6 Strategies for Building an Adaptive Supply Chain

Executive summary

Everywhere you look, chief supply chain officers (CSCOs) are battling a barrage of challenges. Lingering inflation is pinching profits. Changing consumer preferences are putting pressure on delivery lead times. Disruptions from climate change and geopolitical conflicts are now the norm. And regulatory changes are stretching supply chains to their limits.

1 in 20 companies every year for the past several years has suffered a supply chain disruption costing at least **$100 million**.[1]

Without the proper strategy to combat these challenges, modern supply chains are extremely high risk. They're characterized by a fire-fighting culture, meaning supply chain teams constantly react to disruptions without a clear plan, and they make isolated decisions. However, without a complete understanding of how those decisions impact operations across the entire organization, the results are typically increased costs, constrained planning, and poor resource allocation.

High Risk Supply Chain
Disruptions expose inefficiencies

Fragile
Increased Exposure to Risk

- Vulnerable to disruption
- Rigid processes
- Single point failures
- Reactionary & repetitive risk cycle

Fragmented
Fire-Fight Culture

- Siloed visibility & processes
- Disparate systems
- Localized decisions
- Disconnected financial & operational planning

Imbalanced
Objective Misalignment

- Increased costs
- Lost sales
- Feasible not optimal
- Suboptimal resource allocation

But there's an opportunity to turn these challenges into a competitive advantage. With the right strategies and technology, companies can proactively design and plan their supply chains for optimal business performance while executing seamlessly with their supplier partners. We call this the **Adaptive Supply Chain**, and it's a way for companies to gain a competitive edge. Businesses that adopt the Adaptive Supply Chain approach will not only survive but thrive in today's turbulent environment.

$1.6 trillion in revenue growth opportunity left on the table from disruptions.

Resilient companies capture **+3.6%** more revenue than their less resilient competitors.[2]

What exactly is the adaptive supply chain? The adaptive supply chain is hyper-responsive and flexible, capable of adjusting quickly and precisely to supply chain disruptions or unforeseen challenges, changes in demand, and market conditions. It embraces collaboration, harnesses real-time data, prioritizes sustainability, and leverages technology to make informed, proactive decisions. It doesn't just react to what's happening, but proactively identifies opportunities and potential challenges ahead of time.

There are three key pillars of the Adaptive Supply Chain: **integrated**, **antifragile** and **optimized**.

The Adaptive Supply Chain

Seize opportunities to thrive during uncertainty

Integrated	Antifragile	Optimized
Integrated Scenario Planning	Collaborative Supply Networks	Integrated Scenario Planning
Proactive Risk Mitgation		ESG Roadmap
People and Processes	Proactive Risk Mitgation	AI Adoption

The **integration** of operational data from across the organization and from suppliers provides end-to-end visibility, allowing companies to unite financial and operational planning decisions. Once data is integrated, companies are empowered to dynamically test the supply chain under different situations and understand how they would impact service levels and profits. The ability to stress-test the supply chain and create contingency plans ahead of disruptions builds **antifragility**. Add on a highly skilled workforce and powerful AI and optimization tools, and companies are well-positioned to **optimize** operations at all levels to multiply margins despite any uncertainty.

CSCOs and their teams who create adaptive supply chains can improve service levels to increase customer satisfaction while also better managing direct supply chain costs to boost the bottom line. With the right approach, supply chains are not something to merely be managed, but a strategic asset to the organization — driving sustainable, long-term growth by constantly adapting to a fast-changing world.

Let's explore six key strategies and technological tools that can help companies achieve the three pillars of the adaptive supply chain.

Strategy 1: Improve performance with integrated scenario planning

🤝 Integrated   **✓ Optimized**

Challenge: *A U.S.-based coffee manufacturer is grappling with late deliveries and production schedule disruptions due to supply chain turbulence caused by adverse weather in Brazil. This situation threatens revenue and operational efficiency, leading to increased costs and missed opportunities.*

Solution: *By leveraging integrated scenario planning (ISP), this manufacturer proactively designed supply chain alternatives, securing partnerships with suppliers in Belize and Honduras. This preemptive strategy ensured business continuity, protected revenue, and mitigated the financial impact of the supply chain disruption.*
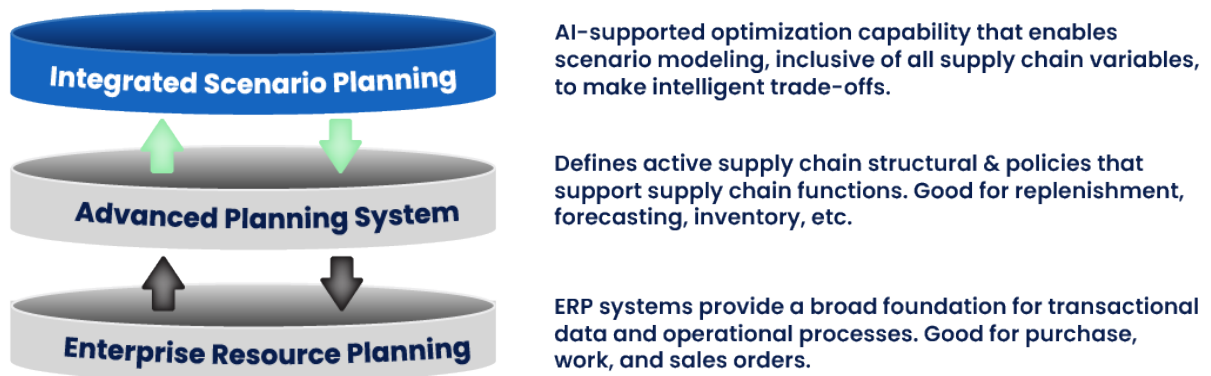
Today, more complex scenario planning is required for everything from mergers and acquisitions to supplier changes to material shortages and logistical surprises. The challenge lies in supporting ambitious commercial strategies while navigating the day-to-day operational complexities of the supply chain.

Most companies are familiar with advanced planning systems (APS), which offer operational support by solving immediate supply and demand fluctuations. However, APSs fall short when it comes to strategic decision-making that involves new variables across different time horizons. This is because an APS is designed to solve problems at the operational, tactical level, rather than a strategic, holistic level. For example, let's say one of your key suppliers suddenly runs into a production issue and now you're facing a supplier bottleneck. An APS will identify the next priority supplier, but it may not help you factor in all the other elements — such as

optimal transportation routes to minimize total costs and improve customer service levels — as you pivot to the next-best-supplier. In other words, it solves for one piece of, but not the whole puzzle.

So while these systems work great for quick fixes, they're not enough for CSCOs to understand the impact of strategic decisions at every layer of the supply chain, from procurement to production to distribution. In reality, very few companies can run effective scenario analyses to determine the financial and operational consequences of important decisions.[3] That's where integrated scenario (ISP) makes the difference.

Integrated Scenario Planning (ISP)

Integrated Scenario Planning

Advanced Planning System

Enterprise Resource Planning

AI-supported optimization capability that enables scenario modeling, inclusive of all supply chain variables, to make intelligent trade-offs.

Defines active supply chain structural & policies that support supply chain functions. Good for replenishment, forecasting, inventory, etc.

ERP systems provide a broad foundation for transactional data and operational processes. Good for purchase, work, and sales orders.

ISP is a powerful tool that connects strategy with execution, enabling leadership teams to make informed decisions that not only mitigate risks but also unlock new growth opportunities. It does this with:

An integrated core: With several systems and workflows, ISP takes data from across the entire organization and integrates and aggregates it accordingly. This brings procurement, production, distribution, and finance together for better coordination and more informed decision-making across the organization.

Scenario-based action plans: The organization can use that integrated data to model scenarios more accurately within its digital twin. By testing supply chain resilience against potential future scenarios and accounting for all variables across the supply chain, executives can make data-driven decisions that enhance agility, improve resiliency, and reduce risks.

Planning-driven alignment: ISP translates strategic decisions into executable plans that optimize costs, maintain flexibility, and meet business objectives such as sustainability and growth. By uniting planning tools (ERP, PO orders, and invoicing, for example) with design, organizations can support faster, more efficient S&OP processes and truly optimize operations from end to end.

ISP brings data, processes, and people together across an organization to rapidly optimize the supply chain across different variables. Organizations can compile scenarios into a time-phased transformation roadmap, helping to align executive decision-making with strategic goals to drive margin improvements and long-term success.

Coupa Case Study

Onsemi – a leader in providing energy-efficient parts for technologies across several industries — struggled to plan production capacity across four of its business units. The sales team didn't know which orders to accept, decline, or subcontract, and routinely needed to pull in site-level engineers to make decisions. After adopting Coupa's platform, Onsemi integrated machine and tool-level constraint data across multiple factories into one place, giving them the ability to standardize and scale their S&OP process. Previously, it took three weeks to make production decisions. Now, they're made in three days or less. Site-level engineers don't need to intervene anymore either, leading to a 10-15% increase in capital efficiency.

Strategy 2: Get proactive about risk management with real-time data

🤝 **Integrated**   🔄 **Antifragile**

Challenge: *A technology company that supports the energy sector noticed an uptick in port strikes on the East Coast. With much of its supply chain operating there, the company anticipated delays.*

Solution: *The company establishes a risk management system that uses a risk matrix, real-time data, and a digital twin. The matrix also includes internal capabilities and external factors to identify bottlenecks. Areas that could be impacted by port strikes, for instance, are marked as "high risk" in the matrix. The system pinpoints the supply chain's weakest link and then uses a digital twin to test several scenarios on an operational and tactical basis, helping the company create contingency plans ahead of time.*

For most companies (57%), it takes a week or more just to be alerted to a production or supply network disruption. When disruptions do surface, 80% of executives say it takes an additional week or more to assess the disruption's impact.[4]

Adaptive supply chains can identify potential disruptions, understand the severity of their impact on operations, and take proactive measures to mitigate them by leveraging real-time risk and compliance data and a digital twin. This data-driven approach enables companies to go from reacting to disruptions after they happen to anticipating them and responding proactively with confidence. With a plan in place, companies are empowered to outmaneuver unexpected events, keep operations running smoothly, and protect margins in the process. Quick decision-making in these crucial moments is what gives companies a competitive advantage to thrive during turbulent market conditions.

To build a proactive risk management system, companies need visibility into risk data from suppliers and market conditions. Centralized risk tracking on one platform across legal, financial, and ecological areas can help companies be alerted to potential disruptions or

compliance issues before they wreak havoc on operations. It also facilitates the incorporation of risk scores into supply chain design. That way, alternative scenario planning can occur on an operational basis so actionable contingency plans can be adjusted to the situation. This is in contrast to traditional network optimization, which happens far less frequently.

A typical workflow of a risk management system might look like this:

1. **Identify potential problems:** Proactively identify high-risk operations, such as natural disasters or congested logistical channels, and provide a level for their risk severity. Feed this information into the supply chain design tool.

2. **Evaluate alternatives:** Run multiple optimization scenarios with varying inputs, such as shifting transportation methods like rail or air freight or rebalancing inventory to ensure continuous supply. This real-time feedback lets companies understand each option's cost, time, and feasibility.

3. **Finalize a plan:** With scenarios in hand, prepare clear action plans for various contingencies, ensuring that no matter what, the supply chain remains resilient.

An even more proactive approach is integrating regulatory requirements into the sourcing process, ensuring compliance, minimizing risk, and managing supplier certifications more effectively. Together with strategic sourcing and proactive supply chain risk management, companies can reduce risk from the start, and scenarios can be planned on a regular basis to adjust when threats emerge.

Coupa Case Study

Multinational food processing and packaging company Tetra Pak operates in over 160 countries and is a leader in sustainable packaging solutions. From sourcing raw materials and ingredients to warehouse distribution, Tetra Pak has complex sourcing needs. The company uses Coupa Sourcing Optimization to reduce supplier risk, manage its logistics categories, and meet its ambitious goal to be net zero by 2050. When it comes to producing accurate forecasts, Sourcing Optimization takes supplier data and translates it into the measurements required for Tetra Pak's operations. With relevant data in hand, Tetra Pak can make smarter decisions when managing suppliers. And the ability to include greenhouse gas emissions in tenders ensures the company only works with suppliers that align with its sustainability goals.

Strategy 3: Strengthen resiliency through collaborative supply networks

Antifragile

Challenge: *A global e-automotive manufacturer struggles with limited visibility into its chip supplier's processes, which results in delays and higher costs.*

Solution: *By adopting supply chain collaboration tools, the auto manufacturer gains real-time visibility into its supplier's forecasts, capacity, and delivery schedules. This leads to better planning and coordination, helping to reduce lead times and improve cost efficiency.*

In adaptive supply chains, companies collaborate with their suppliers to share critical information. Suppliers and organizations become true partners who can handle disruptions together by communicating more frequently, streamlining workflows, and working from the same operational data. This level of collaboration allows for better planning and optimization of the supply chain, ensuring the right products are available at the right time.

Successful supply chain collaboration consists of three main components: **sharing transactional data and processes, integrating supply chain management information,** and **making strategic decisions together.**

Sharing transactional data and processes

There is a seamless flow of basic business information and processes, such as confirming purchase orders, sending invoices, and issuing payments between the organization and the supplier. Most organizations achieve this by using an intelligent and integrated spend management platform.

Purchase order collaboration is a good place for businesses to start. Organizations need the ability to confirm quantities, set prices, and promise delivery dates on purchase orders by the line-item level. Plus, they need automatic alerts when a supplier notes potential material shortages or other disruptions that may impact the delivery of critical production materials. This enables a quick and efficient way to negotiate alternative materials, alter pricing, or stagger delivery times.

Integrating supply chain management information

Businesses and suppliers should integrate and share operational data in one place. This data may come from production forecasts, demand forecasts, product availability, service levels, and more. This helps suppliers know the amount of products expected for the next three, six, or even 12 months so they can proactively plan capacity to meet those needs. The power to identify demand mismatches early allows both businesses to operate more effectively and smoothly.

Making strategic decisions together

Naturally, suppliers and buyers have different priorities. Suppliers aim to get paid fast and secure consistent business. Companies want to secure the lowest price with accurate delivery times. These differences can lead to constant price squeezing, poor material quality, and strained relationships. Supply chain collaboration helps bridge the gap by offering transparency into data and encouraging unified decision-making. Both parties then benefit from steadier business with fewer operational surprises. Suppliers will also be happy to see payment status and get paid the right amount faster.

To make decisions quickly and efficiently, companies need the right communication tools. An integrated, in-context messaging system streamlines decision-making without the need for phone calls or emails. The easier supply chain collaboration tools are to use, the easier it is to get supplier buy-in to adopt the technology and adapt to new workflows. Look for tools that don't require lengthy implementation or additional fees for suppliers.

Coupa Case Study

A leading producer of construction reinforcing material has seen incredible growth in Europe and Asia over the past several years. However, the company's reliance on emails and phone calls to manage its suppliers no longer supported the speed and agility needed to run its increasingly complex supply chain operations. After switching to Coupa Supply Chain Collaboration, the company now seamlessly onboards suppliers, confirms POs, alters shipments, and addresses other disruptions through a self-service supplier portal and real-time messaging center. The power to work with its suppliers with easy-to-use tools drove supplier adoption and improved on-time deliveries by 25%.

Strategy 4: Drive an actionable roadmap for ESG by balancing tradeoffs

⟳ ✓ Optimized

> **Challenge:** *A consumer goods company identifies a change in consumer preference for its products. Consumers care about how eco-friendly the products they use every day are, placing more importance on sustainable practices.*
>
> **Solution:** *The company decides to near-shore its manufacturing operations to reduce transportation emissions and improve responsiveness. They use AI-powered scenario modeling to optimize their transportation and inventory, ensuring products are delivered on time in the shortest route possible and with the least amount of inventory to reduce waste. It's a win-win for the company and for customers.*

Consumers today expect companies to prioritize sustainability. A recent NielsenIQ study found that 70% of global consumers say a sustainable lifestyle is important.[5] Even more incentive — products with ESG-related claims averaged 28% cumulative growth over the past five years.[6]

The adaptive supply chains prioritizes sustainability by design. Companies should work closely with suppliers to identify opportunities to reduce carbon emissions and implement environmentally friendly practices. This not only aligns with sustainability goals but also enhances brand reputation, which is more important than ever.

Supply chain modeling and digital twins help companies make better sustainability decisions by quantifying their greenhouse gas (GHG) emissions and modeling outcomes to achieve sustainability goals. The right tools can model emissions accurately and provide optionality based on cost, service, and carbon. It can answer tradeoff questions about how changing routes, nodes, and modes would impact emissions and service, or how changing pallet material would reduce emissions but alter costs. Companies are empowered to make data-driven and strategic decisions that drive more sustainable practices while protecting profits.

Sustainability
- Emissions
- Inventory waste
- Eco-friendly materials

Cost-to-Serve
- Transportation
- Logistics
- Delivery times

---

[5] *NielsenIQ, 2023, How to turn green consumer intentions into sustainable action*

[6] *McKinsey & Company, 2024, Consumers care about sustainability—and back it up with their wallets*

To find the right balance between sustainability and cost-to-serve, companies can use the following checklist:

Sourcing

✓ Support more sustainable sourcing by [incorporating sustainability into the scoring process](#) for supplier bids.

✓ Prioritize more sustainable materials to hit ESG goals, such as changing pallet types that are lighter in weight to reduce transportation emissions or switching to more eco-friendly materials like wood.

✓ Seek supplier [sustainability risk, performance, and maturity evaluation data](#) to drive strategic purchasing and supplier relationship management decisions.

Transportation

✓ Reduce transportation-related emissions by [using AI to optimize shipping and logistics](#) routes, nodes, and modes.

✓ Better understand how group ordering, opening a new distribution center, or switching from air to freight impacts costs, service, and emissions. Business leaders can then make the best decisions to meet the company's needs with different scenarios backed by data and analytics.

Inventory

✓ Gain a complete picture of your cycle, safety, work-in-progress, and in-transit stock and minimize wasted inventory at every stage with [AI-powered inventory optimization](#).

✓ Segment inventory by service level to better control costs. For example, class A items are critical materials that can't go out of stock and hence require high service levels. Meanwhile, class D items are widely available commodities that don't require the same level of service as the other categories. Prioritizing higher-class, service-level items can prevent stockouts and ensure business continuity.

Coupa Case Study

Manufacturing for dozens of well-known brands worldwide makes **Compagnie de Saint-Gobain S.A.** a critical partner for global businesses. The company is also on a mission to be a good partner to the planet, aiming to achieve carbon neutrality by 2050. Saint-Gobain uses [Coupa Supply Chain Design & Planning](#) to make it a reality. By analyzing routes across various business units, Saint-Gobain finds ways to consolidate and optimize transportation. The company also uses Coupa to help evaluate costs and decisions in its transport optimization initiatives, like opening a new distribution center. Leadership has access to data-driven scenarios to make the best decision that aligns with sustainability and margin improvements. So far, Saint-Gobain has seen a [40-60% reduction in emissions](#) across several brands.

Strategy 5: Accelerate AI adoption to achieve the Adaptive Supply Chain

✓ **Optimized**

> **Challenge:** *Modern supply chains are complex and change rapidly. They require quick decision-making, which depends on a team's ease of access to the most relevant information. It's no longer possible to rely on spreadsheets or single-point solutions to drive business growth today.*
>
> **Solution:** *Companies that embrace digital and AI transformation are outperforming their competition — by a lot. Those companies are increasing profits two to six times as much as their competitors.[7] They are also better equipped to meet future challenges. The time to adopt AI is now.*

While there's a lot of hype around what AI can do, it's essential to understand the tangible realities of the technology and how to accelerate adoption with the proper infrastructure. AI relies on vast amounts of data. The better the data that goes in, the more AI can do its job effectively. With the right technology partner, companies can manage data across supply chain networks and turn that data into actionable insights. It's also important to note that confidential business-critical information is made available to external generative AI solutions, so finding a partner with strict data security and privacy policies is paramount.

With the proper infrastructure in place, supply chain leaders can leverage AI to:

- **Accelerate supplier vetting and assessment:** Machine learning (ML) analyzes historical data and can predict suppliers' future performance. Suppose a particular supplier is always eight days late for delivery. In that case, ML can identify the contributing factors behind the lateness and predict the potential lateness of other suppliers based on similar characteristics, like size, location, and so on.

- **Reduce fragility in the supply chain:** Foresee potential challenges and proactively work to manage them with predictive analytics. Make more informed decisions with AI that sense market demand, identify potential bottlenecks, and uncover areas for improvement.

- **Scenario plan faster than ever:** AI-powered scenario planning tools with digital twin functionality enable the visualization of the supply chain model. This empowers companies to test future scenarios and proactively plan for disruptions, helping them break the cycle of reactive decision-making.

- **Boost employee productivity:** Reduce repetitive or time-consuming tasks like order processing, inventory updates, data entry, or even identifying the best scenarios to run so employees can achieve more. The sheer amount of data and possible combinations make it difficult to identify potential scenarios that are right for the business. AI-driven prescriptions cut through millions of possible combinations for adding lanes, changing modes, or consolidating volume and highlight the biggest cost drivers, so modelers know which areas to focus on.

---

[7]*McKinsey & Company, Rewired and running ahead: Digital and AI leaders are leaving the rest behind, 2024*

AI is becoming increasingly important in supply chain management. It drives efficiency, improves decision-making, and enables supply chains to be more agile and cost-effective. Companies that embrace the technology are better positioned to multiply margins and drive growth.

Strategy 6: Empower employees with the right mix of tools, training, and tactics

🤝 **Integrated**

Challenge: *Half of C-suite leaders believe their company is effectively preparing employees for the skills required for the future. However, only 28% of frontline employees agree.[8]*

Solution: *Predictive and data-driven tools are becoming the norm in supply chain management roles. Companies need to adopt UX-centric ones and offer continuous training to retain and empower employees to excel in today's fast-paced business environment.*

The workforce needs to be just as adaptive as supply chains today. Employees need to know how to use predictive and visualization tools and quickly make data-driven decisions to navigate modern supply chains' complexities. Enabling scenario-planning capabilities – and communicating the success of these tools – as part of a robust supply chain project portfolio is important. Unfortunately, these tools are not always easy to use. The tools chosen, the training schedule, and the organizational structure implemented by leaders greatly impact the overall success of the adaptive supply chain strategy. CSCOs should focus on the following key areas to ensure they have a future-ready workforce.

Turn-key tools and training

The tools required to manage supply chains can be as complex as the supply chains themselves. Leaders must therefore find tools with an intuitive interface and AI and automation capabilities. Automating repetitive processes and augmenting decision-making with AI leads to higher productivity and more time for employees to focus on strategic initiatives or more advanced training. When it comes to training, post-implementation resources and reliable customer support from the software tool provider will be vital. Ensure training is built into monthly or quarterly assignments to develop a continuous roadmap for employee success.

Find a purpose

Chief supply chain officers need to communicate with stakeholders regularly to understand the company's objectives as a whole. Whether those are cost reduction, innovation, or growth, aligning the supply chain team's purpose with theirs will enable more focused and attainable action plans.

For example, if stakeholders primarily focus on market share growth, the supply chain team can conduct market research and analyze consumer demands. The design team can identify potential areas for expansion, fine-tuning modeling data and messaging to showcase how their supply chain design strategies could drive growth. This gives the supply chain team more credibility and renewed interest and investment from stakeholders.

Organizational structure

Strive to create and manage a balanced team of data-driven strategic thinkers and operationally-focused tactical managers. This might look like organizing the design team into specialty areas — each responsible for a specific asset of the supply chain, such as strategic planning, demand forecasting, inventory management, transportation, and warehouse operations. This structure enables each unit to become experts in their respective area, empowering them to dive deep to understand the tools and processes and, ultimately, take more ownership of outcomes. It's also important to encourage cross-collaboration functionality so insights from each strategic area are considered to make holistic and strategic supply chain decisions.

The results are more effective communication, streamlined decision-making, and better accountability across the entire supply chain. By focusing on specialty areas and fostering cross-functional collaboration, companies can quickly implement their supply chain decisions, leading to better customer satisfaction, lower costs, and improved operational efficiency.

The adaptive supply chain is within reach with Coupa

In a world where constant change and disruptions are inevitable, adopting adaptive supply chain strategies is no longer optional — it's essential. Companies that leverage real-time data, flexible processes, and advanced technologies like AI and automation do more than survive disruptions. They find ways to thrive in an unpredictable environment. Coupa delivers the Adaptive Supply Chain through its scenario-based decision-making platform.

To achieve the adaptive supply chain, companies need solutions that are fast to implement, fast to deliver value, and flexible enough to adapt to the rapidly evolving global landscape. Coupa Supply Chain Design & Planning delivers. With easy-to-use AI-driven tools made for modern-day supply chains, companies can transform operations fast, all while getting dedicated, continuous support from a team of supply chain experts.

Our Supply Chain Design & Panning technology is powered by LLamasoft and our AI is powered by the world's and the world's largest private database, so supply chain teams always have reliable, actionable insights and prescriptions. By combining a powerful digital twin, integrated scenario planning, and an AI platform, supply chain teams can translate executive strategy into tactical supply chain decisions. Many of the world's most innovative companies, including 18 of the Gartner Supply Chain Top 25, use Coupa to design their supply chains and multiply margins.

About Coupa

Coupa makes margins multiply through its community-generated AI and industry-leading total spend management platform for businesses large and small. Coupa AI is informed by trillions of dollars of direct and indirect spend data across a global network of 10M+ buyers and suppliers. We empower you with the ability to predict, prescribe, and automate smarter, more profitable business decisions to improve operating margins. Coupa is the margin multiplier company™. Learn more at coupa.com and follow us on LinkedIn and X (Twitter).