizing the decades-old promise of "Intelligence Everywhere."

Natural language access to data—without training

Auto-generated visualizations for rapid interpretation

Embedded insights across everyday workflows

Chatbots that assist both office and site-based teams

It's not just about dashboards anymore. It's about delivering the right answer, in the right tool, at the right time.

# AI Agents: Analytics Beyond Dashboards

Manufacturing, engineering and construction are ahead of the curve in deployment of AI agents and bots. Across surveyed organizations, 32% have deployed one or more AI-powered analytics agents or bots for specific functions (versus 26% globally across all industries). An additional 12% of organizations (compared to 10% across all industries) use multiple agents and bots across different departments.

AI bots are built to:
- Summarize production, project, and cost metrics in natural language
- Suggest actions based on supply, performance, or usage trends
- Alert teams to safety issues, delays, or quality anomalies
- Answer ad hoc ops or planning questions from governed data

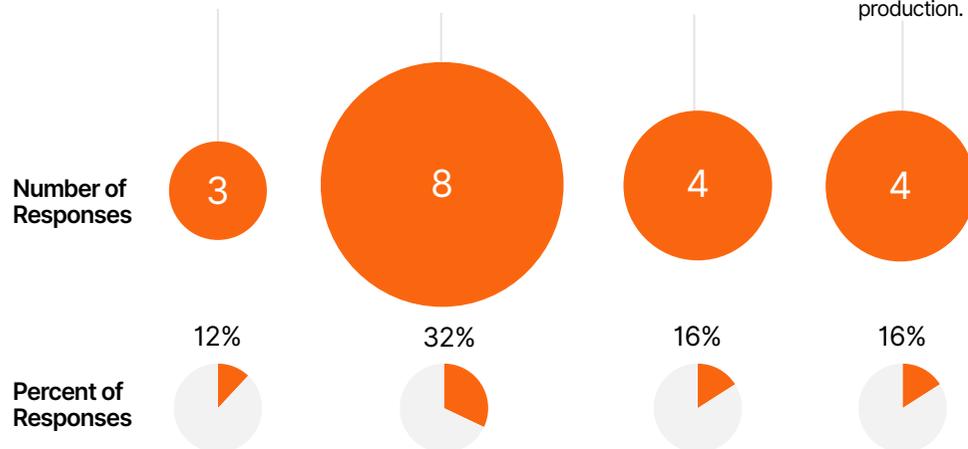## AI Agents in Manufacturing, Engineering and Construction
Organizations are embracing AI agents to drive efficiency and insight

We have multiple different AI agents or bots in production in several different departments or lines of business, and more on the way this year.

We have deployed one or more AI agents or bots for specific business functions.

We are piloting AI agents or bots and plan to move into production this year.

We are evaluating options for AI agents or bots without a clear timetable for production.

**Number of Responses**

3 | 8 | 4 | 4

**Percent of Responses**

12% | 32% | 16% | 16%

## AI bots

### 44%

of manufacturing, engineering and construction have operational AI agents or bots.

### 32%

of surveyed organizations in these industries are either evaluating options or piloting AI agents or bots.
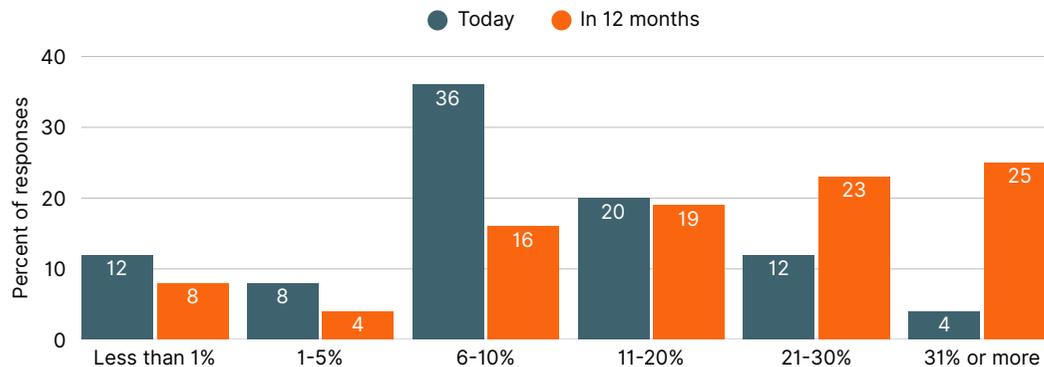
# Adoption Gains and Maturity Trends

Today, only a small share of employees use advanced BI platforms. But 25% of MEC companies aim to extend interactive AI-powered analytics access to 31% or more of their workforce within the next 12 months—a fivefold increase from current levels. If realized, this would mark the most significant analytics adoption leap since the introduction of spreadsheets.

Industrial firms are increasingly investing in:
- **Governed data access** through semantic layers
- **Workflow-embedded insights** to reduce delays and tool-switching
- **AI+BI literacy programs** to train non-technical staff on how to ask data questions and interpret results

## Expansion in Progress

Industrial companies are looking to increase access to AI-powered analytics fivefold over the next 12 months



Legend: ● Today ● In 12 months

| Category | Today | In 12 months |
|---|---|---|
| Less than 1% | 12 | 8 |
| 1-5% | 8 | 4 |
| 6-10% | 36 | 16 |
| 11-20% | 20 | 19 |
| 21-30% | 12 | 23 |
| 31% or more | 4 | 25 |

Y-axis: Percent of responses

These efforts reflect a broader realization: making data usable across roles is as important as building the infrastructure behind it.

## AI Maturity

Surveyed organizations report progress across maturity dimensions:

**44%**
Departmental access

**40%**
Cross-departmental access

**32%**
Advanced analytics (predictive, etc.)

**40%**
Company-wide governance + semantic layer

**24%**
Natural language queries

**16%**
Proactive AI (decision automation)

# Top 3 Challenges to Scale

As adoption of AI-powered analytics accelerates, organizations in manufacturing, engineering, and construction face a mix of structural, technical, and financial hurdles.

## Compliance risks

Concerns around **data privacy, AI bias, and regulatory scrutiny** are top of mind for over half of organization (**52%**), especially in multinational environments and government-contracted projects.

## Integration challenges

Many firms struggle to **embed AI+BI into existing ERP, PLM, or field operations software**—often requiring manual workarounds or duplicate effort. **40%** of surveyed organizations cited integration as a major challenge.

## Lack of Data Governance

Without a **semantic layer and unified data strategy**, organizations risk inconsistent or incorrect answers from AI systems. Data governance was a primary challenge for **36%** of respondents.

These challenges are especially pressing in industries where legacy systems, complex operations, and compliance requirements intersect.

## Operational Hurdles

When asked about the biggest technical and operational blockers:

# 44%

of respondents pointed to the **cost of implementation and scaling**

# 40%

noted **inconsistent answers or hallucinations** from AI models.

# Honeywell: Trusted Insights for National Security

The Kansas City National Security Campus (KCNSC), operated by Honeywell, engineers and assembles critical non-nuclear components for the U.S. nuclear deterrent.

## Challenge & Solution

Engineering teams at KCNSC depended on thousands of legacy reports and manual processes—including archived MicroStrategy exports—for quality-critical manufacturing decisions. As headcount grew from 4,000 to 7,000, so did complexity and the risk of metric inconsistency.

To scale with confidence, the team modernized its data infrastructure with a semantic architecture and governed pipelines. The team:

- Deployed Strategy's big data connector to streamline access and reduce query load on source systems
- Defined enterprise KPIs and hierarchies in a centralized data fabric
- Created governed "innovation zones" enabling engineers to prototype safely without disrupting certified pipelines

> *It's empowering to have Strategy as our partner. They help us ensure the solutions we leverage continually add value.*
>
> **Samuel Feinberg**
> Manager, Data Analytics Platform
> Honeywell Federal Manufacturing & Technologies
> Find out more >>

## Impact

**Reliable Analytics:** Engineers gained consistent data views to support testing and design.

**Efficiency Gains:** Automation reduced manual prep time and unlocked significant ROI.

**Governed Flexibility:** Innovation zones balanced speed and control.

## $1M+

in measurable **savings**, unlocked through eliminating redundant effort and report sprawl.

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# Emerson: Transforming Big Data into Actionable Insights

Emerson is a global technology and engineering leader with over 130 years of experience, serving industrial sectors with automation solutions that drive precision and performance.

## Challenge & Solution

To maximize yield in high-volume semiconductor production, Emerson needed to analyze billions of test results daily—without performance bottlenecks or sacrificing statistical fidelity.

Client-side limitations made it difficult to visualize and explore massive datasets. Emerson used Strategy One to unlock real-time, large-scale statistical analysis with:

- Custom visualizations using Strategy SDK to process billions of test results
- Server-side statistical calculations for boxplots, including quantiles and outliers
- Optimized data packaging and WebGL rendering to reduce load times
- Interactive filtering to let analysts remove noise and focus on true anomalies

> *"Using the Strategy SDK, we built custom visualizations that deliver clean, fast insights—without compromising statistical accuracy, even at massive scale.*
>
> **Dror Lupu**
> Principal Software Engineer, Emerson Electric
> Find out more >>

## Impact

**Real-Time Insight:** High-performance analytics on over 1.5 TB of daily data

**Precision Analytics:** Preserved raw statistical detail to detect subtle anomalies

**Scalable Framework:** Extended to scatter plots, histograms, and PDF-ready reports

## 1.5 TB

per day—analyzed with precision using Strategy One

# Conclusion

Manufacturing, engineering, and construction organizations are accelerating their AI+BI maturity—not just to improve analytics, but to unlock smarter, faster, and more scalable operations. This report confirms that companies are advancing beyond isolated pilot projects, with growing investment in automation, semantic governance, and frontline enablement. Early adopters are already seeing tangible gains in productivity, cost savings, and customer satisfaction.

Leading organizations are using AI+BI to:

- Automate legacy data workflows and reduce manual effort
- Enable employees—regardless of technical skill—to ask and answer data questions
- Embed insights directly into field, design, and operations platforms
- Establish data governance frameworks that support accuracy, trust, and compliance

Yet challenges remain. Compliance concerns, inconsistent outputs, and lack of integration continue to slow full-scale adoption. As these industries digitize more of their operations, the ability to trust and act on AI-powered analytics will define who leads—and who lags.

## What to Expect Next

As manufacturing, engineering and construction firms embrace AI-powered analytics, we expect to see:

- Broader use of embedded agents in planning, field ops, and asset management
- More investment in self-serve tools for factory teams and engineers
- Stronger demand for explainability, powered by semantic layers and literacy
- A shift from proving AI+BI to proving business value at scale

AI+BI is no longer about proving capability. It's about proving value. The companies that align infrastructure, governance, and usability will be best equipped to build—and rebuild—with intelligence everywhere.

# Research Methodology

This report is based on the 1H 2025 global survey on AI-powered analytics, conducted by an independent research firm, Dúnedain Research.

- **Survey size:** 235 organizations worldwide
- **Manufacturing, engineering, and construction segment:** 25 organizations
- **Countries represented:** U.S., U.K., Argentina, Brazil, Germany, Sweden, and Thailand
- **Organization sizes:** From under 500 employees to over 20,000
- **Respondent roles:** Data leaders, analytics practitioners, technical architects, and operations stakeholders

Manufacturing, engineering and construction participants represented a mix of global organizations, with geographic distribution across Asia Pacific, Europe, Latin America, the U.K., and the U.S. Each response reflects the perspective of one organization. All responses were anonymized for reporting purposes.

## About the Authors

This report was authored by the research team at Dúnedain Research, specialists in enterprise analytics, AI adoption, and data strategy. The lead analyst, Brett Sheppard, has over two decades of experience in business intelligence—including roles as a Gartner analyst and U.S. military data engineer. The team's work has appeared in publications by Gartner, GigaOM, and O'Reilly, and has been cited by outlets such as Businessweek, Wired, and Computerworld. Their mission is to provide actionable, data-driven insight to help organizations navigate the evolving analytics landscape.

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