



Companies Reassess Generative AI in Supply Chain Tech

In this handbook:

Companies Reassess
Generative AI in Supply
Chain Tech

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Adopting new capabilities in supply chain tech is a priority for organizations, but they are approaching projects cautiously.

New research has indicated that investment is strong in advanced technology such as generative AI for supply chains, but companies are also reassessing GenAI's value and risks.

For example, a recent report from global professional services firm EY indicated that companies are keen on using GenAI in supply chain applications, but the majority of GenAI projects are being paused as other priorities are taking precedence. The report was based on a survey of 460 senior supply chain leaders across the globe, which EY and global research consultancy HFS Research conducted in February and March 2024.

According to the report, 73% of respondents are planning to deploy GenAI tech in the supply chain, but only 7% have completed an implementation, and 62% have reassessed the projects to determine risks of the wider use of generative AI and the expected ROI.

In this handbook:

Companies Reassess Generative AI in Supply Chain Tech

There are challenges and risks that have caused supply chain leaders to pause GenAI projects, according to Glenn Steinberg, global supply chain and operations leader at EY and one of the authors of the report.

The five main challenges according to the survey respondents are concerns around the quality and governance of data being used to feed GenAI applications; uncertainty around evolving regulatory regimes; risks around privacy and cybersecurity; complexities of hardware and software integration; and a skills deficit among GenAI practitioners.

Supply chains used to be a linear model that involved one-to-one relationships, but they are transitioning to networked multiparty ecosystems, according to Steinberg. At the same time, supply chains are evolving to be more autonomous, where much of the activity is handled by the system rather than people.

Organizations that are further along in the transition to autonomous supply chains are more likely to succeed with generative AI because they have more effective data strategies, he said.

In this handbook:

Companies Reassess
Generative AI in Supply
Chain Tech

"If you are already the furthest along toward an autonomous supply chain, it's all about the data," Steinberg said. "Which is why they are most likely to succeed with GenAI."

While GenAI is relatively new, AI itself is no stranger to supply chain applications. EY's research showed that 90% of respondents have enabled traditional AI in their supply chains in some form.

But there are significant differences between the uses of traditional AI and generative AI in supply chains, according to Matthew Burton, EY EMEA supply chain and operations leader and co-author of the report.

Traditional AI has focused mainly on predictive analytics, such as demand sensing, generating the next sales forecast, or predicting when a piece of equipment might fail or need service, Burton said.

"GenAI and LLMs [large language models] comes in as a subset of AI in general, but it opens up a whole new frontier, because suddenly you've got the opportunity to ask

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In this handbook:

Companies Reassess Generative AI in Supply Chain Tech

questions in a natural language context, and then interpret and deal with vast reams of data," he said.

Organizations are concerned about risks such as hallucinations and realize that it's important to get the data foundation for GenAI correct before relying on it for decision-making, Burton said. To this end, organizations are using more retrieval-augmented generation (RAG), which combines LLMs with external and internal data sets.

"If you join a new company as a supply chain planner and they've got hundreds of different reports across the supply chain, it's going to take months to learn," he said. "But if you are now able to access that with RAG AI, you can just ask a question like 'Who's the top performing customer?' or 'Why were we short on service options last week and which products are involved?' and the AI will pull all the data from your own core, so it's not making it up."

Concerns about GenAI results, including hallucinations and the potential for bias in data sets, are among the main reasons why supply chain leaders are pausing GenAI implementations, Burton said.

"Boards are getting involved here as well, as they're asking leadership if they have a responsible AI framework that they can see," he said. "That's causing companies to realize that they have some work to do there. It's all about having AI-ready data."

In this handbook:

Companies Reassess
Generative AI in Supply
Chain Tech

Cost concerns lead to more supply chain tech

Other research indicated that organizations are increasingly adopting advanced technologies to help mitigate supply chain challenges.

The "2024 Agility Index" report from Nucleus Research and ERP vendor Epicor showed that escalating costs in the supply chain are among the chief concerns for organizations, which are implementing technologies such as generative AI, machine learning, automation and advanced robotics to help deal with this.

The Agility Index is a survey of 1,700 supply chain leaders from a variety of industries across the globe.

According to the results, 58% of all organizations and 63% of high-growth organizations reported that they are currently using GenAI in supply chains, primarily through ERP systems or supply chain management applications. The most prevalent use cases for GenAI in supply chains are in customer-facing chatbots (72% of respondents), generating product descriptions (67%), in-application assistants (63%), narrative and management reporting (59%) and natural language querying (53%).

"The Agility Index shows that organizations are looking to these emerging technologies to build resiliency in supply chains against rising costs, especially due to uncertainty moving ahead," said Sam Hamway, a senior analyst at Nucleus

In this handbook:

Companies Reassess Generative AI in Supply Chain Tech

Research. "That's amplified by the highest-growth organizations, as they have the money to invest in these R&D initiatives and are willing to take those risks and become more resilient."

But measuring GenAI adoption is tricky, Hamway said. The technology is new, immature and still being integrated into corporate strategies and roadmaps. Plus, most use cases in supply chains come from capabilities that supply chain technology vendors are adding to existing applications, he said. Therefore, the Agility Index did not look into the maturity of GenAI implementations.

"The thing to keep in mind is that the vast majority of GenAI initiatives aren't done by the actual companies, they're being built into existing software applications," Hamway said. "Often, they are so embedded within the workflow that it's almost unnoticeable or wouldn't qualify by many people as a GenAI initiative within their organization."

The use of a GenAI chatbot added to an existing application is different from organizations building their own GenAI applications, which they might be putting on hold due to data privacy and other concerns, Hamway said.

"Many organizations might be hitting pause on building their own stuff, but in terms of GenAI existing within their organization, it's there and it is increasing," he said.

In this handbook:

Companies Reassess
Generative AI in Supply
Chain Tech

The increasing use of generative AI is also a different issue from the use of traditional machine learning-based AI in supply chains, Hamway said.

"Traditional machine learning is so deeply embedded within workflows in business applications that most people don't know it's there," he said. "Any sort of projection is usually a machine learning model, especially in supply chain. For example, supply chain planning is usually an optimization problem solved by machine learning algorithms."

Supply chain tech addresses challenges

Another recent survey of 150 supply chain leaders in North America from TrueCommerce, a supply chain network and electronic data interchange provider, showed that businesses face a variety of supply chain challenges and are adopting new technologies to help them become more efficient, accurate and flexible.

A majority of respondents -- 95% -- expect some level of supply chain difficulties this year. Survey-takers indicated that top challenges are around order price changes driven by inflation pressures, labor shortages and cybersecurity threats.

Addressing order fulfillment challenges includes adopting technologies that help organizations become more efficient and improve customer experience that leads to

In this handbook:

Companies Reassess Generative AI in Supply Chain Tech

better on-time delivery of products, according to Ryan Tierney, senior vice president of product management at TrueCommerce.

"Over the years, businesses have had to adapt to the way things are sold and purchased within the market," Tierney said. "We've seen an increase in businesses moving from traditional B2B and brick-and-mortar stores to more B2C and direct-to-consumer."

The biggest supply chain challenges that the report identified are inventory accuracy and visibility, he said. Businesses are also facing issues with knowing where their products are and when they will be shipped, particularly now with regulations in industries such as food and beverage around the tracking and traceability of products.

"If you communicate that you have the products, but you don't, that's a poor customer experience, and you're not going to see return buyers," Tierney said.

Companies are adopting supply chain technology to help manage issues such as multichannel fulfillment and supply chain visibility, he said.

The report indicated that supply chain leaders are intent on upgrading supply chain systems, as 70% of respondents said they plan to spend more on supply chain software this year than in the past year. Further, 91% of respondents plan to invest in

In this handbook:

Companies Reassess
Generative AI in Supply
Chain Tech

ERP systems that support supply chain processes, with 70% planning investments for this year and 21% planning to invest by 2027.

Most of this investment is being driven by the move from on-premises systems to cloud ERP systems, Tierney said.

"We continue to see that advancement of cloud ERP adoption," he said. "Businesses are continually challenged with evolvement of expectations in their market and are having to make investments to make sure that they're not falling behind."

Jim O'Donnell is a senior news writer for TechTarget Editorial who covers ERP and other enterprise applications.