Capgemini RESEARCH INSTITUTE

Executive Brief

Resilient by design

Reinventing supply chains with human-agent operations



Make it real.

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Resilient by design

Reinventing supply chains with human-agent operations

Make it real.

At a glance – Supply chain advantage will come from faster, well-governed decisions, not full autonomy

Disruption is now a constant. Leaders need to make resilience an everyday capability, with people and AI agents working together.

78% **Risk is rising**

Cite geopolitical instability as a significant supply chain challenge, up from 52% in 2025

23% **Visibility remains limited**

Average visibility into tier-2 suppliers, making it harder to detect risks earlier

22% **AI agent adoption is growing**

Are piloting or using AI agents, up from 16% in 2025

Leadership implication

Scale autonomy where it makes sense

84% say people must retain authority to validate AI decisions. Match the level of human oversight to the consequences of each decision.

What should leaders do? Three steps for the next 12-18 months

1. Measure resilience

Create a board-level scorecard covering concentration risk, tier-N visibility, time-to-detect, time-to-decide, and recovery time.

Leadership test: Can we measure our exposure and response speed today?

2. Build a shared decision foundation

Invest in trusted master data, a governed semantic layer, and interoperable platforms before scaling AI agents across functions and partners.

Leadership test: Are people and AI agents working from the same enterprise context?

3. Scale value with the right controls

Start with targeted human-agent workflows. Then add an agentic control plane with clear decision rights, traceability, fail-safes, and human override.

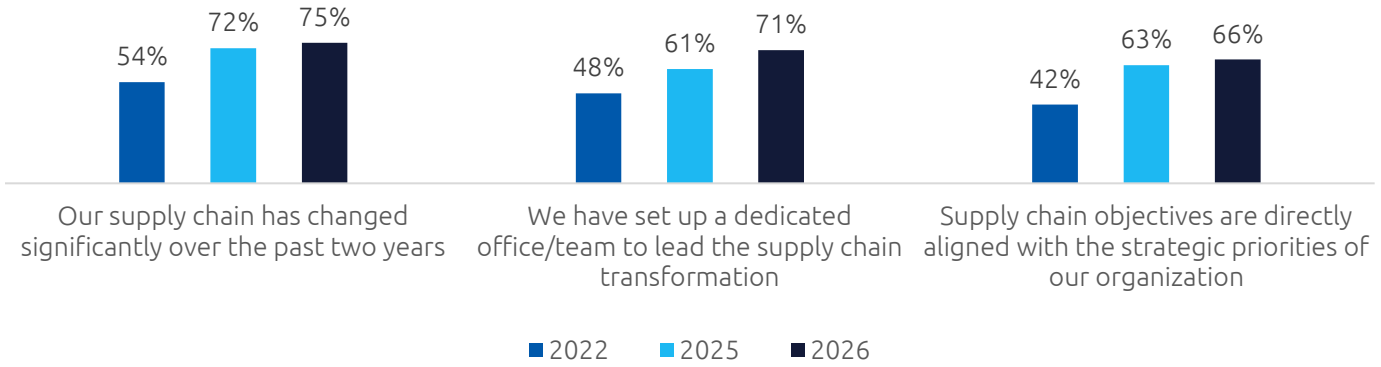
Leadership test: Which decisions should agents execute, recommend, or escalate?

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Supply chain transformation is still top of agenda

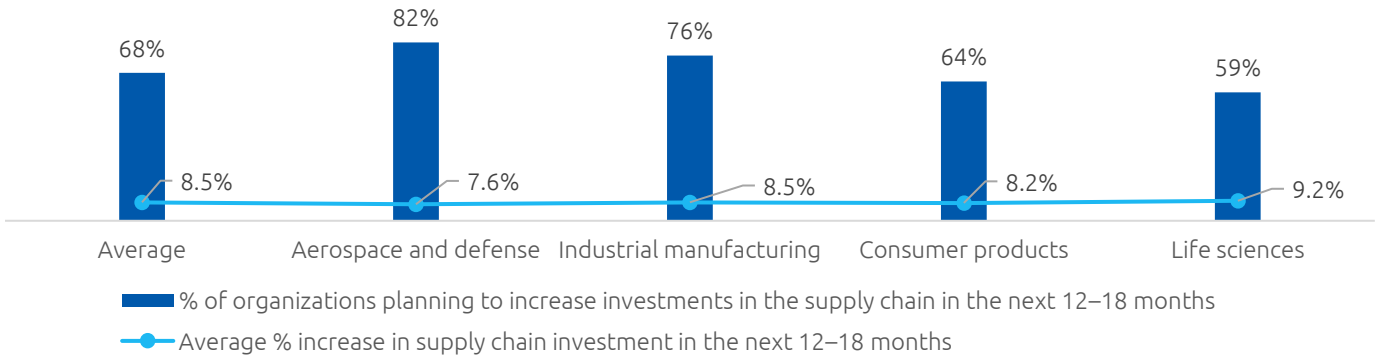
For most organizations, supply chain transformation is a priority

Percentage of organizations who agree with the statements



Supply chain investment is on the upswing

Projected supply chain investment growth in the next 12–18 months, by industry



Source: Capgemini Research Institute, Supply chain survey, July 2026, N = 1,000 executives; New-generation supply chain survey, March–April 2025, N = 1,000 executives; Intelligent supply chain survey, August–September 2022, N = 1,000 organizations.

75% agree that their supply chains have changed significantly over the past few years

In 2026, **68%** plan to increase their investments in supply chain transformation over the next 12–18 months, consistent with 2025 (66%)

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“Demand forecasting has become one of the most important investment areas for modern supply chains.”

Shail Oza

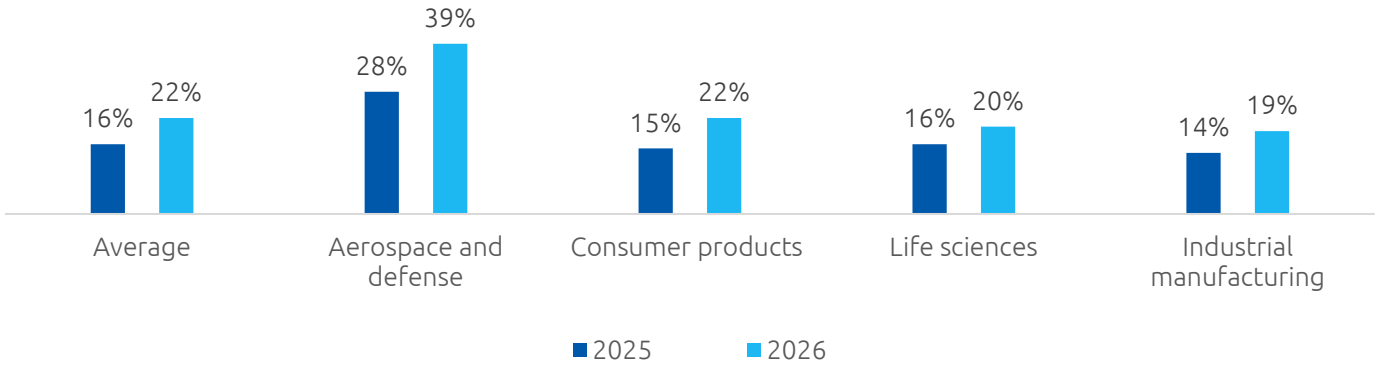
Director, Supply Chain at WestJet

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Agentic AI will redefine supply chain

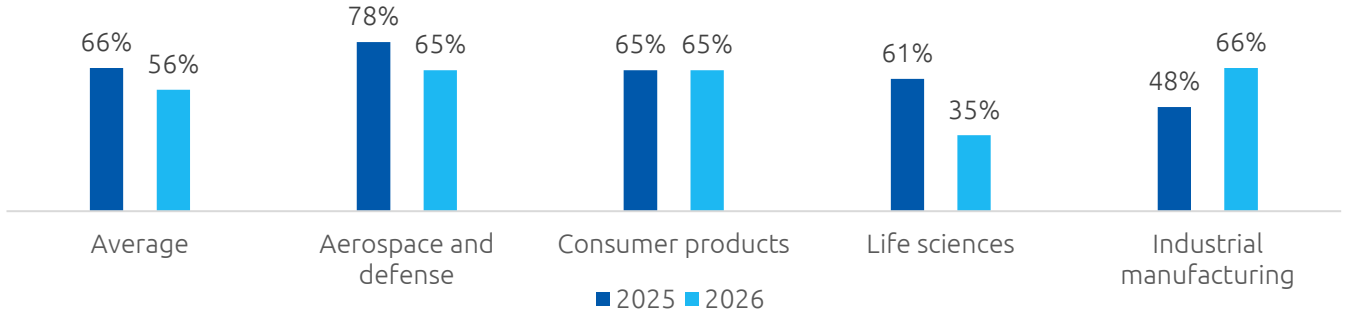
AI agent adoption in supply chains has increased

Percentage of organizations who have piloted or implemented AI agents in supply chain, by industry



Agentic AI will soon be making most business decisions in the supply chain

Percentage of organizations who agree with the statement, by industry: In the next 3–5 years, most business decisions in the supply chain will be taken by AI agents/agentic AI systems

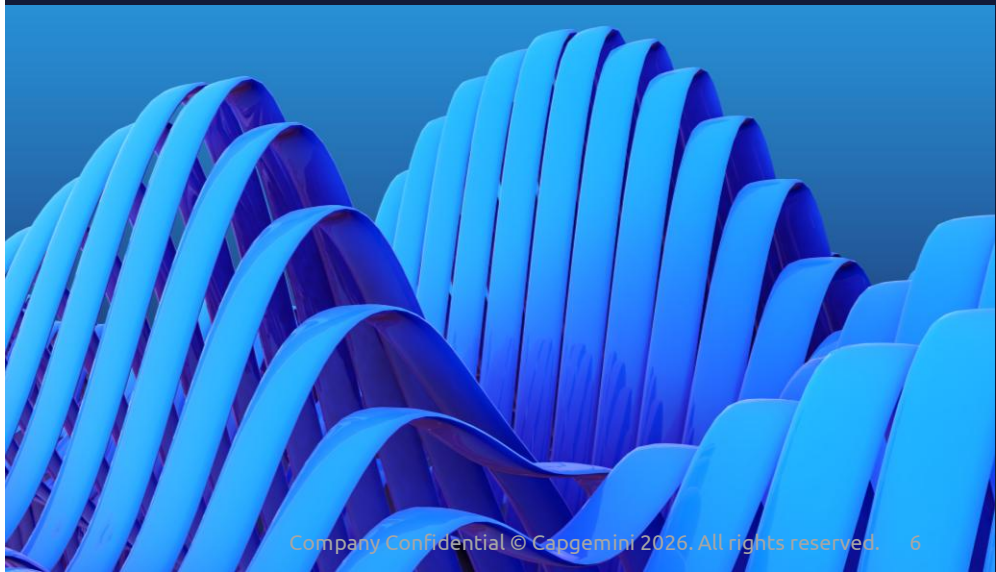


Source: Capgemini Research Institute, Supply chain survey, July 2026, N = 1,000 executives; New-generation supply chain survey, March–April 2025, N = 1,000 executives.

22% of organizations globally have piloted or implemented AI agents in supply chain, up from 16% in 2025

The share of organizations with *no plans to explore AI agents* in supply chain declined from one-third in 2025 to 21% in 2026

56% believe AI agents will make *most* business decisions in supply chain in 3–5 years



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Human oversight will remain essential

Organizations are taking a realistic view of fully automated supply chains

34%

Expect fully automated supply chains within 3–5 years

Human-in-the-loop remains critical

80%

Say inadequate human oversight increases operational and reputational risk

84%

Say humans must retain authority to validate and intervene, consistent with 85% in 2025

Certain organizations lag in readiness for AI agent implementation

55%

Are actively investing in foundational technologies required to enable AI agents at scale

41%

Are building capabilities to support agent-to-agent communication protocols within their technology ecosystem

A practical decision-rights model for human-agent operations

1. AI executes

Monitoring, analysis, routine coordination, low-risk transactions

2. AI escalates

Exceptions, constraint conflicts, material trade-offs, uncertain data

3. Humans decide

High-impact, regulated, ethical, strategic, or irreversible decisions

Our research shows a simultaneous increase in planned adoption of AI agents and lower expectations for full autonomy. Organizations continue to place high emphasis on the human element in agentic AI.

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Resilience is the north star but readiness lags

78%

View geopolitical instability as a significant supply chain challenge (up from 52% in 2025)

- 62% are concerned about maintaining seamless operations, increasing to 91% in A&D
- 71% view import/export tariffs as a significant supply chain challenge today, up from 56% in 2025

98%

Have discussed supply-chain sovereignty with their board

- 73% rank resilience as a top supply chain priority
- 63% say that their senior leadership regularly reviews geopolitical, trade, and localization supply chain risks

54%

Can respond quickly to short-term supply chain distributions

- Ability to respond varies by industry with 46% in industrial manufacturing and 48% in A&D, rising to 68% in life sciences

The intent-to-readiness gap

Only 45% regularly assess foreign-entity dependencies

Only 40% have KPIs to reduce high-risk exposure

Visibility drops from 51% at tier 1 to 23% at tier 2

Geopolitical risk has surged and board attention is high. Operational visibility and measurement remain limited.

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“Resilience and agility will be defining capabilities as supply chains confront risks across geopolitical, climate, and financial dimensions.”

Divya Seethapathy

Director of Global Supply Chain, ODM Operations at Schneider Electric



“Supply chain sovereignty is… about making deliberate decisions around critical products, materials, and capabilities where greater control, resilience, and supply security are required.”

Josh Kim

Director, Supply Chain, Specialty Diagnostic Group at Thermo Fisher Scientific

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Four industries, four pathways to agentic supply chains

Industry economics, regulation, and operating cadence determine where autonomy creates value and where humans must retain control

Aerospace and defense

Sovereign, mission-critical networks

39% AI agent pilots/use

82% Increase investment

Distinctive characteristics

- Long program lifecycles and strict certification
- Multi-tier specialized suppliers and critical-material scarcity
- Digital thread links design, build, logistics, and sustainment

Prioritize component risk and mission readiness

Industrial manufacturing

Asset-intensive, automation-mature

39% expect full automation

65% building agent protocols

Distinctive characteristics

- Complex multi-tier suppliers and critical materials
- Long cycles, customized production, and mature automation
- Standardized processes offer a strong starting point

Scale from repeatable workflows to connected decisions

Consumer products

High-velocity, demand-driven networks

77% cite forecast uncertainty

24% expect full automation

Distinctive characteristics

- High SKU volumes and volatile consumer behavior
- Promotions, weather, and channels shift demand rapidly
- Minute-to-day decisions across the supply chain

Organize agents around end-to-end business outcomes

Life sciences

Regulated, patient-centric systems

12% expect full automation

24% investing in foundations

Distinctive characteristics

- Quality, traceability, and temperature-controlled logistics
- Fragmented sites, CMOs/CDMOs, and logistics partners
- Patient safety and compliance require human accountability

Build shared intelligence for decision support

Source: Capgemini Research Institute, Supply chain survey, July 2026, N = 1,000 executives; New-generation supply chain survey, March–April 2025, N = 1,000 executives.

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Recommendations – Laying the foundations for a resilient AI-powered supply chain

1. Build the data and digital foundation for supply chain

- Build an AI-ready digital foundation by modernizing and standardizing technology infrastructure and digitalizing core processes
- Build a trusted, unified data foundation that integrates data across the end-to-end supply chain and strengthens data quality, and security

2. Accelerate transformation through AI-powered intelligent operations

- Evaluate which supply chain activities must remain in-house and which can be managed through partners
- First target areas where intelligent operations can deliver immediate value, such as standardized, data-heavy, and highly repeatable activities
- Expand into complex, cross-functional processes

3. Establish the semantic layer as the enterprise context for agentic supply chains

- Create a shared, governed representation of supply-chain entities, relationships, constraints, and business rules
- Establish standard definitions for entities such as product, supplier, plant, inventory, order, capacity, lead time, service level, and risk, and document how they relate

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Recommendations – Laying the foundations for a resilient AI-powered supply chain (contd.)

4. Build agentic orchestration for connected decisions across the supply chain ecosystem

- Connect AI agents, business systems, data, and people across the supply chain
- Coordinate AI agents across planning, sourcing, manufacturing, logistics, inventory, and supplier ecosystems
- Escalate exceptions and high-impact trade-offs to human decision makers

5. Deploy an agentic control plane for governance and compliance

- Create policy governance, observability, auditability, compliance controls, performance monitoring, and human override capabilities
- Implement traceability mechanisms that record the data sources, assumptions, decision pathways, and actions associated with agent-influenced outcomes

6. Operate supply chain resilience and agility as a continuously monitored capability

- Embed supply chain resilience into everyday operations and treat resilience as an ongoing business capability rather than a reactive crisis-management function
- Identify which elements of the operating model can be reconfigured rapidly during disruption
- Mitigate vulnerabilities across the supply chain ecosystem and strengthen cybersecurity in operations and partner networks

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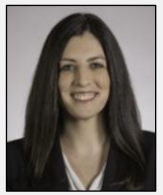


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Download the report here:
https://www.capgemini.com/insights/research-library/reinventing-supply-chains

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We extend our thanks to the industry experts who shared their insights with us



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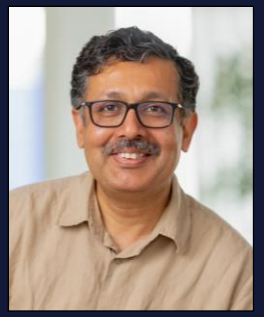
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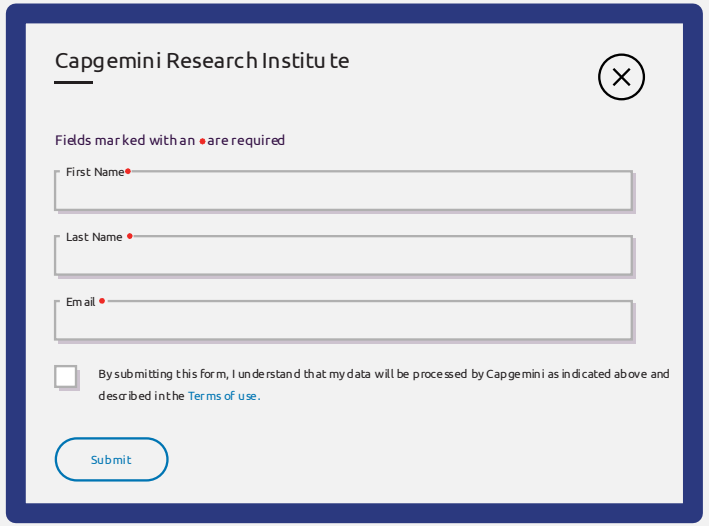
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