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November 2025

INSIDE THE Rapid Rise of AI IN SUPPLY CHAINS

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By AVERY LARKIN

Inside the Rapid Rise of AI in Supply Chains

From forecasting to risk management, AI is helping global supply chains work faster and more efficiently.

Artificial intelligence (AI) is touching nearly every corner of the business world right now, and supply chains are no exception. What began as small experiments in forecasting and robotics has evolved into practical tools for improving visibility and response. Companies are using AI to identify risks earlier, reroute shipments when needed and manage data across increasingly complex networks.

Supply chain organizations are now using AI in practical ways to solve routine problems. In "How AI Is Reshaping Supply Chains," Olivia Farrar discusses how the technology can "scan thousands of failure events" to pinpoint early warning signs of looming disruption. "[This is] something no human analyst can do at scale," she writes.

Traditional supply chain planning also relies on models built around costs and transport times. "AI enhances these models by integrating real-time data, allowing organizations to dynamically reconfigure routes, locations, and inventory," Farrar explains. "The shipping and delivery firm UPS, for instance, now uses AI to make real-time decisions about last-mile delivery—for example, rerouting drivers based on traffic, weather, or shifting priorities."

Companies are also using AI to increase organizational resilience and agility. Using virtual models of supply chains (aka digital twins), they can simulate disruptions and test responses. "The U.S. Department of Defense has deployed such systems to prepare for everything from natural disasters to adversarial threats," Farrar writes.

Finally, AI is optimizing the less visible parts of the chain, including the hiring, training and redeployment of human labor. For example, logistics provider Kuehne + Nagel International AG uses it to identify internal candidates for open roles, shorten training times and improve job satisfaction. "The result is a more flexible and capable workforce," Farrar notes.

AI in Action in the Supply Chain

Walmart is one high-profile company that's already using AI to move products faster and keep costs low across its global supply chain. In "Walmart leverages AI to enhance supply chain efficiency and reduce costs," Serenah McKay explains how the retailer is using AI to analyze demand patterns, inventory levels and shipping data. It uses that data to predict what customers will need and when they'll need it. The system adjusts orders, replenishment schedules and delivery routes in real time to prevent shortages and reduce waste.

"By analyzing demand patterns, inventory levels and global and local conditions, our network is becoming faster, smarter and more resilient, delivering a seamless omnichannel experience for customers shopping online or in stores," Walmart's Indira Uppuluri told the *Arkansas Democrat-Gazette*.

The role of artificial intelligence primarily revolves around the ordering, tracking, management and delivery of inventory. McKay explains that AI can forecast trends and analyze factors that may affect consumer demand for products that Walmart buys and imports. "Walmart has created a network of interconnected units called neurons," she writes, "much like those in the human brain, that can learn from data and recognize patterns."

It Starts with Good Data

Getting more value from AI in supply chains starts with clean, connected data. In "Gartner Says Chief Supply Chain Officers Can Scale AI With Data Fabric Architecture," the firm says organizations can build a stronger foundation for analytics and automation with a data fabric. By definition, a data fabric connects information across different systems so information can flow freely across the business. This helps supply chain teams see what's *really* happening across their systems instead of having to piece data together after the fact.

"For CSCOs, data fabrics offer reduced costs and time for data integration efforts, as well as improved decision making through the ability to operationalize AI across supply chain activities," said Vas Plessas, director analyst in Gartner's supply chain practice. "As supply chains face continued uncertainty and complexity in their operating environments, data fabrics enable integrated, scalable intelligence across expanding data models."

Plessas also cautions that the approach is still developing. "Vendor solutions are still maturing, and buyers must understand both the current solutions' limitations and have a strong grasp on their own supply chain architecture," he said. "Laying the right data foundation today is what turns the vision of AI-enabled supply chains into reality tomorrow."

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8 Tips for Cybersecurity Awareness Month

Cybersecurity Awareness Month is here and it's a reminder that prevention starts with awareness and action.

Cyberattacks in the U.S. reached new highs in 2024, exposing data from nearly 170 million people in major breaches and pushing the average cost of a U.S. breach to $9.36 million, according to Hinkley Allen. Threat actors used everything from phishing to zero-day flaws, driving the impact higher each year. The issue keeps escalating as organizations face sharper risks than ever before.

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By AVERY LARKIN

Want More Resilient Supply Chains? Start by Improving Visibility

Technology like track-and-trace systems is putting end-to-end supply chain visibility within reach for a broader range of organizations.

Companies looking for new ways to enhance their supply chain visibility isn't a new trend, but it has picked up steam over the last couple of years. Realizing both the fragility of their networks and the opportunities that lie within them, more organizations are putting the time, resources and investment into supply chain visibility tools.

Visibility has been top of mind for supply chain managers for decades, but it wasn't until the global pandemic exposed the cracks in these networks that "supply chain visibility" became an almost-household term. By SAP's definition, supply chain visibility is the "strategic capability to monitor every component of the supply chain from end to end." By providing real-time insights into inventory levels, shipment status, production schedules and other variables, visibility helps organizations develop more responsive, resilient supply chains.

"Supply chain visibility also provides a base of information that trading partners can use to work together, ensuring that all parties can act quickly and with informed confidence," SAP continues. "This not only reduces risks and minimizes delays, but it's essential for maintaining a competitive edge and ensuring customer loyalty."

No wonder so many companies are chasing better visibility right now. They want fewer surprises, tighter control over inventory and faster responses amid constantly-shifting conditions. The good news is that technology platforms have matured to the point where end-to-end supply chain visibility is within reach for many. Also, the systems themselves now play well together, which means they can more readily share data and support better decision-making.

Take global track-and-trace technology, for example. These are the systems that monitor goods, shipments or assets as they move through a supply chain (from origin to destination) and then trace their history or journey. They basically help companies monitor the movement of their goods and assets throughout the supply chain, according to Thinxtra.

"Track and trace systems have become indispensable in logistics, offering a level of transparency that was previously unattainable," the company adds. Organizations seem to recognize the value of those systems. According to Markets and Markets, the global track and trace solutions market is forecasted to exceed $12 billion by 2030—up from just $6.2 billion in 2024.

Markets and Markets says key drivers include stricter regulations, rising concerns about counterfeits and stronger demand for supply chain transparency. Companies are also adopting IoT, AI and blockchain to improve tracking accuracy and meet compliance needs. Growth in e-commerce is adding even more momentum. In response, solution vendors are rolling out more advanced tracking tools and adding features that give companies a clearer view of goods in motion.

Technology Steps Up

A new partnership between Arviem and Tech Mahindra shows how vendors are expanding visibility tools. Arviem is contributing its IoT-based cargo monitoring while Tech Mahindra adds global reach and analytics expertise. Together, they're developing integrated platforms that give companies real-time insight into goods in motion and help them make better data-backed decisions. The companies say their work will strengthen cargo integrity, reduce waste and improve sustainability performance across complex supply chains.

Despite advancements like these, the 2D barcode remains the core technology behind most track-and-trace systems. Markets and Markets says the barcode holds the largest share of the market because it is affordable, easy to implement and stores far more data than traditional 1D codes. QR codes and other 2D formats scan quickly and accurately, which gives companies better real-time visibility and more reliable traceability.

"2D barcodes are widely adopted across various industries, including pharmaceuticals, consumer goods, and electronics, due to their ability to improve supply chain visibility, combat counterfeiting, and comply with regulatory requirements," the research firm states. "Their scalability and flexibility also contribute to their growing popularity in the market."

Fast Interpretations, Faster Actions

In *Visibility is the Currency of Resilient Supply Chains*, Simon Geale discusses the strategies companies are using toimprove their supply chain resilience. All of them hinge on visibility.

"Multi-sourcing and regionalization help spread exposure across higher and lower-risk geographies," Geale writes. "Flexible transportation models, such as balancing ocean and air freight or switching ports dynamically, give retailers options to avoid congestion and manage cost volatility."

At the same time, digitalization and predictive analytics are increasingly critical. For example, real-time data supports better model disruption scenarios and helps companies optimize inventory placement and track goods across multiple modes of transport.

"Traceability solutions, once focused narrowly on compliance, are now a core resilience tool, offering transparency into carbon emissions, working conditions and supplier performance," Geale points out. "Those who interpret and act on this data fastest can keep shelves stocked and customers satisfied despite volatility."

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Design Playbook: Architecting Advanced Drone Systems

Unlock the blueprint for next-generation UAV innovation with Arrow's Drone Design Playbook—a comprehensive guide to architecting advanced, efficient, and scalable drone systems from frame to flight control.

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By ASPARUH KOEV

When AI Stops Predicting and Starts Doing in Logistics

Leaders are already implementing agentic AI. But are projects legitimate or hype? Find out which use cases work and what the industry must do to leverage these latest tools.

Many logistics leaders see generative and agentic AI as more than a tech curiosity. Where the former translates vast data into clear, conversational insights, the latter takes the next step—acting on those insights to make decisions and drive operations forward.

BCG reports that in 2025 over a third of global logistics executives recognize generative AI's capabilities to address rising customer expectations, supply chain disruptions and aging, inefficient systems. However, only 10% of logistics companies have fully adopted this tool.

Data fragmentation and quality issues, integration with legacy systems and trust gaps suggest that only a small fraction of the industry has the data maturity for agentic AI. But early adopters are showing promise with small pilots and use cases that can be scaled over time.

Workflow Automation Accelerates Speed to Action

IBM reports that 62% of logistics executives expect agentic AI to make proactive recommendations and boost efficiency through workflow automation by 2026.

Workflows such as customer communication have already been implemented. The same report identified that 70% of CSCOs found that generative AI has enhanced their responsiveness and communications with customers.

Logistics firms like DHL and Flexport use these AI agents to automate routine tasks like rate negotiation and appointment booking, enhancing efficiency and reducing manual workloads. AI chatbots connected to verified internal systems, such as tracking databases and billing records, can also automate structured logistics inquiries like shipment status and invoice details. By escalating complex queries to human agents, these systems ensure accuracy and consistency while mitigating the risk of generating incorrect information.

Such use cases work well because they involve structured, low-risk communications, keep humans in review loops and use AI for supporting efficiency rather than making critical operational decisions.

After running two experiments in 2025, BCG also found that the most significant improvement was automating complex documentation, including requests for proposals (RFPs), customs paperwork and contractual agreements. These tasks require parsing multiple data sources and formatting documents correctly, which is time-consuming. However, they are repetitive, which means they are easy to automate with AI.

Agentic Digital Twins Take Simulations to the Road

Logistics companies constantly face unexpected bottlenecks since they are tightly interconnected in long and complex supply chains, where a single disruption can cascade globally. The Suez Canal blockage in 2021 and the Panama Canal's low water levels in 2024 are examples of shipping route disruptions where leaders had to think on their feet to find workarounds to get cargo to its destination.

In these scenarios, simulating alternative routes in virtual replicas of end-to-end supply chains allows leaders to foresee how decisions impact operations before acting. Add to these digital twins an agentic layer, and planning teams can take the next step from simulating scenarios to selecting the optimal route and coordinating the plan to relevant stakeholders. Urban logistics has already seen proof-of-concept systems using agentic digital twins that plan and act autonomously, coordinating simulations, optimization solvers and domain engines to improve multimodal freight operations.

According to Market.US, the global supply chain digital twin market is expected to grow from $2.8 billion in 2023 to $8.7 billion by 2033, representing a 12% CAGR. Logistics use cases include transport route, mode and schedule management, helping ensure the right cargo is in the appropriate truck at the optimal time to maximize capacity and meet SLAs.

Risks, Barriers and Reality Checks

A Gartner projection suggests over 40% of agentic AI projects may be scrapped by 2027 due to unclear business value, inadequate risk controls and mislabeling of simpler tools as "agentic."

The relabeling of existing tools, like AI assistants, robotic process automation (RPA) and chatbots as "agentic" without true autonomous functionality creates a gap between expectations and performance. Gartner estimates only about 130 of the thousands of agentic AI vendors have the maturity and autonomy to achieve complex business objectives or follow nuanced instructions over time.

Lack of domain talent is a bottleneck. According to Mordor Intelligence, fewer than 15% of AI practitioners have both deep logistics or supply chain expertise alongside the skills in building robust agentic systems. The report notes that although upskilling programs proliferate, near-term capacity shortfalls limit how aggressively enterprises can scale autonomous agents beyond core planning stacks. The skilled talent shortage is a fundamental barrier to deploying agentic AI in supply chain and logistics.

Even with the right people in place, it takes time to sort out the data. KPMG found that less than half (43%) of organizations have limited to no visibility of tier one supplier performance. Data quality, integration with legacy systems and transparency remain serious challenges. Putting solid, structured data pipelines and clear governance in place will enable logistics to leverage AI agents further down the line.

In logistics, AI is moving beyond predicting outcomes to actively making decisions and coordinating operations in real time. Successfully adopting these tools requires cutting through hype and addressing data quality and accessibility challenges to ensure reliable, actionable insights. By automating key areas like route planning and multimodal freight coordination, agentic AI can scale human expertise across the supply chain.

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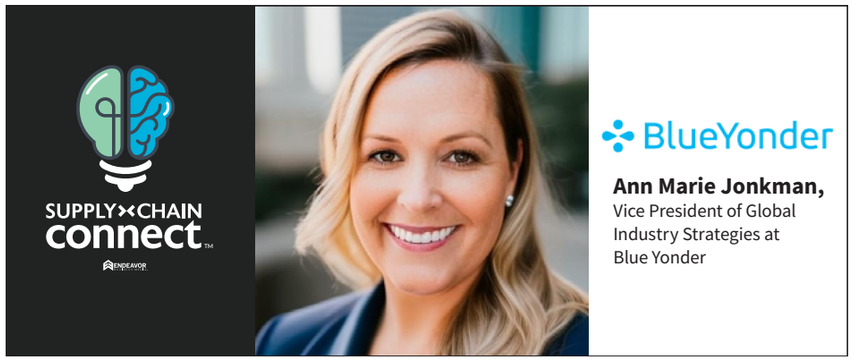

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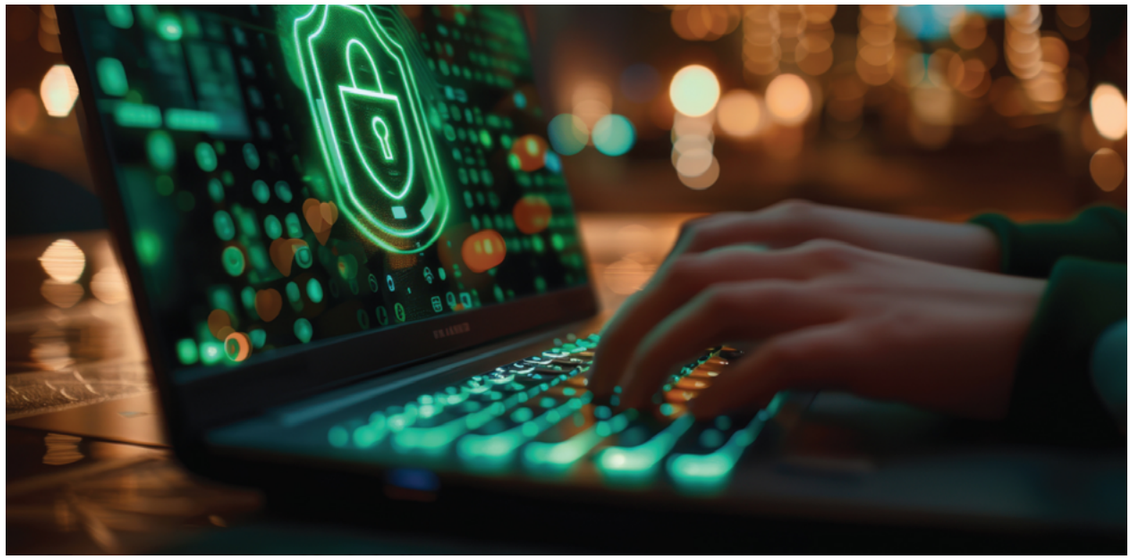
By BRIDGET MCCREA



Guardrails, Not Guesswork: Companies Are Reinforcing Cybersecurity in the Age of AI

With digital threats rising and AI adoption accelerating, business leaders are rethinking how they protect data, manage risk and build resilience.

Cybersecurity and risk management top the list of business priorities this year as digital threats grow more advanced and companies depend more on connected systems. Protection can't be an afterthought anymore. It has to live inside every part of a company's strategy and daily operations. In Grant Thornton Advisors' latest Digital Transformation Survey, more than half of senior leaders named cybersecurity and risk management as one of their top three technology goals for 2025.

The challenge now is clear: staying secure while still giving teams room to innovate. Achieving that balance isn't always easy. For example, as companies roll out more artificial intelligence (AI), automation and cloud systems, they gain efficiencies while also exposing themselves to a host of new risks.

AI is in the Spotlight

In "Tech resilience: When brakes help you go faster," Grant Thornton says smart organizations are investing in real-time monitoring, stronger incident response plans, and AI tools that detect and fix problems fast, but cautions that technology alone won't build resilience. "The proper balance lies in developing guardrails for technology transformations that create a walled garden where employees can experiment," the company adds.

"If you're experimenting with AI adoption, these guardrails protect the organization from intellectual property claims, preserve confidential data and ensure the quality of products and services as well as the customer experience," Grant Thornton advises. "Some of these guardrails can include basic functions the organization already has such as protected sandboxes, or IT change management."

Mitigating Technology Risks

In the report, Derek Han of Grant Thornton's Risk Advisory practice said organizations are especially focused now on improving their data to enable successful AI use. "Data has been the core challenge—but also the opportunity—for many organizations in their AI adoption," he said. "For some, it's going to be a real journey to make sure their data is high in quality and widely usable for training large language models within organizational boundaries."

Asked to rank the top approaches that help their organizations mitigate technology risks, survey respondents said these strategies work best:

- Deploying and using governance, risk and compliance tools, and processes.
- Doing regular risk assessments.
- Using business resilience processes and programs.
- Assigning risk ownership across IT and the business as a whole.
- Integrating risk management platforms.

Executives are also investing in more cybersecurity tools this year, according to Grant Thornton, which says 68% of respondents named cyber solutions as one of the top five technologies they're buying in 2025.

Cybersecurity solutions that incorporate AI are emerging. They can be used to probe for vulnerabilities in defenses; review audit logs for potential indicators of compromises; and remediate risk issues or vulnerabilities. Even with these emerging tools, organizations are placing a bigger emphasis on the role that humans play in keeping those advanced systems strong and secure.

"It's important to strike a balance between the use of AI tools and developing the expertise and critical thinking of the human security team," said Han.

That's because for now at least, even the best AI can't replace human judgment, context or intuition when a real incident occurs. Put simply, executives are starting to recognize that cybersecurity is not just a technology investment, and that teams still need to know how to respond, communicate and make quick decisions when a threat hits.

Putting the Right Guardrails in Place

Ultimately, Grant Thornton says that compliance and resilience work best when both are embedded in the corporate culture and reinforced by leadership. It says some companies are assigning "risk champions" at every level, while others are advocating for more cross-department knowledge sharing that "spreads the word about appropriate responses to risk."

"At the most successful organizations, governance, cyber readiness and compliance aren't viewed as constraints," it says. "They're necessities that can be pursued more effectively through the implementation of technology. And when transformative technology is implemented, leading organizations put the right guardrails in place to help themselves get the most out of such tools."

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Design Smarter Systems for Next-Generation Performance

Discover how flexible, energy-efficient architectures are transforming modern designs. Learn how adaptive hardware can deliver performance, scalability, and efficiency for applications in AI, edge computing, and industrial systems.

This guide explores how adaptive and programmable architectures empower developers to overcome design challenges in performance, power efficiency, and flexibility.

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By BRIDGET MCCREA

7 Cybersecurity Trends to Watch

With 72% of organizations seeing an uptick in organizational cyber risks this year, Google offers some ways companies can strengthen their defenses as the threats accelerate and evolve.

As global reliance on digital infrastructure deepens, the world's cybersecurity is under unprecedented strain. According to World Economic Forum (WEF), modern attacks continue to increase in scale, sophistication and strategic intent. It's Global Cybersecurity Outlook (GCO) 2025 shows that geopolitical tensions have directly influenced 60% of companies' cybersecurity strategies and 72% have seen an uptick in organizational cyber risks, with ransomware remaining a top concern.

"In addition, nearly half of global organizations now cite the malicious use of generative AI as their top cybersecurity concern, and over 40% have already suffered successful social engineering attacks in the past year," WEF notes, adding that one in three CEOs cite cyber espionage and intellectual property theft as top concerns, while 45% of cyber leaders worry about operational disruption. "These concerns are no longer theoretical; they're baked into strategic planning at the highest levels of government and industry."

With cyberthreats evolving at an alarming pace right now, Google's *Cybersecurity Forecast 2026* focuses on three key themes: adversary and defender use of AI; cybercrime as the most disruptive global threat; and continued operations by nation state actors (cyber threat groups funded or directed by a government) to achieve their strategic goals.

The outlook for 2026 doesn't look much brighter on the cybersecurity front, where new threats seem to be emerging almost daily. Here are seven areas that Google is watching and that it advises organizations, governments and companies to be ready to respond to:

1. **Artificial intelligence helps defenders move faster.** Attackers will lean on AI, but defenders will too. Google says AI can "enhance the speed, scope and effectiveness" of operations when teams use it to automate routine work and stay focused on high-judgment decisions.

2. **Autonomous systems streamline security workflows.** AI agents will automate parts of the attack and defense lifecycle. This shift will give security teams more time to investigate, validate and act instead of getting buried in manual tasks.

3. **Better protection against prompt injection.** Prompt injection is an attack where someone tricks an AI system into ignoring its safeguards and running a hidden command. Google expects companies to strengthen their defenses by hardening models and tightening controls as they understand how prompt injection works.

4. **Identity programs adapt to AI adoption.** Google expects identity and access management to evolve as companies bring AI agents into daily workflows. Each AI agent will need its own permissions and continuous risk evaluation to prevent unsafe actions.

5. **Security teams work alongside AI partners.** With AI handling the heavy analysis, alerts will arrive with full summaries, letting analysts confirm details and take action faster. Google says this shift will move analysts away from manual data hunting and toward higher-value validation and decision-making.

6. **Ransomware and extortion drive better resilience planning.** Ransomware will remain disruptive, but Google says companies can reduce exposure by improving patch cycles, strengthening third-party oversight and understanding where they rely on zero-day prone systems.

7. **Security teams build blockchain fluency.** With more money and assets moving onto blockchains, defenders will need to learn how to trace transactions, decode malicious smart contract logic and investigate wallet activity. These skills give security teams better visibility into emerging threats.

AI Governance and Continuous Adaptation

As cyber-attackers embrace AI at full speed, Google says organizations must match that pace with stronger controls, better governance and a clearer view of where the technology fits in their security stack. Google warns that adversaries will "enhance the speed, scope and effectiveness of operations," and says defenders must apply the same AI capabilities to move faster and stay ahead.

Google tells companies to start with layered defenses that harden models, apply strict guardrails and then add more checks and balances around high-risk actions. "Organizations must prioritize proactive, multi-layered defense strategies, invest in AI governance," it says, "and continuously adapt their security postures to safeguard against emerging threats."

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From Reactive to Proactive: Building Smarter, More Adaptive Logistics

Discover how modern logistics technologies enable distributors to adapt swiftly to demand fluctuations, reduce operational waste and improve customer satisfaction in an increasingly complex environment.

The foodservice distribution and logistics industry has reached a tipping point. Shifts in consumer behavior, fluctuating demand, rising operating costs and increasingly complex delivery networks are making it impossible for companies to thrive by relying on the old way of doing things.

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By EMILY NEWTON

Don't Let Supply Chain Risks Catch You Off Guard

Despite the inevitability of supply chain risks, leaders can conquer them with proven strategies. Which should they prioritize and why?

Supply chain risks come in many forms, but a common thread is that they can cause significant disruptions and harm companies' bottom lines. Some executives mistakenly believe they will not encounter these issues and fail to prepare adequately or at all.

However, these threats can occur at any time, affecting companies of all sizes and types. Now is the time to develop a comprehensive supply chain risk mitigation strategy. Decision-makers will get the best results by understanding some of the most common issues that could affect their networks and planning accordingly. How should they begin?

Become More Realistic About Supply Chain Cybersecurity

Cybercriminals aim to maximize the damage they cause, which is why many target supply chains. They know successful attacks will have widespread ramifications with a potentially global reach.

The results of a 2025 study of cybersecurity leaders in the United States and the United Kingdom found that respondents believe security risks stemming from third parties and supply chain partners have become impossible to count or manage. Even so, 97% felt confident in their responses to breaches. However, 61% said their organization had experienced a third-party or supply chain attack within the past year.

That gap suggests misguided confidence, mainly because the recent attacks indicate an inability to properly secure the infiltrated networks. It is valuable to respond promptly after breaches to mitigate the overall effects. The better option, though, is to prevent intruders from infiltrating so there is no breach to defend against.

Conducting a cybersecurity audit is one of the most practical ways to see where vulnerabilities exist and what an organization already does well to safeguard against attacks. Experts should also stay informed about emerging threats, as attackers often aim to catch victims off guard. Proactiveness and awareness limit their effects.

Because threats also come from the inside, executives should also strongly consider budgeting for employee training that helps workers recognize and avoid falling for the latest phishing scams and other risks. Overly heavy workloads can also cause distractions due to tiredness, so managers should remain open to feedback from people who feel overwhelmed by their current responsibilities.

Understand and Reduce Sources of Customer Frustration

Dissatisfied customers are often overlooked as a supply chain risk. Those who become upset enough will take their business elsewhere, never to return. The broad reach of social media also allows them to take their grievances online and amplify their voices in minutes.

Despite the reputational damage customers can cause, a 2024 survey of supply chain leaders revealed that most put them behind other priorities. Approximately 84% reported spending more time on internal operations. Additionally, 76% prefer to create innovative products rather than deliver the best customer experiences.

Pleasing people is not always easy, but one of the most accessible methods is to track trends identified within feedback. Leaders can then respond accordingly to manipulate factors within their control. Reviews might mention little to no transparency about delivery dates. In such cases, real-time tracking links or estimated time windows help recipients prepare for the arrival of the incoming goods.

Customers may also report that their products arrive broken or otherwise in poor condition. This is a common issue with many possible causes. They include insufficient packaging that cannot withstand transport-related factors and supply chain partners who consistently treat the parcels roughly, despite external labeling requesting careful handling.

Supply chain leaders must examine all the aspects within their influence and address any weaknesses they find. Specialized shock isolation systems feature wire and rubber to dampen impacts and protect products during shipping. Decision-makers can also use connected sensors to pinpoint exactly where supply chain breakdowns occur and why. Perhaps a customer complains about spoiled perishable goods. In that case, company representatives can determine whether the issue occurred due to a handling mistake, a malfunctioning refrigeration system in a truck or another problem.

Act Intentionally to Safeguard Supply Chain Risks

Many decision-makers realize they must strategically transform their supply chains. Success can increase their competitiveness and profitability. Genuinely beneficial transformations may take longer and require more resources than leaders initially expect. That can result in executives making plans but failing to follow through with them.

According to a 2024 study, just 8% of industry leaders have achieved complete supply chain transformation to address disruptive trends. A risk mitigation strategy can keep people on the right track if they recognize the most pressing challenges and have practical solutions to implement them. Those overseeing these improvements must also budget for the necessary investments, whether in technological platforms, larger workforces or employee training.

The study also showed that supply chain executives have sufficient motivation to make the necessary transformations, even if they are initially daunting. The statistics showed 46% believe severe supply chain disruptions will happen more frequently until 2030. Although 52% of participants reported having ongoing initiatives to manage these supply chain risks, only 4% have adapted their supply chains to accommodate evolving technological advances.

Emerging options, such as artificial intelligence, help users predict and mitigate specific risks, but this is only possible when companies adopt the technology and employees demonstrate a willingness to adapt. The respondents who had the highest success levels mentioned numerous aspects instrumental in that result, including end-to-end, integrated approaches that require advanced skills, technologies and working methods.

They also deemed a clear vision and roadmap essential, along with resource capacities and worker commitment. Executives should act promptly when risks arise and prepare for them, so that when they occur, the respective companies experience only minimal disruptions.

Develop the Supply Chain Risk Mitigation Strategy

Besides applying these specific tips, those in charge of a company's supply chain should commit to going beyond mere intentions. Industry authorities often recognize that they must conquer known threats to safeguard their operations. That is a good first step, but people must not get stuck there and encourage themselves to stay motivated to accomplish tangible results.

Input from trusted peers can also shape their decisions, especially if those entities have been in similar positions and have practical tips for overcoming known challenges. Executives will then feel that they are not alone and can rely on others to tackle supply chain risks and get other desirable results.

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By AVERY LARKIN

Global Risk Check: What Business Leaders Are Watching Closely This Year

From cyber risk to geopolitics, Aon outlines the biggest threats to global business in 2025.

Global risk is shifting quickly and companies are doing what they can to adapt to these pivots. Cyber threats, regulatory changes, geopolitical forces and supply chain disruptions continue to test even the most prepared organizations.

And because a single issue can affect operations, finances and reputation all at once, companies need to take a more proactive approach to risk management. Put simply, organizations can't afford to wait until problems surface; they have to understand their exposures and strengthen resilience before disruptions occur.

To gauge where the biggest vulnerabilities lie, Aon's new Global Risk Management Survey takes a deep dive into what's keeping business leaders up at night. Based on responses from about 3,000 global executives, Aon's report reveals that cyber risk remains the top global concern, followed by business interruption and economic slowdown. Geopolitical volatility also entered the top 10 for the first time, reflecting the growing impact of conflict, regulation and trade uncertainty on business operations.

Rising Risks, Shifting Priorities

Here are the top 10 global risks that are keeping executives across most industries up at night this year and a pro tip from Aon on how to best manage the disruption or issue:

1. Cyber risk. Cyberattacks and data breaches continue to lead the list of global business threats. As digital transformation expands and AI tools become more common, companies face a growing risk of exposure. According to Aon, cybersecurity needs to be managed as a board-level priority that brings together people, processes and technology.

2. Business interruption. Cyber incidents, severe weather and political unrest have become real concerns for nearly all companies. Organizations are testing continuity plans more often and rethinking how they handle localized crises. Aon advises companies to update and evaluate those plans regularly to stay ready for new threats.

3. Economic slowdown. Inflation, rising costs, tariffs and slowing demand continue to put pressure on corporate profits. Aon notes that maintaining strong cash reserves and reviewing capital strategies can help companies manage through downturns and recover faster.

4. Regulatory and legislative change. Evolving rules around sustainability, technology and employment are creating uncertainty for organizations that operate in multiple regions. Compliance teams are adapting to faster reporting timelines and more complex oversight. Aon recommends building flexible compliance frameworks that can shift quickly as new policies take effect.

5. Increasing competition. Companies that don't innovate or attract top talent risk losing ground. Aon says blending digital tools with workforce development can help organizations strengthen their competitive position.

6. Commodity price and material scarcity. Volatile commodity markets, trade restrictions and extreme weather continue to affect material availability. Some companies are diversifying suppliers or using alternative materials to avoid production slowdowns. Aon reports that spreading sourcing across regions helps reduce exposure to cost spikes and shortages.

7. Supply chain disruptions. Supply chain risk remains high as organizations navigate geopolitical tension, cyber threats, tariffs, trade wars and infrastructure breakdowns. To offset these issues, many companies are investing in better visibility and more flexible logistics networks. Aon emphasizes that transparency with suppliers and diversification of sourcing are key to building resilience.

8. Brand or reputation damage. Issues related to ethics, data privacy or environmental performance can spread quickly online. According to Aon, monitoring sentiment and responding promptly and consistently helps protect brand credibility.

9. Geopolitical volatility. Conflicts, shifting trade alliances and policy changes are affecting where and how companies do business, but Aon says tracking global developments and running regular scenario tests can help organizations stay agile.

10. Cash flow and liquidity risk. Amid economic uncertainty more companies are improving forecasting and focusing on cash discipline to manage expenses more closely. Aon advocates for "strong liquidity management" as one of the most effective ways to maintain financial stability when markets are unpredictable.

Very Few Companies Track Risk

Despite rising volatility, Aon says most organizations remain underprepared: Only 14% of respondents track their exposure to these top 10 risks. This lack of visibility may leave companies vulnerable when disruptions hit.

"The dramatic rise of trade and geopolitical risk highlights a new reality: volatility and uncertainty are now constants for organizations," said Aon's Joe Peiser in a press release. "From evolving tariffs to shifting alliances, these forces directly impact organizations' balance sheets. Building resilience through analytics and scenario planning is essential for navigating this environment."

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Top Supply Chain & Logistics News

Drone deliveries, NVIDIA's latest deals and an uptick in supply chain cyberattacks made headlines in September.

September brought both opportunities and challenges for supply chains. Uber took a step into the future with its first drone delivery partnership, while NVIDIA continued its push to shape the AI infrastructure market through major new deals.

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By BRIDGET MCCREA

NVIDIA & Oracle Team Up to Build AI Supercomputer

Built for the Department of Energy, the Solstice and Equinox supercomputers will be located at Argonne National Laboratory.

There are a lot of exciting happenings in the technology sector this year. Artificial intelligence (AI) has reached a point where companies of all sizes can benefit from it, robotics are becoming more autonomous and quantum computing is being used to solve even more complex real-world problems. Not to be left out of the conversation, the U.S. Department of Energy (DOE) is also taking new steps in this space.

Last month's announcement was a particularly big step: DOE announced that it enlisted NVIDIA and Oracle to build the world's largest supercomputer for scientific discovery. The "Solstice" supercomputer will feature 100,000 NVIDIA Blackwell GPUs to accelerate the DOE's mission of driving technological leadership across U.S. security, science and energy applications.

According to the DOE, another system called "Equinox" will feature 10,000 NVIDIA Blackwell GPUs. Construction at the Argonne Leadership Computing Facility will immediately begin for the Equinox system, which is slated for completion next year. The DOE says these AI systems will connect to its own network of scientific instruments and data assets to "address some of the nation's most pressing challenges in energy, security and discovery science."

Commonsense Approach to Computing Partnerships

As part of the partnership, Oracle will provide DOE with access to AI computing resources that use a combination of NVIDIA Hopper and Blackwell architecture. Scientists from Argonne and across the country will be able to access the new AI capabilities to drive technological leadership for science and energy applications.

"Winning the AI race requires new and creative partnerships that will bring together the brightest minds and industries that American technology and science have to offer," said U.S. Secretary of Energy Chris Wright, in the DOE announcement. "The two Argonne systems and the collaboration between the [DOE], NVIDIA and Oracle represent a new commonsense approach to computing partnerships."

Driving Innovation

According to NVIDIA, the Solstice and Equinox supercomputers will be located at Argonne National Laboratory. Scientists and researchers will use them to develop and train new frontier models and AI reasoning models for open science. The systems will use the NVIDIA Megatron-Core library and NVIDIA TensorRT inference software stack (for scaling). "These models will form the backbone of agentic AI workflows for scientific discovery," NVIDIA adds.

Both AI supercomputers will support NVIDIA, Argonne and the DOE's research collaborations to develop agentic scientists, boost R&D productivity and accelerate discovery. Solstice will be built with the DOE's new public-private partnership model, including industry investments and use cases. The three phases of the partnership—including immediate access to Oracle-provided AI resources plus the delivery of Equinox and Solstice at Argonne—are expected to "dramatically decrease" the time it takes researchers to move from idea to discovery.

"AI is the most powerful technology of our time, and science is its greatest frontier," said Jensen Huang, founder and CEO of NVIDIA. "Together with Oracle, we're building the [DOE's] largest supercomputer that will serve as America's engine for discovery, giving researchers access to the most advanced AI infrastructure to drive progress across fields ranging from healthcare research to materials science."

NVIDIA also says that the AI supercomputers will serve as the foundation for a larger-scale collaboration across science, energy and national security to deploy next-generation infrastructure and further secure U.S. leadership in artificial intelligence.

But Wait—There's More!

In other tech-related news, the DOE extended up to $625 million in funding to establish five quantum information science centers to promote research in that area. The agency says it's "aligning its quantum research enterprise with national priorities," and focusing resources on advancing critical R&D across the American Quantum Information Science (QIS) research centers, strengthening the quantum innovation ecosystem and "accelerating discoveries that power next-generation technologies."

Established in 2020 and led by a DOE national laboratory, the five DOE QIS research centers develop cutting-edge research and technologies for science's most complex problems. The total $625 million in funding goes to awards lasting up to five years in duration, with $125 million in Fiscal Year 2025 dollars and outyear funding contingent on congressional appropriations.

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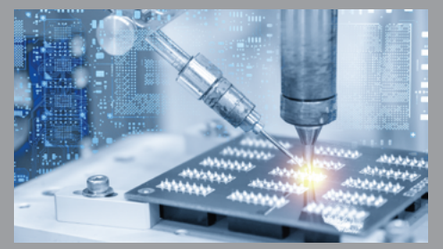
Factories Double Down on Smart Manufacturing

Smart manufacturing gains ground as companies seek practical ways to improve efficiency and stay competitive.

As technology reshapes the manufacturing sector, companies are investing in new ways to improve efficiency, cut downtime and respond faster to demand. Smart manufacturing technologies are in particularly high demand and for good reason: They help plants track equipment, prevent breakdowns and make quicker decisions.



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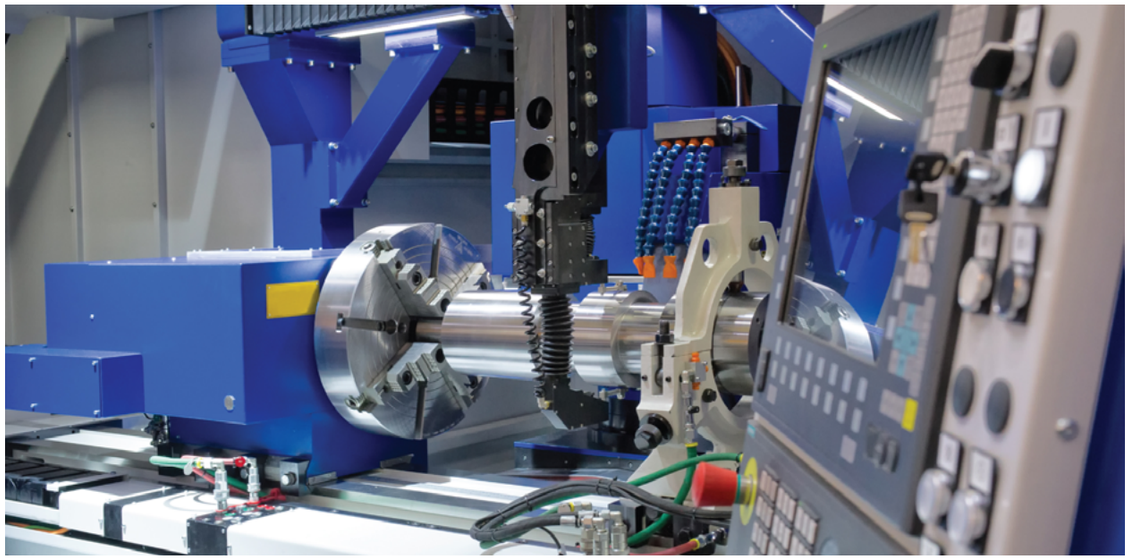

U.S. Manufacturing Sector Continues to Contract

The latest Manufacturing PMI Report paints a picture of a domestic manufacturing sector in duress.

The U.S. manufacturing sector continues to show signs of tariff fatigue and other challenges that are impacting bottom lines, slowing production and cutting into future investment. The red flashing light has been signaling for most of 2025, but the Institute for Supply Management's latest Manufacturing PMI Report solidifies what many have been thinking: domestic manufacturers are facing some steep challenges right now.

Released last week, the report placed the Purchasing Managers' Index (PMI) at 48.7% in October—a 0.4 percentage drop compared to September's 49.1% reading. For context, any reading below 50 generally signals that factory activity is shrinking, although ISM notes in its latest report that a "PMI above 42.3%, over a period of time, generally indicates an expansion of the overall economy."

By the Numbers

According to ISM, the overall national economy continued its expansion for the 66th month after one month of contraction in April 2020. The new orders index contracted for the second month in October following one month of growth, while the production Index (48.2%) was 2.8 percentage points lower than September's figure of 51%.

The prices Index remained in expansion (or 'increasing' territory), registering 58%, down 3.9 percentage points compared to the reading of 61.9% reported in September. Other key measures that shifted over the last month included:

- The backlog of orders index registered 47.9% in October, up 1.7 percentage points compared to the 46.2% recorded in September.
- The employment index registered 46%, up 0.7 percentage points from September's figure of 45.3%.
- The supplier deliveries index indicated slower delivery performance for the third consecutive month after one month in 'faster' territory, which was preceded by seven consecutive months in 'slower' territory.

"In October, U.S. manufacturing activity contracted at a faster rate, with contractions in production and inventories leading to the 0.4-percentage point decrease of the [PMI]," Susan Spence, chair of ISM's Manufacturing Business Survey Committee, said in a press release.

"A chain reaction of one-month index improvements started with new orders in August and flowed to production in September," she continued. "In October, it manifested in a 1.7-percentage point increase in the backlog of orders index. These short gains have not appeared to translate into sustained growth for the sector, a reflection of continuing economic uncertainty."

Just Two Expansion Areas

The U.S. manufacturing sector contracted in October for the eighth consecutive month after two months of expansion (preceded by 26 months of contraction). Of the five subindexes that directly factor into the index, supplier deliveries is the only one currently in expansion territory.

According to ISM, 58% of the manufacturing sector's gross domestic product (GDP) contracted in October, down from 67% the prior month. However, it says the percentage of GDP in strong contraction (registering a composite PMI of 45% or lower), now sits at 41%—up from just 13% from September.

"The share of sector GDP with a PMI at or below 45% is a good metric to gauge overall manufacturing weakness," Spence pointed out. "Of the six largest manufacturing industries, only two—food, beverage & tobacco products, and transportation equipment—expanded in October."

Most manufacturers are also paying more for raw materials this year, with electrical equipment, appliances & components, computer & electronic products, transportation equipment, and chemical products all making the list of industries shelling out more money for those core needs right now.

Tariffs Take a Toll

The verbatim survey responses paint a picture of a manufacturing sector under duress. "Business continues to remain difficult, as customers are cancelling and reducing orders due to uncertainty in the global economic environment regarding the ever-changing tariff landscape," one chemical products manufacturer said.

"Tariffs continue to be a large impact on our business. The products we import are not readily manufactured in the U.S., so attempts to reshore have been unsuccessful," a machinery manufacturer pointed out. "Overall, prices on all products have gone up, some significantly. We are trying to keep up with the wild fluctuations and pass along what costs we can to our customers."

Industry experts agree. "Tariffs have been roiling the sector for much of this year," Stephen Stanley, chief U.S. economist at Santander U.S. Capital Markets, told *Reuters*. "The comments from individual respondents suggest that firms are exhausted by all of the back and forth on tariffs since the beginning of April and are suffering mightily as their customers have pulled back significantly."

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Washington's AI Gamble: What the New "Space Race" Means for Factories and Supply Chains

The U.S. is betting on AI like it once bet on the moon, and the clock is ticking. Manufacturers and distributors now face a choice: harness this wave of automation to leap ahead, or risk getting left behind.

The United States' role in the Space Race during the 1950s, '60s and '70s spurred incredible technological progress. Rapid advances in sectors like computing, communications and materials engineering brought satellites, robotic landers and even rocket ships to life.

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