How supply chains benefit from using generative AI

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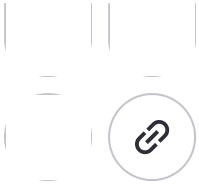

Across the end-to-end supply chain, the buzzworthy technology adds extra capabilities to AI tasks and promises a simplified user experience.

In brief

- Use cases exist today, and whether you win or lose in the market may soon depend on having the best generative AI tools and the data quality to match them.
- Organizations are identifying business needs and emboldening them with generative technology, whether in planning, sourcing, manufacturing or delivery.

Corporations have been increasingly deploying artificial intelligence (AI) in supply chains for demand planning and procurement, while exploring its use in other areas, such as standardizing processes and optimizing last-mile delivery. Even in the relatively nascent area of sustainability tracking and measurement, AI adoption is as high as 62%, **according to an EY study**.

But in the last year, another evolution of AI has seized the spotlight — generative AI (GenAI), popularized by ChatGPT — that has upended our notions of what is possible.

What is GenAI in supply chain?

GenAI creates new content, such as numerical data, images, text, audio or video, based on data on which it has been trained. Recent advances make it simpler to use and realize value from, but the technology isn't new. Already around 40% of supply chain organizations are investing in GenAI, focusing on knowledge management applications.[1]

The future is now

%

of supply chain organizations are investing in GenAI

As investors pour cash into the technology, executives are racing to determine the implications for operations and business models. For those who diligently pursue innovation guided by strategy and an understanding of the limitations — not by an impulse to chase after the latest shiny object — GenAI can prove to be an agile co-advisor and multiplier in strengthening supply chains.

There are limitations and risks to using GenAI in supply chains — especially when implementation is rushed or poorly integrated across organizations and supply chain networks. GenAI tools are only as powerful as their input data, so they are limited by the quality and availability of data from supply chain partners. Broadly, the risks that come with fewer human touchpoints — like lack of transparency or ethical and legal considerations — are best managed with strong governance and working with experienced partners.

However, what seemed like science fiction even a year ago is now being leveraged in real-world use cases across the end-to-end supply chain. These projects are enabled through GenAI's ability to:

- Classify and categorize information based on visual, numerical or textual data.
- Quickly analyze and modify strategies, plans and resource allocations based on real-time data.
- Automatically generate content in various forms that enables faster response times.
- Summarize large volumes of data, extracting key insights and trends.
- Assist in retrieving relevant information quickly and providing instant responses by voice or text.

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Leaders can integrate AI into these four building blocks of supply chain operations: plan, source, make, move.

Plan: generating simplicity with AI

GenAI adds simplicity to interactions throughout tech-enabled planning efforts. The "chat" function of one of these GenAI tools is helping a biotech company ask questions that inform its demand forecasting. For example, the company can run what-if scenarios on getting specific chemicals for its products and what might happen if certain global shocks occur that disrupt daily operations. Today's GenAI tools can even suggest several courses of action if things go

awry. Risk management may be the most promising area for GenAI's input, particularly in preparing for risks that supply chain planners haven't considered.

Global Fortune 500 companies and government organizations are developing GenAI tools with partners to map and navigate complex supplier networks. These tools make it easier to plan for alternative suppliers in the event of a disruption and offer product tracing platforms to meet regulatory or ESG requirements.

Where GenAI drives value in planning:

- Demand forecasting +
- Production planning +
- Risk management +

Source: automate vendor negotiation

A leading US retailer and a European container shipping company are using bots powered by GenAI to negotiate cost and purchasing terms with vendors in a shorter time frame. The retailer's early efforts have already reduced costs by bringing structure to complex tender processes. The technology presents the opportunity to do more with

less, and when vendors were asked how the bot performed, over 65% preferred negotiating with it instead of with an employee at the company. There have also been instances where companies are using GenAI tools to negotiate against each other.

Beyond negotiations, GenAI presents an opportunity to improve supplier relationships and management, with recommendations on what to do next. These tools are useful to quickly extract information from large contracts and help you better prepare for renewal discussions, for example.

Where AI drives value in sourcing:

- Supplier management +
- Sourcing +
- Contracts +

Make: faster, more effective creation and maintenance

GenAI in supply chain presents the opportunity to accelerate from design to commercialization much faster, even with new materials. Companies are training models on their own data sets and then asking AI to find ways to improve productivity and efficiency. Predictive

maintenance is another area where GenAI can help determine the specific machines or lines that are most likely to fail in the next few hours or days. This can help improve overall equipment effectiveness (OEE) — one of the most important manufacturing metrics.

For instance, one leading industrial manufacturing company in Europe partnered with a tech leader to use GenAI for factory automation and product lifecycle management, shortening the product development lifecycle and boosting efficiency with automated inspection processes.

Where AI drives value in manufacturing:

- Product design +
- Predictive maintenance +
- Material science and engineering +

Move: using GenAI to optimize logistics

One of the biggest logistics companies in the US is using a proprietary AI platform to optimize picking routes within its warehouses, boosting workforce productivity by about 30% while slashing operational costs through optimized space and materials handling. While this is not a new use for AI, the generative component offers added dimensions of customization — say, optimizing based on less fuel, or prioritizing

certain deliveries or considering many other factors in a user-friendly application. Chatting with its customized tool helped the company understand if its trade network was optimized, and it even offered suggestions for improvement.

Where AI drives value in logistics:

- Global trade optimization +
- Logistics network design +
- Last mile dynamic route optimization +

Get started today

While GenAI is a powerful tool with certain limitations, it is not a strategy. Focus on the business value and define a roadmap to shape and impact the organization, guided by four steps:

1. Focus on domain-wide transformation: Pinpoint high-impact use cases, envisioning a cohesive ecosystem that synergizes with traditional business models and unlocks possibilities.
2. Coordinate organization collaboration: Discuss the implications and identify the required skills across functions, going beyond technical roles.

3. Keep an open mind and guard against risks: Implement proof-of-concept pilot initiatives to learn more, drive quick wins and strive for scalable adoption — while taking care on data quality and hallucination risks.
4. Stay ahead of the curve: Explore the art of the possible. As adoption increases, companies will test and implement GenAI in new areas of their supply chains, like in sustainable and responsible supply chains.

Sumit Dutta, Principal, Supply Chain and Operations at Ernst & Young LLP; and Asaf Adler, EY Americas Supply Chain Emerging Technology Leader, both contributed to this article.

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1. IDC's Future Enterprise Resiliency & Spending Survey (Wave 2, 2023)

Summary

AI in supply chain management will help enterprises become more resilient and sustainable and will transform cost structures. While it does have limitations, generative AI presents a multiplier in what humans and technology can achieve together in building efficient and resilient supply chains — whether in planning, sourcing, making or moving. Thanks to recent updates that make it simpler to use and more effective in realizing value, organizations are now forced to determine how these advances will impact their sector or risk disruption.

Navigate your AI journey

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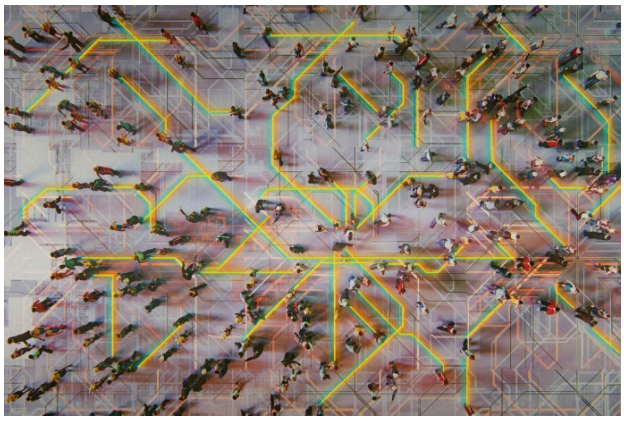

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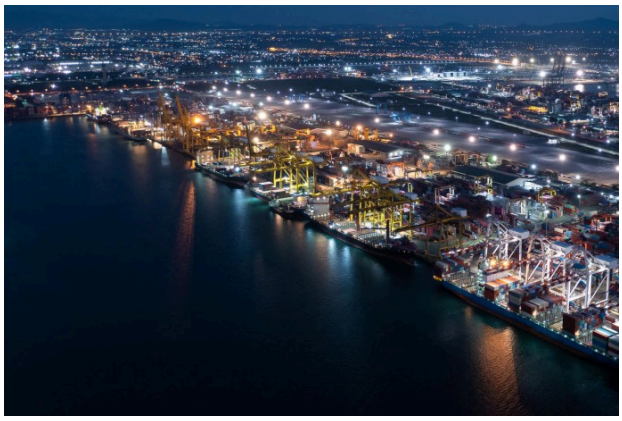

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