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Together makes progress

Advanced Agentic AI Platforms are Revolutionizing Semiconductor Manufacturing and Operations

Global Semiconductor Alliance TECH Summit 2026

Opening: The Paradox

We're Powering the AI Revolution — But Not Using It Ourselves

- The semiconductor industry is enabling global AI adoption, yet AI within our own manufacturing operations hasn't kept pace
- Every major fab has invested in AI initiatives; most leaders would admit returns have been uneven at best
- The technology isn't the bottleneck anymore — the challenges are structural
- Until we address them head-on, AI will remain a ‘science project’ rather than an operational advantage

AI

everywhere else

growth, momentum, value

VS

AI

in our own fabs

stalled, uneven

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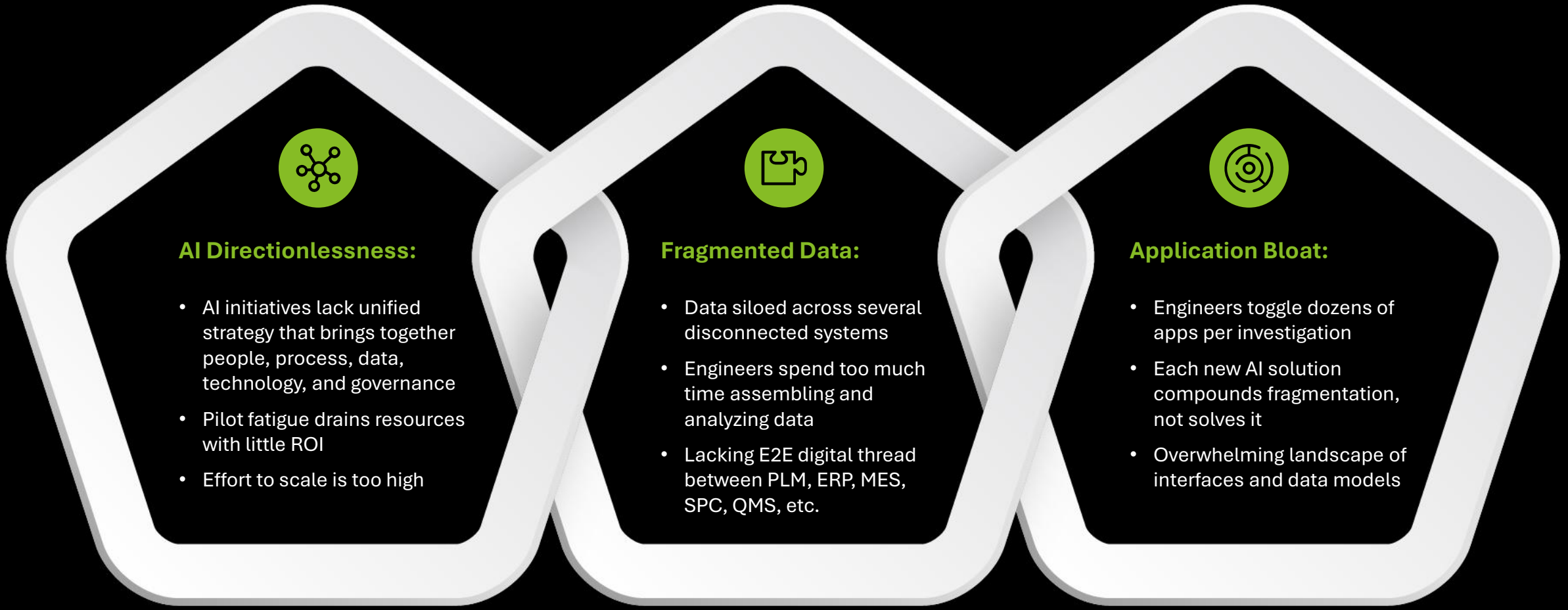
Three Structural Barriers

Three Interconnected Challenges — And Why Solving Them in Isolation Doesn't Work



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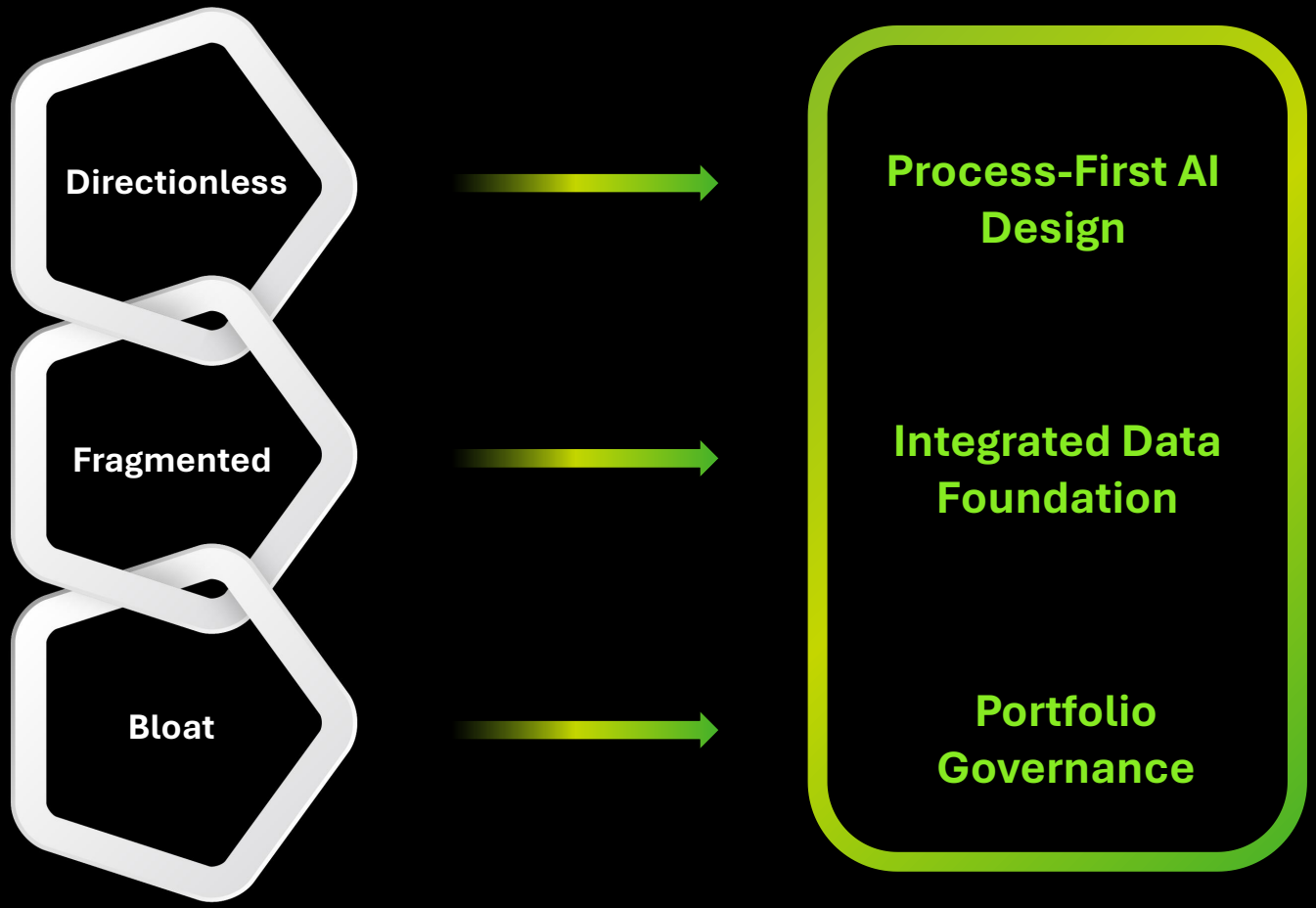
A Fundamentally Different Approach

Purpose-Built AI Platforms — The Shift from Vicious Cycle to Compounding Value

The solution isn't more AI tools — it's a unified platform that connects to existing infrastructure, creates a shared operational model, and delivers targeted use cases with measurable outcomes



Every use case compounds the value of the last — on the same foundation

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Solution Capability 1: Process-First AI Design

Start with the outcome. Work backward to the technology.

1 Define the Specific Outcome

Not "improve yield" — a precise, measurable improvement in a decision engineers make every shift. The outcome is the scope. Without it, every use case is equally valid and none gets built.

What decision needs to improve, for whom, and by how much?

2 Map the Decision, Not the Data

Identify who makes the decision, at what point in the workflow, with what information, and what action follows. This is a process design exercise before it is a technology exercise.

Who decides? When? What do they do next?

3 Identify Data That Serves the Decision

Work backward from the decision to the data it requires — not forward from available data to a possible use case. That inversion is what separates operational AI from science projects.

What data would change this decision if you had it?

4 Design for Action, Not Insight

Every use case must end in something an engineer can do differently. If the output is a report or a dashboard, it is not finished. If it closes with a triggerable action, it is ready to build.

What does the engineer do differently as a result?

ONLY WHEN THESE FOUR STEPS ARE COMPLETE DOES THE TECHNOLOGY QUESTION HAVE A CLEAR ANSWER —
AND THAT ANSWER DEFINES WHAT YOUR ONTOLOGY NEEDS TO MODEL.

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Solution Capability 2: Integrated Data Foundation

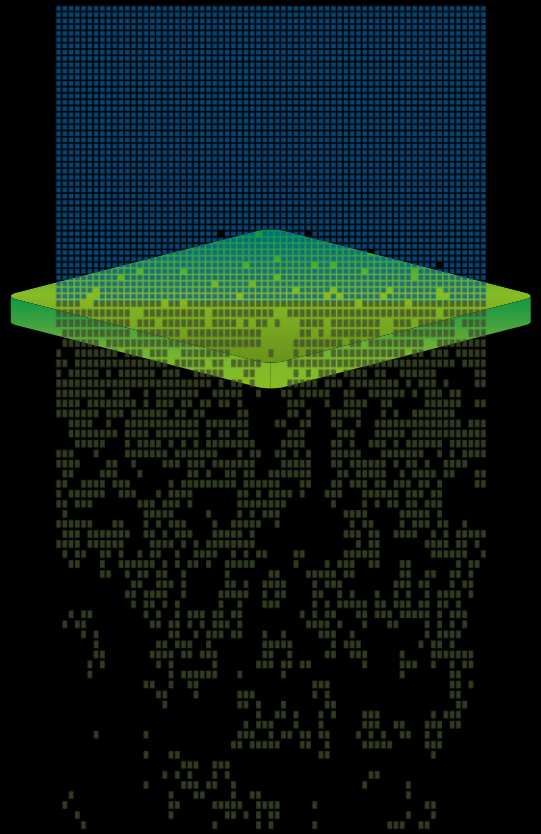
Data foundation and integration layer built for operational decisions, not just reporting

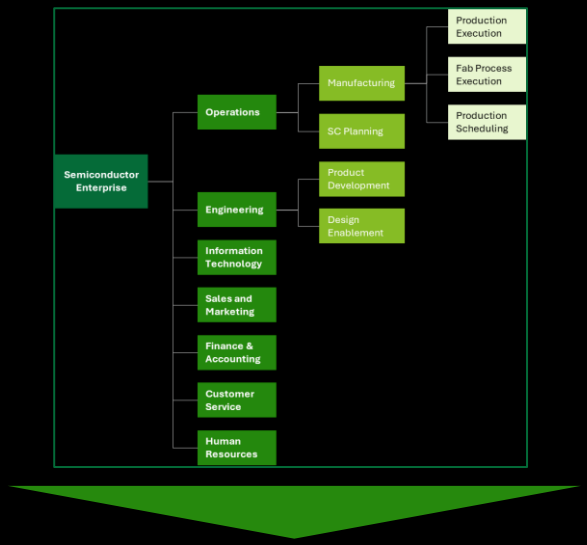
An Ontology is a living operational map of your fab - lots, equipment, recipes, and specs become live objects with relationships, history, and current state.

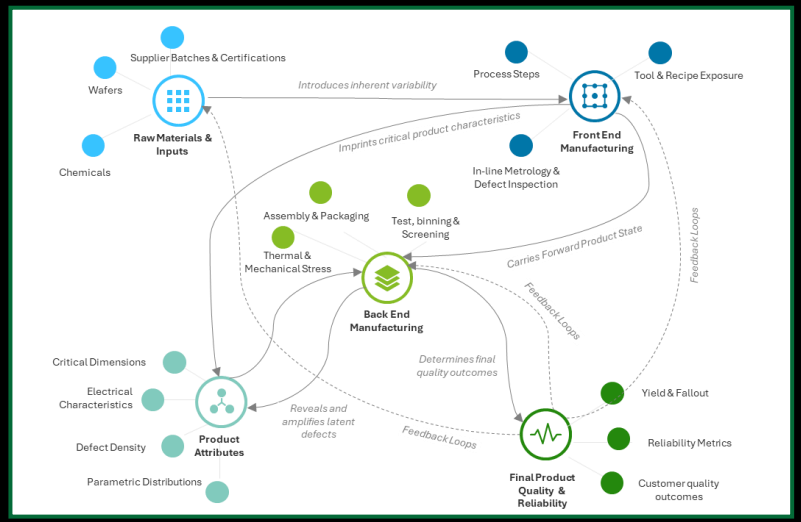
Connects PLM, MES, SPC, QMS, FDC, metrology, recipe management and more into a unified operational model

Cross-fab data access in weeks, not years of custom integration

Engineers investigate once, across all systems — from a single interface







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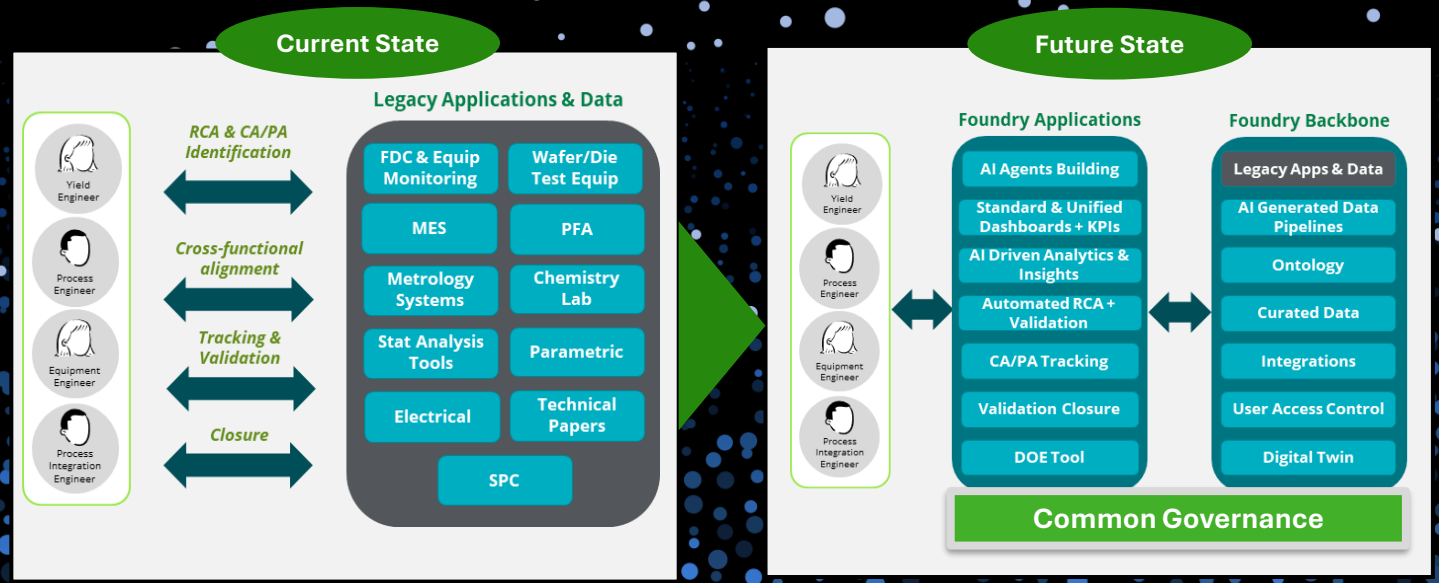
Solution Capability 3: Portfolio Governance

From Application Bloat to One Platform for Investigation, Analysis, and Action

- One environment to investigate, analyze, act, and track outcomes — replacing the multi-tool toggle
- New capabilities deployed as workflows, not separate applications
- Low-code and customizable by role — process, yield, and equipment engineers each see what they need
- New use cases extend the same foundation; they don't add complexity



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The Moment of Decision

The Question Is No Longer Whether It's Possible — But How Quickly We Choose to Move

- What used to take years of custom development can now be accomplished in months
- Pilots delivering measurable value in weeks
- The ability to address all three challenges simultaneously — with a single platform — is new
- Those who move early build compounding advantages that are very hard to replicate

Traditional:
years of integration

- 2026
- 2027
- 2028
- 2029

VS

Agentic Platform approach:
weeks to value

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