KPMG

The new supply chain mandate: Orchestrating decisions in an era of volatility

How to close the gap between planning and execution, scale AI, and build a resilient supply chain architecture that's ready for the disruption ahead

Modernizing the supply chain: The new execution mandate

Supply chain leaders are standing at a once-in-a-generation crossroads. One path leads to familiar ground—escalating drills, eroding margins, and legacy operating approaches that have passed their expiration date. The other promises a way forward to an agile, technology-transformed operation that turns disruption into a competitive advantage.

But while the destination is clear, many leaders are still struggling with a fundamental question: How do we move from ambition to execution?

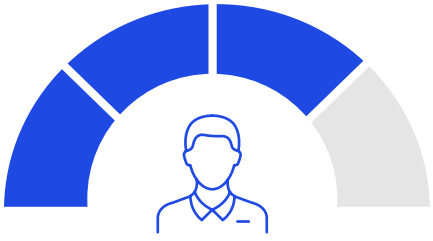
Supply chains have always been complex, of course. But the rules of engagement have radically shifted. As daily disruptions mount—from geopolitical shifts and tariffs to cyber threats and severe weather events—the margin for error has vanished. This pressure to execute is increasing just as traditional planning and execution cycles are breaking down under the weight of compounding volatility. Disruption is moving faster than current operating models can absorb.

Chief supply chain officers (CSCOs) know innovations like artificial intelligence (AI) offer transformative capabilities to navigate this chaos. But the stubborn disconnect between planning and physical execution remains a primary bottleneck. Plans are too slow to build, and decisions are too difficult to execute under expanding real-world constraints. Layering advanced technology onto siloed data, legacy systems, and fragmented workflows only accelerates the noise.

Leaders know that a structural reset is required. In a new KPMG survey,[1] nearly three-quarters (73 percent) of supply chain professionals say they are planning a comprehensive transformation of their operating model within the next three years. That shift is heavily driven by the need for stability, with respondents rating risk management and resilience as their top transformation goal.

With competing priorities on multiple fronts, mapping this journey can feel overwhelming. To help guide the discussion, this paper explores three critical themes: the external pressures eroding margins, the internal structural stresses breaking the operating model, and the emerging importance—and complications—of AI. Then we outline practical steps to help you navigate the path forward to building a supply chain architecture you can trust.

What the survey says



3 in 4 supply chain leaders want to transform their operating model within the next three years.

What supply chain leaders are telling us

This paper draws on insights from the KPMG 2026 Next-Gen Supply Chain Survey, which captures the perspectives of 462 senior supply chain and operations leaders from organizations with $1 billion or more in annual revenue.

Key findings include:

- 73 percent are planning a comprehensive supply chain operating model transformation within three years
- 51 percent rank risk management as their top transformation priority
- 38 percent cite logistics and transportation costs as the biggest source of value leakage
- 77 percent say there is a talent gap in their procurement and supply chain function

The external pressure test: Why volatility is eroding margins

The survey data confirms what most leaders are already experiencing: Supply chain professionals are operating in a radically altered environment. Across industries, they're now managing multiple disruptions per week that impact sourcing, logistics, and demand.

The playbook of the past several decades—built for stable, lean manufacturing—simply cannot absorb the compounding external shocks of the current market. Leaders are simultaneously managing shifting trade policies, persistent inflation, sudden port closures, climate-driven weather events, and sophisticated new cyber threats targeting their network and suppliers.

It's an overwhelming convergence of risks, and the sheer speed of this volatility is scrambling traditional supply chain responses. When external chaos outpaces the organization's ability to respond, the financial damage compounds because:

Reactive mode replaces strategy

Disruption has become the daily operating baseline. And when static, siloed planning cycles fail to account for these continuous shifts, organizations lose their ability to shape outcomes. As a result, doing *something* takes precedence over executing a well-optimized strategy.

Delayed decisions carry a heavy cost

Faced with this unpredictability, many organizations adopt a "wait-and-see" approach, pausing major footprint decisions or capacity reallocations until they have absolute clarity. But waiting for the dust to settle is a dangerous strategy. By the time an issue like a material shortage shows up in traditional planning dashboards or operational KPIs, the window to optimize a response has closed and the financial hit has already occurred.

Execution teams absorb the shock

When macro-level plans fail to account for these rapidly shifting external realities, execution teams pay the price. Warehouse, logistics, and procurement professionals are forced to cover the spread of delayed decisions by blowing through budgets just to keep products moving.

The rise of the "urgency tax"

Rising costs from premium freight, expedited orders, emergency sourcing, excess buffers, and last-minute reallocations are visible symptoms of a fundamental planning and execution breakdown. The resulting margin pressure is essentially an "urgency tax"—the accumulation of late, low-confidence, or infeasible decisions.

What the survey says

High logistics and transportation costs represent the greatest source of value leakage for businesses today, cited by 38 percent of supply chain leaders.

Disruption cadence in the modern supply chain

Disruption is now a continuous operating baseline. Modern supply chains must align their operational rhythms with the speed of change in several core areas:

Disruption	Frequency	Impact	CSCO takeaway
Tariffs and trade policy changes	Throughout the year, with multiple shifts within a single quarter	The value of global imports affected by new tariffs increased more than fourfold in late 2025 compared to the prior 12 months.[2]	Tariffs are no longer an annual planning exercise. You need ready-to-execute contingency plans for sourcing, pricing, and inventory to adapt the moment new rules drop.
Supplier lead time and capacity conditions	Month to month, with lingering effects over multiple months	Supplier deliveries had slowed for 16 consecutive months through the first quarter of 2026.[3]	Treat supplier lead times and capacity as variable operating parameters, not static master data. Refresh assumptions at least monthly in planning and sales and operations execution (S&OE).
Logistics disruptions	Week to week	Global container spot rates can be highly volatile, with index averages spiking 12 percent—and specific lanes surging up to 20 percent—in a single week in May 2026.[4]	Shift to weekly lane reviews and automated exception routing. Managing transportation costs against a static quarterly average will lead to margin leakage.
Demand signals and order-pattern shifts	Daily to weekly in fast-moving channels and categories	A single viral video or trending hashtag can translate into a tenfold increase in consumer demand within 24 to 48 hours.[5]	Monthly demand reviews for critical SKUs and channels is now a risk. Use daily sensing where possible, and weekly rebalancing where action is needed.
Weather and climate-related events	Multiple major events annually, with rising severity	The US averaged 23 weather and climate disasters that caused $1 billion or more in damages per year from 2020 to 2024—up from a historical average of 9 per year.[6]	Stop treating severe weather as a black swan event. Prequalify alternate shipping lanes, shift inventory buffers to protect vulnerable nodes, and stress-test supplier redundancy.
Cyber and third-party network threats	Constant risk; critical third-party network breaches can strike at any time	More than 70 percent of supply organizations experienced at least one material third-party cybersecurity incident in 2025,[7] and cyber risk was cited as the top overall threat by supply chain leaders.[8]	Treat cyber resilience as a physical supply chain constraint. Continuously evaluate and enhance your own defenses and build continuous vendor monitoring and automated network-isolation protocols into your architecture.

Why the supply chain planning and execution process is broken

Modern supply chains demand agility and precise, real-time orchestration. But many organizations are attempting to meet these fast-moving demands using an outdated, structurally fractured operating model.

A core issue is the massive wall dividing the planning phase from on-the-ground execution. When organizations try to run today's global networks on yesterday's patchwork of disconnected systems, the process breaks down across several operational fault lines:

System and data fragmentation

Many organizations are running networks on a disconnected mix of enterprise resource planning (ERP) systems, stand-alone supply chain solutions, and manual spreadsheets. Planners build forecasts using isolated data sets, while execution teams are forced to manually piece together their version of "reality" on the warehouse floor. The business overall lacks a single source of truth.

The execution disconnect

Macro plans routinely assume ideal capacity and delivery conditions. If a plan ignores real-world constraints—like supplier limits, congested logistics corridors, or local labor shortages—then it becomes operationally useless at the time of execution.

Supplier blind spots

Supply chain disconnects extend far beyond the four walls of the enterprise. Organizations lack visibility into Tier 2 and Tier 3 suppliers, let alone the Tier 5 visibility that some regulators may soon require. Upstream constraints too often remain dangerously hidden until they trigger a downstream crisis.

A mutual breakdown of trust

Because systems are disconnected, workarounds become the norm on both sides of the divide. Planners frequently override the data with their own intuition, fiddling with model-driven forecasts to protect specific categories. On the other side, execution teams often ignore plans because the recommendations are built on made-in-a-vacuum assumptions that make them impossible to effectively carry out on the floor.

These routine breakdowns train the entire organization to distrust the system, sending a clear signal that the tools are generating plans the business simply cannot execute. And so everyone reverts to instinct. Planners second-guess the tools, operators second-guess the plans, and the entire business settles into continuous cycles of reactive drills and expedites. It's heroic in the moment—but it's not sustainable.

What the survey says

77% of leaders say there is a talent gap within their procurement and supply chain functions.

The anatomy of a broken plan

When an organization experiences persistent margin leakage across its supply chain, the root cause usually lies within the planning architecture. Here are five red flags that may be signs your operating model is actively failing:

1

No shared truth

Departments operate from multiple, conflicting data sets.

2

Static constraints

The system assumes perfect supplier lead times that rarely match historical reality.

3

No decision ownership

It's often unclear who makes the call when a major trade-off is required.

4

No governed escalation

Exceptions trigger panic rather than a structured workflow.

5

No feedback loop

Daily execution realities fail to influence the next macro planning cycle.

The AI execution gap: Algorithms can't fix broken processes

CSCOs know AI is a transformative capability. Enhanced planning is a prime target, with the promise of sharper forecasts, dynamic scenario modeling, optimized inventory, and more. AI also has significant potential to revolutionize physical operations through innovations like mode analysis and carrier optimization, transportation rate improvements, and four walls and third-party logistics optimization.

While organizations are all-in on AI, actually turning its potential into scalable, sustainable innovation remains a work in progress. Per another recent KPMG survey,[9] AI investment is set to double year-over-year, even as 65 percent of respondents acknowledge that their organizations are still struggling to scale their AI use cases—*double* last year's rate.

But AI doesn't fail because the models are wrong—it fails because the organization isn't structured to act on what the model is telling it. More and more operations are trying to run machine-speed intelligence on human-speed systems. And when teams attempt to scale advanced tools across these outdated architectures, the technology often exposes structural barriers, rather than fixing them. These include:

The pilot versus scaling trap

AI models often perform exceptionally well in narrow, tightly controlled use cases where scope is restricted. But when organizations attempt to scale that logic across a global network of siloed ERPs and legacy tools, they inadvertently create disconnected franken-systems.

Automating chaos

Dropping advanced AI into a disconnected process rarely leads to new efficiencies. Instead, it can accelerate the speed at which bad assumptions create noise. If the underlying logistics data is lagging, for example, then AI simply executes a bad shipping decision faster.

The execution bottleneck

Confidence in handling volatility is dangerously detached from technical reality. A large majority of supply chain professionals (88 percent) report feeling well-prepared to rapidly respond to a disruption; yet two-thirds (66 percent) cite gaps in AI and advanced analytics capabilities as the most significant constraint limiting their actual execution.

To break this cycle, organizations must rethink how they deploy new tools. Scaling successfully requires ditching generic software rollouts and instead defining specific, repeatable operational archetypes—value-driving use cases that can be tested and meticulously replicated across the network. For example, this might mean perfecting an automated replenishment process for a single, high-volume product category, or deploying a dynamic freight-routing model on one highly volatile shipping lane as a starting point.

The goal is *not* to have AI add to the daily noise of exception management. AI should be the intuitive orchestration layer that empowers teams to be more proactive, collaborative, and productive. But getting there requires abandoning the idea that technology alone is the answer. True scale demands a deliberate focus on how decisions are made and whether the physical network is ready to execute them.

What the survey says

Two-thirds of supply chain leaders have moved beyond AI exploration, with 43 percent having successfully implemented AI in one or more areas and another 23 percent actively scaling those capabilities.

It's not you, it's your data

OK, so your supply chain data isn't perfect. But just about every organization today has data challenges: fragmented ERPs, manual spreadsheets, multiple sources for the same input, governance gaps across the extended network—you know the drill.

But you don't need *perfect*, enterprise-wide data parity to launch an intelligent tool. You need business-ready data—usable, connected, and trusted enough to support faster decisions right where they happen. You can build that foundation over time. But the key is to stop waiting for a multiyear data-cleansing project before you're ready to get started. Actionable moves include:

Establish a baseline by using the data you have, structuring it around key supply chain drivers (like true supplier lead times or exact inventory positions), and assessing the accuracy and gaps.

Connect critical flows that prioritize high-impact data links. For example, you can link a demand forecast to a supplier's production plan using a digital "handshake" that sets pre-agreed tolerances for automatic updates and uses collaborative agents to resolve exceptions.

Embed automation to streamline process handoffs from trusted sources while bypassing manual data prep. AI can then mine that connected data to model scenarios and accelerate forecasting.

Build trust by ensuring visibility into data sources, consistency across systems, and absolute clarity in the algorithm's assumptions.

The path to a modern supply chain decision system

Advanced technology is useless without an architecture that actually connects intelligence to action. To break the cycle of disconnected planning and constant expediting, organizations need a supply chain decision system: an integrated operating framework that connects raw data signals to real-world constraints, clear decision rights, and governed workflows.

This architecture is what translates intelligent insights into physical execution. It aligns three critical pillars to help ensure decisions are made earlier, faster, and with greater confidence:

Signals

Consolidating demand forecasts, inventory positions, commercial plans, and supplier commitments into a single, trusted view.

Constraints

Capturing both physical realities (factory capacity, minimum order quantities) and business rules (tariffs, labor regulations) directly within the system logic.

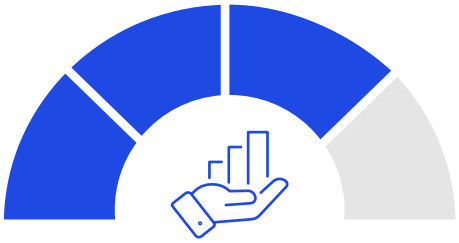
Decisions and workflows

Defining exactly what gets decided, who has the authority to decide it, and how those choices connect to execution across the business.

When these pillars are aligned, the operating model shifts fundamentally. Instead of reacting to every alert with another workaround, the organization moves to governed orchestration. A unified decision system actively resolves standard network exceptions based on preset rules. It clears the baseline clutter so human planners can focus strictly on high-stakes escalations. Advanced technology turns exception management into escalation management.

Achieving this requires bridging the gap between planning and execution. Organizations must tightly integrate their long-term sales and operations planning (S&OP) with their daily S&OE, ensuring the realities of today's warehouse floor actively shape tomorrow's macro plan.

What the survey says



78% of supply chain leaders expect their operations to reach a moderate-to-high level of autonomy by 2027.

Do you have a decision system, or just planning tools?

If you aren't sure where your current architecture stands, then ask your team these five questions:

1. Are critical trade-offs relitigated weekly in committee or made once and executed at the speed of disruption?
2. Are supplier, logistics, and capacity constraints accurately represented in the plan and trusted by execution teams?
3. Is your algorithm engineered for scalability across the network or trapped in highly customized, disconnected pilots?
4. Are exceptions routed intelligently by impact and ownership, or do planners spend more time reconciling data than managing escalations?
5. Does daily execution data actively influence tomorrow's plan or does the system just react to today's issues?

How to start upgrading supply chain execution

Building agility and resilience into the network doesn't require executing a massive reshoring effort or replacing systems from the ground up. It starts with fixing how decisions are made and executed across the network. Organizations must take targeted, step-by-step actions that address immediate operational pain points while laying the groundwork for a broader transformation. You can't fix everything at once, but you can begin with the issues that are driving the most value leakage.

Leading executives are breaking the cycle of hesitation and moving toward a resilient architecture by following a clear, pragmatic roadmap:

Phase 1: Address margin leakage

Reset your strategy by targeting the highest point of financial pain. Start with the specific domain generating the highest value leakage—such as a volatile logistics corridor or a highly constrained supplier network. Establish the minimum viable data required to power one specific operational archetype in this area, bypassing the need for a multiyear master data overhaul.

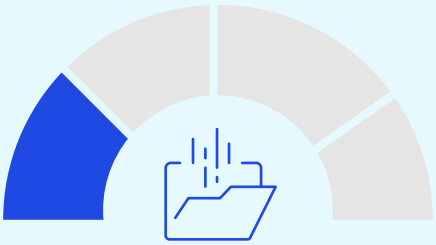
Phase 2: Establish governance before technology

Once you identify the target area, explicitly map the decision rights before deploying a new tool. Define exactly who owns the escalation when the plan breaks, and build the cross-functional operating rhythm required to support them. If the governance is undefined, the technology will stall out.

Phase 3: Launch, measure, and scale

With governance in place, deploy the initial archetype. Capture the ROI and margin protection generated from this focused use case, and use the cost efficiencies to fund the broader enterprise rollout. Demonstrating early success proves to the business that execution speed translates directly into network resilience.

What the survey says



30%

To overcome AI deployment challenges, of respondents are prioritizing the upgrade or replacement of existing ERPs for better data integration—acknowledging that the first step to scale is fixing the foundation.

How KPMG helps build a decision-driven supply chain

Most supply chain transformations stall because they focus purely on implementing new software and tools rather than fixing the underlying processes. KPMG professionals focus on the entire architecture—from initial strategy to execution and support. We help you build the governed decision system required to deliver sustained value in the supply chain at scale. We help our clients:

Transform the operating model

Modern supply chains demand true agility and resilience. We help you establish clear integrated business planning (IBP), S&OP, and S&OE roles, define escalation paths, and assign decision ownership across the enterprise to replace manual or legacy processes with governed execution.

Set a targeted AI and data strategy

To help ensure you tackle the right use cases, we define exactly where AI should be deployed, how initiatives should be sequenced, and what operational readiness conditions must exist before scaling through governed archetypes.

Manage risk with a unified command center

We help executives establish a complete, wide-ranging view of their network. Leveraging AI-enabled risk predictions and scenario simulations, we empower your supply chain to respond to disruptions proactively and rapidly from a single control tower.

Sustain performance with Planning as a Service (PaaS)

We help organizations stand up and maintain an active operating layer that maintains plan health, tunes system parameters, and monitors model drift. Our fully managed PaaS offering provides scalable, outcome-driven support that resolves exceptions and delivers execution-ready outputs directly back into your enterprise systems.

Authors/Bios

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Chris serves as the KPMG LLP (US) Consulting Leader for Supply Chain & Procurement. In his role, Chris works closely with supply chain, procurement, and operations leaders to turn strategic vision into reality. He is also responsible for identifying our supply chain and procurement priorities, growth areas, and capabilities to best serve our clients. Chris and his teams take advantage of next-generation business models, emerging technologies, and industry experience to enhance supply base engagement and drive results that matter.

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Sean is a managing director in the KPMG Consumer & Operations Commercial Operations practice. He helps companies transform their supply chain leveraging his 27 years of experience in strategic planning, designing, developing, and implementing leading practices and technology solutions focused on the industrial manufacturing and technology industries. His primary area of focus is supply chain execution where he helps companies enable order-to-cash efficiencies, manufacturing improvement, supply chain visibility and collaboration, and supply chain IT transformation roadmaps.

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