

Lean architecture: a new operating model for the agentic industrial enterprise

Why industrial leaders are rethinking SaaS, ERP and
where differentiation should live



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An inflection point for enterprise architecture

Industrial products companies are operating at a profound inflection point.

According to Reuters, since the beginning of 2026, the market has seen more than \$1 trillion in software-as-a-service (SaaS) market capitalization evaporate. This is not a signal of the demise of SaaS but rather a reflection of a deeper realization across capital markets and enterprise leadership teams.

For the first time in nearly 30 years, the economics of software development have fundamentally changed. AI-enabled engineering, automation and agentic tooling have dramatically reduced the cost and time required to build high-quality, production-grade software. Capabilities that once required large, multiyear vendor investments can now be developed and deployed by enterprises faster – and often at lower total cost – than purchasing broadly standardized SaaS solutions.

The long-standing imperative to buy over build and standardize over customize has delivered real benefits. But it has also produced an unintended consequence: a homogenization of capabilities across companies and sectors, and a depletion of discretionary capital needed to invest in truly differentiated customer and operational experiences. As a result, many industrial products organizations now find themselves efficient – but indistinguishable.

Lean architecture emerges in this moment, not as a technological trend but as a strategic response to new economics and new possibilities.

Access to intelligence, agents and orchestration has outpaced architectures designed for static systems.

AI access is no longer the constraint.

Intelligence is more largely available, but coordination is scarce.

Dynamic experiences should be supported.

Experiences must continually evolve over time.

Enterprise resource planning (ERP) centric build models don't scale to change.

Legacy/back-end-first architecture can't keep up as the enabler.

The structural challenge facing industrial products leaders

Across the industrials sector, leaders face a similar pattern:

- ERP and SaaS platforms drive standardization but absorb most transformation capital.
- Customization inside those platforms creates long-term rigidity and technical debt.
- Differentiated customer and operator experiences are deprioritized due to cost.
- Innovation moves slowly, constrained by vendor roadmaps and upgrade cycles.

At the same time, AI now makes it economically viable to develop and deploy custom software and agents directly at the customer and operational edge – where differentiation actually matters.

The challenge is no longer whether to build – but what to build, where to build it and how to govern it at scale.



What is lean architecture?



Lean architecture is a design and operating philosophy built for this new reality. It is grounded in a simple principle:

Keep the core stable. Move differentiation, intelligence and rapid change to the edge.

- This new approach is not anti-SaaS or anti-ERP. It is about using platforms deliberately, not reflexively. In lean architecture:
 - **ERP remains a lean system of record.**
Financial integrity, compliance, master data and core transactions are the focus.
 - **Differentiation is intentionally externalized.**
Customer experiences, orchestration logic and decision intelligence live outside the core.
 - **Change happens continuously without destabilizing the backbone.**
Clean APIs, events and integration layers decouple innovation from upgrades.
- When ERP becomes stable, everything around it can move faster:
 - Minimal customization
 - Standardized upgrade paths
 - Clear APIs and business events exposed outward

The central role of agents in lean architecture

As enterprises move from static processes to continuous decision-making, agents become the primary mechanism by which work is coordinated, optimized and executed across systems.

Two classes of agents

Most industrial products organizations will deploy both of the following:

Platform-specific agents

These are agents provided by enterprise platforms (e.g., ERP, supply chain, workflow, cloud or operational technology (OT) platforms). They are well suited for:

- Embedded enterprise workflows
- Cross-module optimization within a platform
- Standard operating scenarios

Platform-specific agents excel inside the boundary of standard platforms.

Fit-for-purpose custom agents

(at the customer and operational edge)

As organizations move closer to customers, channels, plants and partners, custom agents increasingly make economic and strategic sense. These agents:

- Encode company-specific logic and differentiation
- Evolve rapidly as market and operating conditions change
- Integrate signals across IT and OT environments
- Enable forward-deployed, context-aware decisioning

Lean architecture creates the conditions for these agents to exist without polluting or destabilizing the ERP core.

Why agent governance becomes critical

The rise in agents mirrors an earlier architectural shift: **microservices**.

When microservices first took hold, speed and flexibility improved – but organizations quickly faced:

- Proliferation without visibility
- Inconsistent standards
- Fragile dependencies
- Limited operational control

It was not until platforms for service observability, governance and orchestration emerged that microservices could scale safely. The same dynamic now applies to agents.

As agent swarms begin performing mission-critical tasks – pricing, approvals, scheduling, exception handling – organizations need a way to understand:

- What agents exist
- What they are authorized to do
- How they interact with each other and with platforms
- How outcomes are monitored, governed and improved



The need for an agent registry and control plane

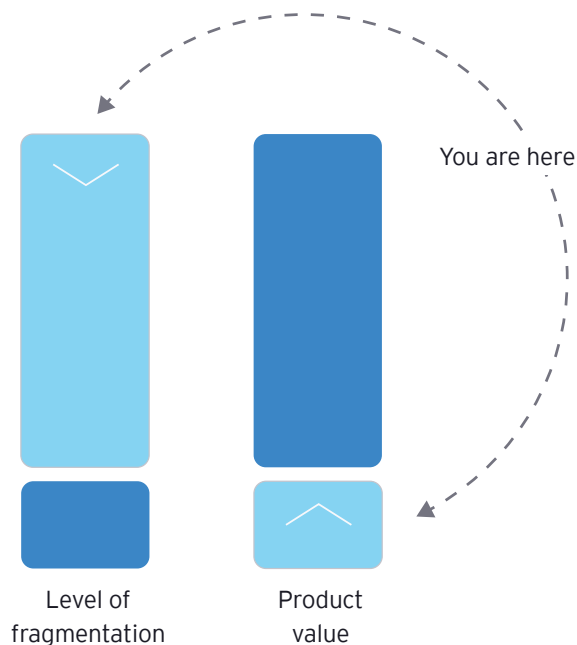
Lean architecture therefore introduces a new functional capability – an agent registry and control plane that provides:

- Agent discovery and lifecycle management
- Policy enforcement and authorization
- Observability and performance monitoring
- Orchestration across platform-specific and custom agents

This control plane enables custom agents and platform-specific agents to work in concert rather than in competition, coordinating work across ERP, OT systems, digital platforms and customer experiences. **It is this capability that makes agentic scale safe, governable and repeatable.**

Smart investment will define defensibility.

Enterprises that protect the ERP core while investing in orchestration and reuse will reduce fragmentation and create faster learning loops with lower downside risk.



Lean architecture in the industrial products context

This model preserves efficiency while restoring the ability to differentiate.

In practice, lean architecture enables:

- A stable ERP core
- Platform-specific agents where standardization adds value
- Custom agents at the customer and operational edge
- A shared agent control plane for governance and orchestration
- Experience layers tailored to operators, planners, engineers and customers



Conclusion

From homogenization to differentiation

The next era of industrial competition will not be won by who standardizes the most – but by who standardizes wisely and differentiates deliberately.

Lean architecture enables organizations to:

- Protect the core
- Invest where it matters
- Deploy agents safely at scale
- Reclaim capital for customer and operational advantage

In a world where building is once again viable, lean architecture defines where building actually makes sense.

EY point of view

EY professionals believe lean architecture is the foundation for the agentic industrial enterprise.

We help industrial products organizations:

- Decide what belongs in ERP – and what should never be there
- Design agent-enabled architectures with clear governance
- Balance platform leverage with custom differentiation
- Convert AI and software economics into real competitive advantage

Our focus is not architecture for its own sake – but architecture that restores strategic choice.



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Lean architecture restores strategic choice — protecting the ERP core while enabling faster learning, safer innovation and real differentiation at the edges.

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