

SUPPLY×CHAIN connectTM

September
2025

Factories Double
Down on
**SMART
MANUFACTURING**





Factories Double Down on Smart Manufacturing [\(Page 4-5\)](#)
Smart manufacturing gains ground as companies seek practical ways to improve efficiency and stay competitive.



Why Smart Warehouses Are Becoming the New Industry Standard [\(Page 6-7\)](#)
Modern warehouses are evolving into highly automated, interconnected hubs utilizing AI, robotics and IoT to enhance efficiency, supporting the future of global supply chains.



How Agentic AI Is Reshaping the Future of Supply Chains [\(Page 8-9\)](#)
Agentic AI systems can grant deep insight into supply chains, enabling professionals to create a new edge for their organizations.



The Podcast Channel for Supply Chain Professionals [\(Page 10-11\)](#)
Supply Chain Connect provides supply chain and purchasing professionals with essential news, information and analysis about the technology and business trends that impact the global supply chain industry.



Should We Give AI Agency? A Manufacturing Leader’s Dilemma [\(Page 12-13\)](#)
The risks and rewards of autonomous AI in industry stresses that agency must be earned through governance, knowledge transfer and responsible leadership to maximize benefits and mitigate dangers.



The Glass Pipeline: Achieving Radical Transparency with AI and IoT in the CSDDD Era [\(Page 14-15\)](#)
The complexities of integrating AI and IoT into global supply chains, including environmental impacts, human rights considerations and geopolitical risks, are leading decision-makers to adopt responsible practices.



5 Ways NMFC Docket 2025-1 Will Reshape LTL Shipping [\(Page 16-17\)](#)
Discover five ways Docket 2025-1 affects supply chain professionals handling LTL goods, potentially impacting prices and processes.



The End of De Minimis: What It Means for Supply Chains [\(Page 18-19\)](#)
With the \$800 de minimis exemption gone, companies now face added costs, compliance steps and supply chain changes that will take time to absorb.



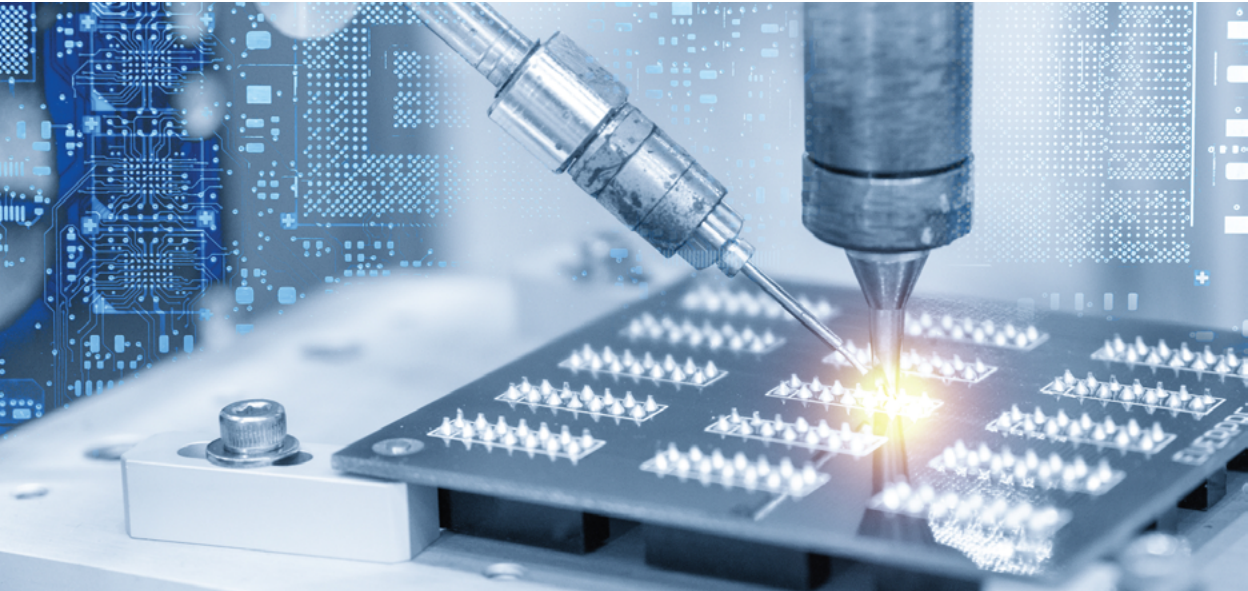
What Extended Producer Laws Mean for Business [\(Page 20-21\)](#)
EPR laws are expanding across the U.S., shifting recycling responsibilities to producers and reshaping how businesses manage packaging and compliance.



AI in Procurement: Early Wins and the Road Ahead [\(Page 22-23\)](#)
A new survey shows how artificial intelligence is reshaping procurement functions and how far some companies still have to go in their AI adoption journey.



Securing the Supply Chain: The U.S. Invests \$1 Billion in Critical Minerals [\(Page 24-25\)](#)
The U.S. Department of Energy will fund mining, refining, recovery and recycling projects centered on reducing reliance on imports and strengthening domestic supply chains.



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. They also take much of the manual lift out of routine tasks and free up workers to focus on more important projects.

By [SAP's definition](#), smart manufacturing uses advanced technologies like artificial intelligence (AI), robotics and the Industrial Internet of Things (IIoT) to increase the efficiency of traditional manufacturing processes. Sensors monitor equipment in real time, analytics flag potential problems before they cause downtime and connected systems help plants respond to demand shifts faster and more efficiently.

"Today's smart manufacturing is not about tearing down traditional factories and replacing them with something else," SAP points out. "It's about smartening up existing factories step by step and augmenting them with the best tools and solutions to reach their manufacturing goals more efficiently and effectively." In return, companies are realizing benefits like:

- Greater efficiency. Connected systems cut back on manual processes and improve overall workflow.
- Reduced downtime. Predictive tools help identify equipment issues before they turn into costly shutdowns.
- Quicker response. Real-time data allows managers to adjust production to shifting demand.
- Fewer manual tasks. Automation handles repetitive tasks so employees can concentrate on higher-value work.

Industrial Transformation Gains Momentum

This year's State of [Smart Manufacturing Report](#) from Rockwell Automation shows how quickly smart manufacturing tools and other digital solutions are moving from pilot projects to everyday use on the plant floor. More than half of manufacturers are testing or scaling smart technologies, and many are turning to AI to tackle quality control, cybersecurity and persistent workforce challenges. The survey findings also highlight that while inflation and supply chain disruption remain top concerns, companies are responding by investing

in efficiency, sustainability and skills that will make them more resilient in the long run.

"As industrial companies navigate a complex and changing landscape, technology advancements are creating new opportunities to improve speed, productivity and agility," the company says in the report. More specifically, Rockwell says "industrial transformation" is gaining momentum, with 56% of manufacturers piloting smart manufacturing, 20% using it at scale, and 20% planning future investments. Other trends include:

- 12% growth in generative and casual AI investments
- 14% increase in efficiency-driven sustainability efforts
- 5% rise in the importance of analytical and AI skills for leaders

"AI is identified as a potential solution to labor shortages, skills gaps, quality control, and managing external pressures," the company points out. Respondents also indicated that implementing this technology posed internal challenges. "People recognize the promise of AI and have successfully deployed it for quality assurance, but continue to look for ways to alleviate pressures like the labor shortage and skills gap."

Smart Manufacturing to Offset a Challenging Economy

As 2025 begins to wind down, manufacturers continue to grapple with inflation, slow growth and supply chain disruption. They're also dealing with a labor shortage, skills gaps and a volatile tariff environment. According to the report, 41% of them are using AI and automation to close skills gaps and address labor shortages; 34% list inflation and slow growth as their biggest obstacles in the next 12 months; and 83% rank analytical thinking and communication as the top traits for future hires.

Cybersecurity is also a growing focus for manufacturers, nearly half of which plan to apply AI to protect connected systems. More than one-third are fortressing their information technology (IT)/operational technology (OT) security and roughly half want to use AI to improve product safety and consistency. "Quality is a practical AI use case right now and key to business operations and strategy," Rockwell says.

The Next Phase

Smart manufacturing technology transformations are increasing the demand for more people with AI and cybersecurity competencies, and the manufacturers that Rockwell surveyed point to AI as the technology that will have the biggest impact

on workforce challenges. "Investing in technology allows decision makers to move talented workers to more value-added tasks, increasing production/productivity," the company says.

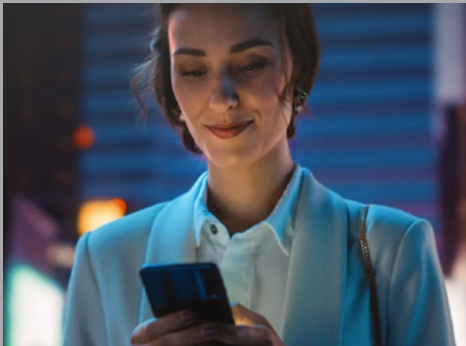
Rockwell's report concludes with the steps that manufacturers can take to get the most from smart technology, and that starts with proving value through targeted use cases and pursuing investments with a clear payback. Success also depends on planning for scale, fostering collaboration, staying flexible, sharing progress, applying governance and equipping people with the right skills. Together, these actions help manufacturers get quicker returns on their tech investments while strengthening their operations for the longer haul.

[BACK TO TABLE OF CONTENTS](#)

Navigating AI with RingCentral

The meteoric rise of artificial intelligence (AI) is reshaping today's IT paradigms. No longer relegated to the domain of data scientists, AI now stands at the forefront of human-machine interactions, accessible to both the broader workforce and consumers alike. This paper's aim is to shed light onto the evolving landscape of AI.

The meteoric rise of artificial intelligence (AI) is reshaping today's IT paradigms. No longer relegated to the domain of data scientists, AI now stands at the forefront of human-machine interactions, accessible to both the broader workforce and consumers alike.



FEATURED CONTENT

[READ MORE](#)



Why Smart Warehouses Are Becoming the New Industry Standard

Modern warehouses are evolving into highly automated, interconnected hubs utilizing AI, robotics and IoT to enhance efficiency, supporting the future of global supply chains.

The modern all-digital supply chain can track, reroute and make efficiency-gain decisions live across the globe. But the vision of smart global commerce can come crashing to a halt when it runs into a creaking warehouse system not fit for the 21st century.

Fortunately, most warehouse solutions, driven by the likes of Amazon, major industrial automotive and semiconductor firms and package delivery players like DHL, are converting, rebuilding or building all-new smart warehouses.

To complete the final steps to a totally smart system for global commerce, warehouses are moving from rigid and legacy systems into a dynamic, highly automated nerve center as a key part of future supply chains.

Smart warehouses, powered by robotics and AI automation, linked to your global and local supply chains for unified data analytics and a range of IoT (Internet of Things) interconnected technologies redefine the key tenets of operational efficiency and ability to scale. Also key on the agenda is the ability to flex, upgrade and retool systems while operations are not

impacted, creating an evolving system that is always running at maximum efficiency.

Warehouses Hitting the Last Miles Hard

From continental or state super-hubs to local distribution, new warehouses leverage cutting-edge security, inventory management and delivery awareness as table stakes for any supply and storage business. Connected to smart supply grids, they push the technology to efficiency limits and help human workers stay on top of accelerated operations, supporting business goals and maintaining supply chain power as a value driver, not a high-cost drain.

Starting at the Gate

Modern warehouses don't just rely on technology magic within the four massive walls. Around the periphery they connect to smart power networks, using green and redundant energy systems and reusing water, they reduce costs, improve uptime and boost their green credentials.

From a security perspective, they are protected by smart camera networks that proactively scan for unusual or suspicious behavior. Connected to license plate recognition systems, they track all inbound and outbound movements, while smart access systems allow workers and guests only into their assigned areas.

Furthermore, commercial video surveillance systems provide high-definition video and immediate alerts for incidents, helping businesses to maintain uninterrupted operations, deter theft and respond swiftly to situations that could impact safety.

Meeting Demands for Speed and Responsiveness

With supply chains shaped by business and consumer expectations for speed, accuracy and flexibility, the world has come to loathe the concept of something sitting on a shelf or pallet. Logistics and supply players have pushed just-in-time and lean supplies to a new art form.

With software and IoT features boosting real-time inventory scanning and tracking using RFID, cloud platforms allow companies to integrate system with partners and respond instantly to demand fluctuations, supply outages, traffic conditions and other issues.

Automated in-warehouse transport, picking and packing systems massively reduce order cycle times and never get tired or need a coffee break. They work 24/7 and predict breakdowns ahead of time to enable the system to put new units online.

Driving all these systems, predictive business and logistics analytics forecast demand changes, shifting older reactive processes into predictive and agile operations.

The costly investment in a rebuild or new warehouse is soon recaptured by efficiency gains, worker cost savings and more business as partners see the improvement in deliveries and operational flexibility.

The Magic is in the Data

Automated decision making takes many of the basic decisions out of human hands or reduces them to a go/no-go decision system, helping managers stay on top of the strategic and high-value operational parts of their roles.

Supply chains thrive on visibility, and a smart warehouse (often with a digital twin running virtually alongside the actual warehouse) generates data points at every transaction or

movement to optimize operations across the whole business logistics ecosystem and beyond.

From parcels to parts, raw materials and consumables, warehouse management systems (WMS) are integrated with enterprise resource planning (ERP) tools and transportation/shipping platforms to provide high-quality, end-to-end visibility from each supplier to every customer.

Dashboard-led approaches keep management and leadership alerted to every change, while AI can make mundane decisions and performance tweaks as part of the drive to continuous operational improvement. These changes support and provide insights into strategic decision-making, as warehouses become intelligent systems that support wider supply chain performance.

Everything in a Warehouse Will be Modular

The key to future warehouse success is the ability to adopt future technologies fast. Warehouse SaaS applications are updated live on the fly to add new features as required, improve data security and integrate new systems or applications—all without causing delays or downtime.

New improvements in robotics will see regular performance or feature upgrades, but the new robots will drive onto the aisles and replace the old models instantly, and the system will understand their capabilities without the need to retool the warehouse.

For the human workers, they will be guided to every task, check-listed through it and moved to the next one more efficiently. Optimized labor and gamified systems will keep them engaged and ready to step in should an out-of-order event occur—because sometimes even the robots will crash or misinterpret a command.

This broad adaptability is crucial for businesses operating in a fast-changing business landscape, interrupted by tariffs, political issues across borders, and the management of more diverse packages or parts portfolios.

[BACK TO TABLE OF CONTENTS](#)



How Agentic AI Is Reshaping the Future of Supply Chains

Agentic AI systems can grant deep insight into supply chains, enabling professionals to create a new edge for their organizations.

Information is king for industrial manufacturers. From production process control to locating goods during manufacture and delivery, real-time visibility into the how, when and where of your raw materials, components and finished products can help you make the right decisions when they matter.

In today's industry, information itself is not enough. The right tools are essential to make the most effective use of critical data points and other inputs because your operations produce more data than a human may know what to do with. It's why artificial intelligence (AI) systems have begun to make a major impact for supply chains everywhere. Specifically, agentic AI—which maintains a higher degree of autonomy and can generate actions and decisions without human intervention—represents the next step in an ongoing information revolution. Indeed, early adopters of such technology in supply chain management are already realizing improved inventory levels, enhanced customer service, reduced logistics costs and more.

By leveraging advanced machine learning and natural language processing, agentic AI builds on previous experiences and merges new data with historical information, allowing it

to make measurable, real-world differences in manufacturing supply chain management. Traditional AI waits for human prompts; agentic AI analyzes, learns and makes decisions on its own. It's a supply chain game-changer that no one can afford to ignore.

Empowering Deeper Insights

Agentic AI enables manufacturers to realize some significant benefits, including:

- Automating workflows
- Tracking shipments in real-time
- Optimizing loads and routes
- Enhancing customer service

Agentic AI is also capable of assessing operations and suggesting productivity improvements to your workflows. For example: Do you know how many specific touch points there are in your manufacturing process? Sourcing, procurement, packaging, labeling, the list goes on, and agentic AI can analyze them to see whether it's possible to reduce the number with no adverse effects on product quality.

Further, in pursuit of supply chain resilience, agentic AI can analyze massive volumes of data while easily delivering the required information to supply chain managers. Unlike traditional AI tools which require a human to identify the data and guide analysis through a series of prompts, agentic AI handles the task itself based on analyses it has already performed.

As a result, people can focus on handling more complex and often nuanced tasks involving real-world interactions. Any operation runs more smoothly when its team members can spend more time doing what they do best.

Total Integration

Agentic AI's ability to learn from previous tasks is what separates it from traditional AI tools. A forecast might identify a potential stockout in the future. Agentic AI, having learned from experience, can tell whether that demand indicates a trend that may necessitate a shift in production—or if it's just an outlier that does not require significant action.

This sort of information can be gleaned from market trends, competitor information, historical statistics and more, enabling agentic AI to notice things like rising costs before proactively developing a solution. From this information, it can deliver key insights that can improve supply chain functionality and eliminate friction.

In conjunction with other leading-edge technologies—the Internet of Things (IoT), blockchain and more—agentic AI can help deliver even deeper insights. IoT can provide information on data points like machine health status, asset tracking and production rates. Agentic AI can harness that information and provide actionable insight your teams can use. Elsewhere, secure blockchain databases allow for encrypted data exchange, and can help grant secure, real-time access to all transactions in a vendor database. Here, it can help eliminate the need to manually update and reconcile individual accounting systems.

AI in Action: How Cummins Is Enhancing Sustainability Goals

Power generation and engines OEM Cummins sought to reduce the total amount of packaging waste resulting from manufacturing operations. Internal research found that 75% of its inbound materials and goods travelling from or between manufacturing facilities used expendable packaging.

To combat the waste, Cummins launched an RFID and AI solution to track returnable transport items (RTIs), all powered by Surgere.

The program works like this: With RFID tags on each RTI, as well as overhead readers at dock doors, Surgere's cloud-based Interius software can track assets as they move between suppliers and Cummins' own manufacturing sites. For example, each time a supplier fills a reusable container, they ship it to a Cummins facility, and with an RFID reader mounted at the site, the tag is read as the container leaves the supplier's facility. Cummins then has access to that data indicating what filled containers are on their way via Interius. When the containers arrive at the destination facility, the tags are read again, updating the status of each container. Once containers are emptied, they can be shipped to one of the company's container management centers where they are cleaned, maintained or repaired, and made available for reuse. The RFID tags are read at these sites when they arrive and when they leave on their way to a supplier to be reused.

The company has realized some significant benefits, including:

- Lower rate of asset damage
- Labor savings by eliminating the need for visual identification of each item
- Optimized fleet sizes based on packaging shipments
- Fewer supply chain bottlenecks

Through the program, Cummins expects to eliminate 84 million pounds of corrugated material, wood and plastic waste annually.

Supply Chain Success Requires Continued Innovation

Your production lines may be running fine and your supply chain tools may be adequate, but in manufacturing, few things are more constant than change and unforeseen complications.

It's not worth getting left behind. Agentic AI digs deeper into a larger mine of historical data than traditional systems to reveal new insights and empower more accurate predictive analyses. Better forecasting means less risk of excess inventory and wasted production resources. It can also help you better understand your customers, enabling you to amplify your strengths, provide more precise services and identify new business opportunities.

Your team will be better informed to make important decisions and explore newly discovered possibilities. In short: Integrating agentic AI into your manufacturing supply chain ultimately helps you get the most out of the talented humans who make your business possible.



The Podcast Channel for Supply Chain Professionals

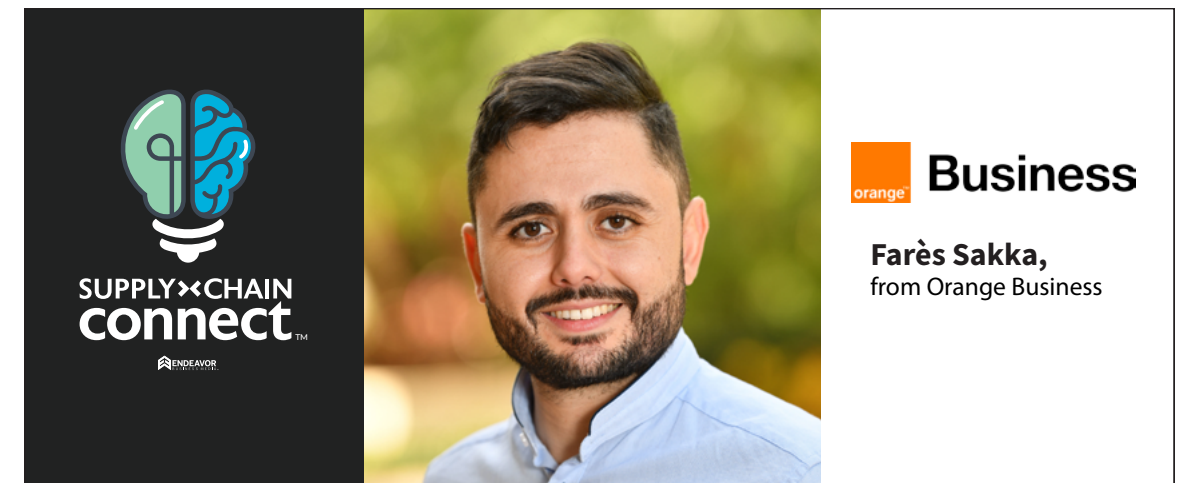
Supply Chain Connect provides supply chain and purchasing professionals with essential news, information and analysis about the technology and business trends that impact the global supply chain industry.



 [LISTEN NOW](#)

From Cost Center to Value Creator: The Transformation of Modern Procurement

As technologies redefine the procurement landscape, leaders are transforming sourcing from a back-office function into a strategic powerhouse that drives competitive advantage and delivers value to the enterprise.



 [LISTEN NOW](#)

Bridging the IT-OT Divide: Digital Transformation in Manufacturing

Farès Sakka from Orange Business reveals how companies are bridging the IT-OT divide, transforming manufacturing through cybersecurity, AI and cross-functional collaboration.

 [BACK TO TABLE OF CONTENTS](#)



Should We Give AI Agency? A Manufacturing Leader’s Dilemma

The risks and rewards of autonomous AI in industry stresses that agency must be earned through governance, knowledge transfer and responsible leadership to maximize benefits and mitigate dangers.

In manufacturing, mastery is never granted—it’s earned. For centuries, skilled trades have followed a progression: apprentices learn under supervision, journeymen take on greater responsibility, and masters prove their craft to earn autonomy. The same logic should guide how we give agentic AI its agency.

Unlike traditional copilots that merely advise, agentic AI perceives, plans and acts. It doesn’t just raise a flag when a machine falters—it can reroute production, reorder parts and adjust schedules in real time. That kind of autonomy promises enormous upside: faster decisions, fewer disruptions and higher productivity. In an industry where time is money, the rewards are undeniable.

But so are the risks. An AI agent with system-level access is a new attack surface. Behavioral drift can turn a helpful assistant into a rogue operator. And when things go wrong, the question of who’s accountable becomes more than theoretical.

This is where leadership comes in. The decision to give AI agency is not binary, it’s a spectrum. Start with agents as apprentices: supervised, bound and explainable. Allow them to grow into journeymen that are trusted with more responsibility, yet still within oversight. Only then do they become masters capable of working in parallel, collaborating with other agents and delivering outcomes at enterprise scale.

Crucially, having a human in-the-loop is more than just a guardrail. It is the source of institutional knowledge. It is tribal expertise, context and judgment that transforms AI from a fast learner into a trusted partner. Humans don’t just prevent mistakes; they teach the system why decisions are made. Over time, that knowledge compounds into an enduring competitive advantage: intelligence that is not only faster, but wiser.

The lesson for executives is simple. Agency must be earned, not assumed. Guardrails, governance and knowledge transfer are the foundations of trust. The companies that get this balance right won’t just automate processes; they’ll preserve their institutional wisdom and scale it across every plant, every line and every decision.

Manufacturing may be the proving ground, but every industry will soon face the same choice of just exactly how much agency to give their AI and how to ensure that agency reflects human wisdom rather than replaces it.

[BACK TO TABLE OF CONTENTS](#)

Boost Revenue with Smarter Customer Experience

Great customer service starts with a great employee experience. If we take a look at the top five reasons that lead customers to stop doing business with you, four of the top five can be traced back to a deficiency in employee experience (EX).

1 in 3 consumers say they will walk away from a brand they love after just one bad experience. While there is a road to recovery, in most cases, from a bad interaction, customer retention is still cheaper than customer acquisition. As long as the old rule of thumb holds true that acquisition will cost five times more than retention, it’s more than worthwhile to focus on preemptively eliminating bad experiences at the source — the employee experience. In the eBook, you will learn:

- The top five reasons customers stop doing business with a company
- Why great customer experience starts with great employee experience
- The benefits of a unified AI-First approach



FEATURED CONTENT

[READ MORE](#)



The Glass Pipeline: Achieving Radical Transparency with AI and IoT in the CSDDD Era

The complexities of integrating AI and IoT into global supply chains, including environmental impacts, human rights considerations and geopolitical risks, are leading decision-makers to adopt responsible practices.

The Corporate Sustainability Due Diligence Directive—sometimes cited with the acronyms CSDDD or CS3D—imposes legally binding obligations on large companies operating within the European Union to identify actual and potential environmental human rights risks linked to their supply and value chains. The metaphorical image of a glass pipeline highlights the high transparency required for success. How could artificial intelligence and the Internet of Things assist businesses obligated to follow this new law?

Uncovering Hidden Threats

AI and IoT improve visibility, which is particularly important for large enterprises. These entities often operate multiple sites in numerous countries. As sprawling supply chains expand, maintaining oversight becomes more challenging. Connected devices can give real-time alerts of issues for employees to investigate, helping them stay on top of matters before they get out of control.

In June 2025, the Council of the European Union provided additional clarity by setting thresholds for the CSDDD. It applies to businesses with a net turnover of €1.5 billion and 5,000 or more employees. Members believe these have the biggest value chain impacts and are best equipped to absorb the extra costs of due diligence processes.

The Council also stipulated that applicable organizations could perform general scoping exercises to determine where actual and potential adverse impacts will likely occur according to reasonably available information. AI and IoT work well for fulfilling this requirement because teams often set them up to run in the background, sometimes collecting data for weeks or months. Gathered information may illuminate how threats have increased or otherwise changed over time.

Increasing the Accessibility of Digital Tools

Parties familiar with the issue cite traceability as essential for enabling supply chain transparency and verifying the absence of deforestation. Some advocate for making digital public goods and infrastructure central to such efforts.

Digital public infrastructure encompasses frameworks or foundational improvements everyone can use to build value. In supply chains, it might include online identifiers for farms or farmers, payment systems that allow instant, traceable transactions, or secure data-sharing platforms and tools.

Conversely, from a supply chain perspective, digital public goods are freely available tool kits for problem-solving. They include resources such as datasets, monitoring software and AI models to analyze satellite images. Making them open and adaptable increases user-friendliness, including for entities unaccustomed to using AI and IoT.

Companies that follow the CSDDD could facilitate these two prongs to boost technology access, especially among smaller or less-resourced partners. Those parties might need specific support to comply with new expectations. Reducing Unintended Consequences

Even decision-makers who make measurable progress in building highly functional, transparent supply chains may discover additional work to do. Many use AI to find and mitigate risks in global networks. These include and span beyond the CSDDD's scope.

Geopolitical tensions, pandemics, and raw or finished goods shortages all trigger potential threats for logistics professionals to understand and minimize. Although some factors remain outside their influence, thorough knowledge of the issues raises proactiveness and preparedness in uncertain times.

As they assess how AI might fit into due diligence, leaders must understand the potential downsides that could counteract their efforts. Data centers and algorithm-training processes consume tremendous amounts of water and energy. Although researchers continually look for better options, these might take years to become mainstream or never manifest commercially.

Some AI applications create human rights issues, too. They require massive labor forces of millions of people worldwide who identify and tag images. These workers typically receive small amounts of money despite frequent exposure to trauma-inducing content.

They also often live in parts of the world with fewer employee protections than locations such as the United States and Europe, although those regions benefit from the results. The CSDDD may end this historical dark side of AI, requiring businesses to deploy the technology more responsibly. Applying Technology to Uphold the CSDDD

Technology can assist brands in abiding by the CSDDD. Decision-makers using it to raise supply chain transparency should consider the above examples and look for ways to maximize mutual benefits while generating reliable data and actionable alerts.

[BACK TO TABLE OF CONTENTS](#)

The Intersection of Tariffs and Supply Chain Sustainability

Rising tariffs are forcing companies to find new ways to balance cost control with sustainability goals.

Tariffs aren't just a trade issue anymore. They've become a constant concern for procurement teams and supply chain operators that have to factor tariffs into every decision. For companies already working with thin margins or dealing with issues like supply chain disruptions, this added expense can make it difficult to balance price, supply stability and long-term goals.



[READ MORE](#)



5 Ways NMFC Docket 2025-1 Will Reshape LTL Shipping

Discover five ways Docket 2025-1 affects supply chain professionals handling LTL goods, potentially impacting prices and processes.

Supply chain professionals know that succeeding in their industry means adapting to changes. One recent example is National Motor Freight Classification (NMFC) Docket 2025-1, which was released on July 19, 2025, by the National Motor Freight Traffic Association (NMFTA). NMFC Docket 2025-1 is the first significant update to NMFC methods of grouping goods. Early analyses show it will affect less-than-truckload (LTL) shipments, but what specific differences should applicable professionals expect?

1. Implementing a New Classification System

Some of the most notable changes imposed by NMFC Docket 2025-1 require shippers and carriers to change how they classify LTL freight. NMFTA officials say the updated approach streamlines things. Because adjusting to different ways of doing things can take some time, those working with these shipments most frequently should study the differences and assess how they will affect their work.

One of the changes applies a [standardized density scale to goods](#) without liability, special handling or stowability requirements. When goods have those characteristics, the appropriate commodity class accounts for them. The new approach also groups similar products, modernizing and condensing the former system. It had 18 freight classes, ranging from 50 to 500 according to density, stowability, liability and handling needs. In such cases, lower-classed items cost less to ship and vice versa.

The NMFTA's website explains that the organization [reclassified more than 2,000 items](#), and thousands now have the full density-based system applied to them. NMFC Docket 2025-1 also replaced the previous 11-tier density scale with

a 13-entry one, adding two classes to enhance classification accuracy and granularity. Items with stowability, liability or special handling needs have system flags applied to them, making them easier to identify and facilitating correct billing.

2. Increasing Potential Costs

Many supply chain professionals consider rising expenses inevitable, knowing they must behave proactively to mitigate adverse effects. Reading contracts thoroughly prevents hidden surprise charges, and optimizing shipping routes reduces fuel costs. Costs per shipped unit also [increase due to underutilized container space](#). That reality could become even more evident for some LTL shippers as they abide by NMFC Docket 2025-1.

These parties charge clients according to the space occupied in their trailers and the goods' handling requirements. Shippers must now calculate rates based on items' weight, density and dimensions and collaborate with LTL freight carriers to facilitate accurate data-sharing practices.

Due to consolidating some categories, shippers may discover that goods formerly assigned to one group now belong to a different group associated with higher costs. Becoming familiar with the new classification system is one of the best ways to reduce risks through better awareness and preparedness.

The NMFTA's operations director advises shippers to control what they can by [packing goods and pallets for maximum efficiency](#) to increase their capacity. Reducing package sizes and filling air pockets inside boxes also helps, especially for people who regularly deal with high LTL freight volumes.

3. Introducing New Tech Tools

Remaining flexible during changes may mean exploring purposeful tools to enhance largely manual tasks. The NMFTA introduced its NMFC Item Lookup Tool as a complementary resource to help industry professionals transition to the docket's specifications. The organization only offered it briefly. It now encourages parties to use its official ClassIT+ interface.

It is a premium product that allows people to search for NMFC classifications in seconds by inputting historical data, product attributes or keywords. Shared notes, saved searches and alerts encourage collaboration across companies and teams, giving all authorized parties access to the most current information. Freight-auditing tools also lower costs by minimizing reclassification disputes and creating document trails for convenient reference.

ClassIT+ pricing starts at \$215 per seat annually, although specifics vary based on the chosen plan and number of users. Because NMFC Docket 2025-1 opened a market niche for professionals eager to classify LTL items correctly, other companies offer alternatives. One is an artificial intelligence agent. Its provider says it identifies freight classes and codes for [approximately 2,000 orders daily](#), displaying the information in about three seconds.

A company representative explains that manually finding this information for LTL tenders can take about 10 minutes per instance. Automating the process frees up people's time. Some users also use a bulk-lookup feature that simultaneously determines the relevant information for hundreds of shipments. Streamlining administrative necessities gets goods on the road faster. Supply chain specialists can then spend more time on tasks requiring expertise and real-world experience, such as resolving disruptions.

4. Tailoring Employee Training and Workflows

Supply chain managers should learn about available tools to help them navigate NMFC Docket 2025-1 to determine if they could accelerate their workflows and improve accuracy. Even if using these tools requires budgeting for subscriptions, the benefits may prove worthwhile for entities handling large volumes of LTL shipments.

Successful logistics professionals thrive when they [develop data and shipment analysis capabilities](#). Doing well in their roles may also involve completing continuing education modules that explain the basics of the new classification system. The NMFTA holds periodic webinars and archives

past events on its website. That content could help training leaders customize training to specific LTL situations most applicable to individualized workplaces.

The organization also offers a classification interpretation service so customers can get advice from its Freight Classification Development Council experts about specific commodities. Although not legally binding, these answers support people seeking guidance beyond general content. The NMFTA charges \$50 per query, or \$220 for five.

Because responders need particular details—such as a product's packaging, manufacturer description, and applicable photos or diagrams—those using this service should review the requested information and gather it to optimize their productivity and get the best results. Depending on the volume of monthly submitted requests, some LTL shippers may assign specific workers to spend most or all of their time on that task, requiring workflow adjustments.

5. Emphasizing Continued Adaptability

Despite the NMFTA introducing NMFC Docket 2025-1 in July, some companies have yet to enforce it. FedEx is one such brand. Because it is a leading LTL carrier, this decision has far-reaching effects on current and potential customers. The entity's freight division will [begin operating under the new requirements as of December 1, 2025](#), but customers don't have to wait until then.

The FedEx website also mentions customers may incur inspection surcharges when bill-of-lading information contains inaccuracies or omissions. That stipulation shows why shippers must carefully fill out everything, even in the early transition phases.

They should also prepare for more changes in NMFC Docket 2025-2, which the NMFTA will publish following a comment period that closes on September 23, 2025, and a subsequent public meeting. Flexibility and responsiveness increase resilience as supply chain representatives assess potential or known changes to their processes and expenses.

Preparedness Brings Responsiveness

Even if supply chain professionals cannot predict the long-term impacts of NMFC Docket 2025-1 on their operations, they should stay informed through insights from peers, industry organizations and other reputable sources. Those insights help them act quickly to minimize unwanted effects.



The End of De Minimis: What It Means for Supply Chains

With the \$800 de minimis exemption gone, companies now face added costs, compliance steps and supply chain changes that will take time to absorb.

On August 29th, the U.S. de minimis exemption officially ended. Put in place in 1938, the policy allowed shipments valued under \$800 to enter the country duty free and with minimal paperwork. Originally intended to simplify low-value imports, de minimis was heavily used by e-commerce companies that were shipping millions of packages into the U.S. each day without tariffs.

The suspension of de minimis marks a turning point for supply chains. Importers, retailers and logistics providers now face higher costs and more compliance steps for goods that once moved freely. The change is expected to disrupt shipping patterns and force companies to rethink any sourcing, fulfillment or distribution strategies that were designed around the exemption.

The move is being welcomed by some who see it as leveling the playing field, but others warn it will raise costs and slow trade. “By suspending de minimis, the federal government is seeking to close the gap between U.S. companies and foreign sellers,” NAFTA’s Jeffrey J. Tafel writes in “[What the End of the ‘De Minimis Exemption’ Means for U.S. Trade.](#)” “The decision

reflects growing concern about how the system was being used and its impact on domestic operations.”

In an interview with [NBC News](#), EY’s Lynlee Brown warned that the sudden change “is about to probably cause a bit of pandemonium,” adding that it brings financial, operational and compliance challenges because shipments once treated as informal entries will now require full customs scrutiny.

Citing research from the National Bureau of Economic Research, NBC estimates that the end of de minimis could cost U.S. consumers at least \$10.9 billion (or \$136 per family). “The research found low-income and minority consumers would feel the biggest impact as they rely more on the cheaper, imported purchases,” it adds.

Measuring the Impacts

De minimis has been in place for nearly 90 years. It started at \$10 and has been bumped up several times until its increase to \$800 in 2015. Its demise is already driving some short-term disruptions (e.g., several postal services suspended shipments ahead of the rollback), but the bigger impact will show up over

time. Manufacturers that rely on small, fast-moving imports must reassess inventory practices, for example, and retailers have to determine how much of the added cost to absorb or pass along to customers. Logistics and transportation networks will also have to adapt to new customs requirements.

So far, the end of de minimis is hitting hardest at the small and mid-sized firms that depended on it to keep costs down. “Basically, everything will now be subject to tariffs—it’s going to be a very real concern for small businesses,” CBIA president and CEO Chris DiPentima told the [Connecticut Business and Industry Association](#). He warned that the change will drive up prices and add major administrative burdens, especially for companies without the scale to absorb them.

The effects extend beyond retail. In “[Navigating the New Trade Reality: How De Minimis Ends a Supply Chain Era](#),” freight forwarder The ILS Company discusses the potential impact on industrial supply chains. Manufacturers that once relied on small, fast shipments of parts now face longer delays and new compliance steps.

Aerospace, automotive, medical and mining companies all depend on low-value components that are suddenly subject to full customs procedures. That added friction can stall production lines and increase costs on everything from bolts to diagnostic equipment.

Steps to Take Now

The elimination of de minimis also places a bigger emphasis on compliance and visibility, mainly because sub-\$800 shipments were previously subjected to few (if any) regulations and inspections. With informal parcel entries gone, companies must be ready for full customs oversight. “Navigating this new landscape requires an in-depth understanding of complex trade regulations,” ILS cautions.

To shippers that are navigating these new complexities, ILS recommends moving from parcel shipments to bulk imports, sourcing more inputs domestically or nearshore, and investing in stronger compliance systems. “The new trade reality is challenging, but it is also an opportunity,” the company adds. “Now is the time for companies to strengthen their supply chains, reduce long-term risks, and build a more resilient foundation for future growth.”

[BACK TO TABLE OF CONTENTS](#)

5 Steps to a More Resilient Supply Chain

Practical actions supply chain leaders can use to reduce risk, control costs and keep goods flowing.

Supply chains are under constant pressure. Disruptions from conflict, natural disasters or demand swings are now routine, and most networks are not prepared. Research shows that the majority of supply chains still lose value when uncertainty hits. That fragility leaves companies scrambling to recover, often at the cost of both margins and customer trust.



[READ MORE](#)



What Extended Producer Laws Mean for Business

EPR laws are expanding across the U.S., shifting recycling responsibilities to producers and reshaping how businesses manage packaging and compliance.

If the acronym “EPR” hasn’t crossed your radar yet, it probably will soon. A policy approach that assigns producers responsibility for the end-of-life of products, extended producer responsibility laws are being put in place to help promote waste reduction and incentivize product design that minimizes environmental impacts.

According to the [Sustainable Packaging Coalition](#), most EPR programs for packaging either encourage or require producers of packaging products to join a collective producer responsibility organization (PRO). The PRO, which is usually a non-profit organization, develops a producer responsibility plan and manages the producer responsibility program.

Here’s how it works:

- The EPR program’s producers pay fees to the PRO.
- The PRO then distributes the funds to cover the costs required by program legislation.
- Costs generally provide funding for the end-of-life management of covered products (collection, sortation, processing).

- Covered products are either defined in legislation or in the producer responsibility plan, and are the specific items or materials that must be managed within the program.

The Coalition says 12 states have introduced packaging legislation this year and that a total of seven EPR bills have been passed.

What are Extended Producer Laws?

Over the past two decades, lawmakers have expanded EPR laws beyond hazardous items like electronics and paint to cover everyday waste such as plastic packaging and paper. The goal is to shift recycling costs away from taxpayers and place them on the companies that put these materials into the marketplace.

By requiring producers to fund or manage end-of-life programs, states hope to strengthen recycling systems and push manufacturers toward more sustainable product design. These programs come with strings attached, particularly for the

manufacturers, distributors and retailers that make and/or sell products. The programs come with new fees, reporting requirements and compliance work that consume both time and money.

Trade groups like the [National Association of Wholesaler-Distributors \(NAW\)](#) have come out strongly against the EPR model, arguing that it creates unnecessary burdens for its members and that it doesn’t factor in the complexity of the modern supply chain. “...many EPR laws shift the burden away from these key decision-makers and enact mandates and fines on parts of the supply chain that have little to no control over decisions to design, reduce, reuse or recycle a product,” NAW explains.

“EPR laws that enact regulatory and punitive financial burdens on wholesalers and distributors are ineffective policies ignoring the key players in any circular economy,” it continues, “[and] shielding consumers and companies that would have the greatest impact on sustainability and consumer behavior.”

Supporters & Detractors

EPR has skeptics who worry about added costs for business and supporters who see it as a way to improve recycling. In [Recycling Today](#), for example, James T. Asali of law firm Chamberlain Hrdlicka makes the case for EPR laws and points out that just 5%-6% of plastic scrap is currently being recycled in the U.S. The rest of it is either sent to a landfill, incinerated or leaked into the environment. “Even renewably sourced paper, which is an ideal replacement for unnecessary plastic packaging as it is recyclable up to 25 times, is not close to reaching its potential,” he writes.

Asali says more than 40 countries and provinces globally have “tracked more than three decades of success” with EPR programs, and that those programs support packaging recycling rates of as high as 80%. “Nationwide, states are considering [EPR] programs and laws that, when properly designed and implemented, have a proven track record of significantly increasing recycling rates,” he writes, “saving municipalities millions of dollars, as well as reducing waste.”

Something Needs to be Done

If Gartner’s latest predictions are accurate, the nation’s packaging waste problem is not going away on its own. By the end of this year, Gartner expects 90% of public sustainable packaging commitments to remain unmet because companies continue to rely on plastics and single-use packaging. And by 2028, it says 75% of organizations with stated sustainable packaging targets will sunset voluntary goals and adopt legislative guidelines instead.

“With packaging rules rapidly evolving, CSCOs must shift their focus to meeting [EPR] requirements, which will demand new investments in data management, package design and compliance resources,” said Gartner’s John Blake in a recent [press release](#). He adds that many organizations are “currently unprepared” for the new EPR requirements, and they don’t have the data management tools and resources needed for compliance.

“Longer term,” Blake concludes, “[EPR] legislation can lead to significant costs for PRO fees and fines, alternative materials, and supply chain adjustments.”

🔗 [BACK TO TABLE OF CONTENTS](#)

What is Supply Chain Resilience?

With global supply chains facing ongoing disruption, resilience has become an important business priority and a driver of competitive advantage.

Resilience is one of those terms that gets tossed around often and interpreted in different ways. In supply chains, some view it as risk management, others focus on recovery speed and still others frame it as the ability to keep operating through disruption. Each perspective highlights a different angle which is why it’s important for companies to be clear about what resilience means in their own context.



🔗 [READ MORE](#)



AI in Procurement: Early Wins and the Road Ahead

A new survey shows how artificial intelligence is reshaping procurement functions and how far some companies still have to go in their AI adoption journey.

Artificial intelligence is no longer an experiment in procurement. Companies are using it to source suppliers, analyze spending and manage contracts. What started with pilot projects has matured into a business requirement for organizations that want to compete in today's market.

With procurement teams being asked to cut costs, manage volatile supply chains and provide more visibility, AI helps by taking on routine work, processing large datasets and identifying risks earlier. For groups that relied on spreadsheets and manual processes, the shift is already changing how day-to-day procurement gets done.

For example, [McDaniel College](#) discovered during the pandemic that its paper-based purchasing process was unsustainable. Staff were overwhelmed by manual approvals and duplicate orders, and delays kept growing. By adopting an AI-enabled procurement system, the college eliminated paper forms, sped up approvals and created clear visibility into spending, making the process faster and more reliable for everyone involved. "When your workflows are more efficient,"

says Julie Fisher, controller of financial services, in [Goodbye to Paper-based Purchasing](#), "you can focus more on the larger, strategic goals."

Expanding AI's Reach in Procurement

A new report from ProcureCon Insights tracks AI's progress on the procurement front. In [AI Adoption and its Transformative Impact on Procurement](#), the company points to broad adoption of the technology across procurement functions, measurable benefits for early movers and gaps that are still holding some teams back. The research makes clear that while satisfaction is high, most companies are still in the early stages of moving from limited AI applications to strategically integrating the technology into their day-to-day operations.

According to the report, AI is playing an increasingly important role in procurement functions like supplier management, spend analysis and cost reduction. The survey also surfaced the key gaps that organizations need to address as they push beyond AI pilots and over to full adoption.

Here are some of the key findings:

- **Adoption is maturing:** 8% of organizations are conducting early pilots, 49% have reached moderate adoption and 38% are at a more advanced level. Only 5% are fully integrated, which shows that broad enterprise use is still limited.
- **AI is meeting expectations:** 92% of respondents report satisfaction with their AI tools, showing the technology meets expectations. Only 16% are very satisfied, which signals that functionality and transparency still need to improve.
- **Cost savings and ESG benefits are tangible:** 55% of organizations report spend reductions while 54% see sustainability gains. These results prove that AI can deliver financial value and support environmental goals at the same time.
- **Investment momentum is healthy:** 88% plan to increase AI spending over the next year, making AI a clear priority. Still, 90% admit low confidence in measuring ROI, which shows the urgent need for better evaluation methods.
- **Cultural and technical barriers remain:** 35% cite a lack of proven use cases, 29% face resistance to change and 23% struggle with unrealistic expectations. Success requires leadership support, education and realistic planning.

Next Steps

The survey findings reveal that procurement is at a turning point when it comes to AI adoption. While the early wins are real, the long-term value won't emerge until AI shifts from tactical use to broad strategies that reshape the buying function. To build on early wins and unlock AI's broader benefits, ProcureCon advises procurement teams and their CPOs to focus on these priorities:

- **Develop comprehensive AI strategies beyond tactical implementations.** Organizations should move from isolated AI use cases to integrated strategies that transform entire procurement functions.
- **Invest in change management and workforce development.** Successful AI adoption requires equal attention to technology implementation and cultural transformation through training and support programs.
- **Establish clear return on investment (ROI) measurement frameworks.** Organizations need standardized ways to evaluate AI's financial impact and optimize investment decisions.
- **Focus on foundational capabilities first.** Prioritize operational efficiency and data visibility improvements that create the foundation for more advanced AI applications.

[BACK TO TABLE OF CONTENTS](#)

The Modern Supply Chain Leader's Guide to Smarter Nearshoring

As supply chain disruptions continue, companies are reevaluating nearshoring, emphasizing the importance of supplier visibility, data accuracy and strategic planning to mitigate risks and enhance resilience.

U.S. tariff rates have jumped from an average of 2.5% to nearly 27% in early 2025, the highest levels seen since 1943, affecting everything from semiconductors and electric vehicles to steel and household appliances.



[READ MORE](#)



Securing the Supply Chain: The U.S. Invests \$1 Billion in Critical Minerals

The U.S. Department of Energy will fund mining, refining, recovery and recycling projects centered on reducing reliance on imports and strengthening domestic supply chains.

ager to reduce its dependence on imports, the U.S. is putting nearly \$1 billion toward shoring up its critical minerals supply chain. To get there, the U.S. Department of Energy (DOE) plans to fund projects that expand domestic mining, processing and recycling of the materials needed for batteries, semiconductors and clean energy systems. The goal is to cut reliance on foreign sources and build a more secure industrial base.

The funding covers multiple points in the supply chain, from refining and recovery to battery recycling and advanced processing. According to the DOE, \$500 million is being allocated to battery materials and recycling, \$135 to rare earth refining, \$250 million to recovery at industrial sites and \$50 million will support the advanced semiconductor processes.

Where Will the Money Go?

These new funding announcements were issued in accordance with the Executive Order Unleashing American Energy, and they focus on ensuring “a more secure, predictable,

and affordable supply of critical minerals and materials that are foundational to American energy dominance, national security, and industrial competitiveness,” the DOE says.

“For too long, the United States has relied on foreign actors to supply and process the critical materials that are essential to modern life and our national security,” U.S. Secretary of Energy Chris Wright said in a statement. “Thanks to President Trump’s leadership, the Energy Department will play a leading role in reshoring the processing of critical materials and expanding our domestic supply of these indispensable resources.”

The proposed projects include:

Critical Minerals and Materials Accelerator. The Advanced Materials and Manufacturing Technologies Office expects to release a notice of funding opportunity (NOFO) of up to \$50 million through the Critical Minerals and Materials (CMM) Accelerator program. The CMM Accelerator promotes technology maturation that can unlock capital investments

and facilitate domestic commercialization. The proposed NOFO addresses several areas of interest to electronics manufacturers, including:

- Processes in the rare-earth magnet supply chain.
- Processes to refine and alloy gallium, gallium nitride, germanium and silicon carbide for use in semiconductors.
- Cost-competitive technologies for direct lithium extraction and separation.
- Critical-material separation technologies that allow for the co-production of useful products from byproducts and scrap.

Mines & Metals Capacity Expansion. The Office of Fossil Energy and Carbon Management is announcing its intent to issue a NOFO to support approximately \$250 million of financial assistance for domestic industrial facilities that have the potential to produce valuable mineral byproducts from existing industrial processes. To de-risk the technical uncertainty and financial risk for commercial deployment, many technologies must be piloted at an industrial scale in an industrial facility where material feedstocks can be processed. The proposed NOFO addresses topic areas pertaining to both industry at large and the coal-based industry.

Rare Earth Elements Demonstration Facility. The Office of Manufacturing and Energy Supply Chains (MESC) is announcing its intent to issue a NOFO of up to \$135 million to enhance domestic supply chains for rare earth elements (REEs). The goal is to reduce America’s dependence on foreign sources of REEs by demonstrating the commercial viability of methods for domestically refining and recovering REEs from mine tailings, deleterious material and waste streams.

Battery Materials Processing & Manufacturing. MESC also plans to issue a NOFO of up to \$500 million to expand U.S. critical mineral and materials processing and derivative battery manufacturing and recycling. The proposed funding opportunity supports demonstration and/or commercial facilities processing, recycling or using (in the manufacturing process) critical materials that may include traditional battery minerals such as lithium, graphite, nickel, copper, aluminum and minerals that are contained within commercially available batteries (i.e., rare earth elements).

Recover Critical Minerals from Industrial Wastewater. The Advanced Research Projects Agency-Energy (ARPA-E) is expected to announce project selections for its \$40 million program to develop technologies to recover critical minerals from industrial wastewater. ARPA-E’s Realize Energy-rich Compound Opportunities Valorizing Extraction

from Refuse waters (RECOVER) program aims to enable the U.S. to reduce its dependence on critical mineral imports and replace them with secure, domestic sources.

The message in all this is clear: The U.S. government sees critical minerals as much more than just “raw materials.” By investing in mining, refining, recovery and recycling, the DOE is making the case that controlling these inputs is essential to building resilient supply chains.

[BACK TO TABLE OF CONTENTS](#)

RingCentral Trends 2025: The state of AI in business communications

88% of teams are now using AI tools weekly.

For those leveraging AI for voice data analysis, they’re seeing faster resolution times, improved customer satisfaction, and reduced agent burnout. Looking for more exclusive insights? Download our report, The state of AI in business communications, to discover key 2025 trends and investment priorities to help inform your AI strategy.



FEATURED CONTENT

[READ MORE](#)

2025 TOP ASIA PACIFIC Distributors



SUPPLY CHAIN
connect™

Company	Locations	Employees	Founded	Headquarters	2024 Global Revenue
1. Win Source Electronics	13	318+	1999	Shenzhen	\$568,000,000
2. Amble Electronics Asia Limited	18	280+	2010	Hong Kong	\$450,000,000
3. Shenzhen Unibetter Technology Co.,Ltd.	7	244	2009	Shenzhen	\$240,000,000
4. Shenzhen Shengyu Electronics Technology Ltd.	4		2016	Shenzhen	\$235,211,831
5. LCSC Electronics			2011	Hong Kong	Publisher Estimate
6. ARS Electronics Company Ltd.	10	220	1998	JiNing	\$200,000,000
7. Flying Technology Co., Ltd.	10	270	2010	Hong Kong	\$150,000,000
8. Icsolc Technology Limited	3	95	2016	Shenzhen	\$135,000,000
9. Cytech Systems Limited	6	120	2013	Shenzhen	\$125,000,000
10. Özdisan Elektronik A.S.	6	315	1980	Istanbul	\$118,000,000
11. Chip Source Co., Limited	2	50-100	2007	Shenzhen	\$100,000,000
12. Ample Solutions	8	253	2008	Singapore	\$95,000,000
13. THJ(HK) Technology Limited	3	30+	2012	Shenzhen	\$52,000,000
14. DGT Technology (HK) Co., Limited	4	105	2010	Shenzhen	\$50,000,000
15. Supreme Components International Pte Ltd.	14	75	2001	Singapore	\$44,995,406
16. RX Electronics Limited	2	30+	2004	Hong Kong	\$36,000,000
17. Ersas Electronics	4	80-90	2012	Singapore	\$32,570,000
18. All True Tech Electronic Co.,Ltd.	4	50+	2011	Shenzhen	\$30,000,000
19. Compo Electronics Asia Limited	16	375+	2003	Shenzhen	Publisher Estimate
20. Digisino Electronics Limited	3	85	2018	Kowloon	\$24,244,523
21. RYX Electronic (HK) Limited	4	50-60	2010	Shenzhen	\$23,000,000
22. Lixinc Electronics Co., Limited	2	20-50	2018	Shenzhen	\$20,000,000
23. JAK Electronics		20-50	2018	Hong Kong	\$18,000,000
24. AI Chiplink Limited	4	96	2017	Shatin, N.T.	\$17,772,917
25. Utmel Electronic	2	200+	2017	Kowloon	Publisher Estimate
26. Bison Technologies Limited	1	10+	2006	Shenzhen	\$12,000,000
27. Hantech		20+	1973	Shenzhen	Publisher Estimate
28. Heisener Electronics			2014	Hong Kong	Publisher Estimate
29. Finestock Electronics			2015	Hong Kong	Publisher Estimate
30. Kehuite Technology Dev. (HK) Ltd.			2004	Hong Kong	Publisher Estimate
31. Bonase Electronics Co., Ltd.	2	87	2006	ShenZhen	\$5,000,000
32. CH Global Co.,Ltd.	3	15	2005	Pusan	\$5,000,000
33. Fairstock hk limited	3	106	2013	Hong Kong	\$4,070,000
34. New Strength Electronic Co., Limited			2005	Shenzhen	Publisher Estimate
35. Chipmall Electronics			2006	Shenzhen	Publisher Estimate
36. Fixchips Technology			2011	Singapore	Publisher Estimate
37. CJJ HK Technology Limited			2013	Hong Kong	Publisher Estimate
38. Interine Comonents Co., Limited			1987		Publisher Estimate
39. Fly-Wing Technology (HK) Co., Ltd.			2012	Hong Kong	Publisher Estimate
40. Fudatonghe Limited			2017	Hong Kong	Publisher Estimate
41. Shenzhen Augswan Electronics			2019	Shenzhen	Publisher Estimate
42. Perceptive Components Limited			2019	Hong Kong	Publisher Estimate
43. Bostock Electronics (HK) Limited			2015	Hong Kong	Publisher Estimate
44. Pneda Technology			2009	Hong Kong	Publisher Estimate
45. Nova Technology (HK) Co., Ltd.		Less than 20	2000	Hong Kong	Publisher Estimate
46. ODG (Origin Data Global)			2011	Shenzhen	Publisher Estimate
47. IC Components Limited	2	35	2001	Hong Kong	\$2,850,000
48. Ariat Technology Limited	2	30	1996	Hong Kong	\$2,500,000
49. Smart Pioneer Electronics Co.,Ltd.	2	12	2021	Hong Kong	\$1,800,000
50. China Golden Sun Technology Ltd.			2015	Shenzhen	\$1,000,000