THE LIMITATIONS AND POTENTIAL OF GENERATIVE AI IN THE SUPPLY CHAIN

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Tools like ChatGPT have made waves in creative industries, but in the complex world of the supply chain, widespread adoption of generative artificial intelligence has been much slower.

Even so, some experts are predicting that generative AI — supported by other AI-powered data analysis — will potentially eliminate many human touchpoints throughout the supply chain.

So does generative AI have real potential in the supply chain, or is it all hype?

It's a question every organization needs to answer for itself, and it starts with understanding the challenges associated with generative AI within supply chain operations. To acquire a clearer picture of the generative AI use cases that are worth investigating, it's necessary to gain clarify on the potential constraints.

AI applications in the supply chain aren't new. For years, supply chain professionals have used AI tools such as machine learning and algorithms to assist with data analytics, demand forecasting and other types of decision-making. The appeal of generative AI lies in taking the insights provided by traditional AI applications and making them more accessible, searchable, easier to comprehend and useful for everyone.

However, many existing generative AI models have limitations that make them challenging to implement, namely the lack of visibility into how models generate their responses. OpenAI, the company behind ChatGPT, has received criticism for its secrecy surrounding the data that its product is trained on.

From a compliance perspective, this lack of visibility is a major problem for businesses throughout the supply chain. For example, to obtain certain ISO certifications, organizations must document their processes and meet a long list of requirements. Relying too heavily on generative tools could lead to instances in which they can't explain how they reached a certain conclusion, jeopardizing their chances of securing the certification. Additionally, ChatGPT lacks insight into events after 2021, which limits its effectiveness in accounting for socioeconomic or environmental changes that can disrupt the current supply chain.

In short: Generative AI as it currently exists needs to be better refined and defined before it's used in decision-making.

Not all generative AI tools are built the same. Many, such as Google's Bard or IBM's watsonx, can access much more current information online as opposed to years-old data. And startups continue to emerge that champion an open-source approach to generative AI, which would alleviate many of the visibility concerns of supply chain leaders. Ultimately, there is a path forward for generative AI in the supply chain, and you need to pay attention to its potential

even if current iterations present challenges.

To lay the foundation for adopting emerging AI models, we need to understand their limitations. As with any new technology, it's easy to fall victim to hype and rush into implementation without adequate planning. But by remaining patient, organizations can take full advantage of what generative AI has to offer.

Following are three main practice areas that lend themselves to safe generative AI experimentation.

Administrative tasks. Everyone who works within the supply chain knows that there is no shortage of logistical tasks to be completed and documents to be created. These administrative tasks are a low-risk way to experiment with generative AI tools. For example, you can use them to create customs documents like packing lists and commercial invoices. By training the generative AI system on a large dataset of customs documents, it will learn the structure and recurring patterns and improve quality over time.

You can also extend this practice across the organization for human resources, customer service and even basic coding tasks. The less glamorous aspects of supply chain management can take up far too much time, which is why using generative AI to accelerate these tasks can free you to focus on more valuable work.

Demand forecasting. While traditional AI tools can assist with demand forecasting, adding generative AI into the mix allows for more flexibility and accessibility. Generative AI can incorporate data from a wider range of data sources than traditional AI. And with several generative AI tools emerging that can capture real-time data, your organization will no longer have to rely solely on historical data to make predictions.

When using generative AI for demand forecasting, know that specificity is key. Make sure your prompts include all relevant information about where the tool should pull data from and the output you're looking for. Specificity will reduce the likelihood of receiving vague or misleading answers, especially if you can verify the outcome by comparing it with a previous forecast that used traditional AI tools.

Supply chain optimization. Generative AI with access to the appropriate supply chain data can help optimize the supply chain from the point of origin, when your organization is vetting a supplier, you're considering working with. By pulling data from financial reports, news headlines and other resources, you can compile a comprehensive profile of the supplier and gauge whether it's the right fit for your organization.

When it comes to route planning and logistics, generative AI algorithms are starting to be trained to incorporate real-time information such as traffic data and weather forecasts. This would enable your organization to optimize delivery routes, anticipate potential disruptions, and ensure efficient transportation of goods throughout the supply chain network.

Most supply chain businesses are starting to embrace AI as a valuable addition to their operations. Generative AI is simply the next step, one that opens new possibilities for real-time data analytics and streamlined administrative tasks. Although it will take a lot of experimentation to confidently integrate generative AI alongside your other AI offerings, the result is increased efficiency and new insights that drive better decision-making.