EXECUTIVE INSIGHTS

Improving retail supply chains with Generative AI

Breakthrough innovation with advanced technologies is creating new performance improvement and profit opportunities throughout retail supply chains. SymphonyAI Retail CPG is at the forefront of this movement, leveraging deep domain expertise to set the standard for Generative AI excellence.

Executive Summary

Retail supply chains are entering a new era in which the powerful capabilities of Generative AI (Gen AI) are being leveraged in exciting ways to improve virtually every aspect of retail operations. This is especially true in the supply chain where the extensive capture of data creates an abundance of opportunities ideally suited to advanced Gen AI solutions. By automating tasks, generating insights, prescribing actions, and enhancing decision-making, Gen AI will drive significant efficiencies, cost savings, and competitive advantages.

To realize these benefits, it is important to understand the fundamentals of Gen AI, develop the proper strategy and align with strategic partners who are committed to ongoing innovation and possess the deep domain expertise to properly train and leverage large language models on which high-performing Gen AI applications, such as copilots operate. Such an approach is key to helping retailers operate and continuously improve supply chains that serve the needs of customers in the most cost-effective manner possible.

Understanding Gen AI and its supply chain applications

A properly functioning and efficient supply chain is the foundation on which every successful retail enterprise is built. While this concept is well understood, it is challenging to execute due to the countless variables that impact supply chain performance and thus a retailer's ability to execute its customer-facing value proposition.

Supply chain performance has improved over the years thanks to technological innovation that allowed for more accurate demand forecasts, warehouse replenishment and increased inventory visibility.

However, Gen AI takes things to a new level and represents a major opportunity to dramatically improve supply chain performance. Gen AI simplifies supply chain management in ways that weren't previously possible thanks to its ability to generate novel, high-quality content by learning patterns from large volumes of data and synthesizing information in a way that drives insights and actions for business users. Unlike traditional AI, which relies on rules-based programming, Gen AI provides three key benefits, including:

- Simplified insights discovery: It is easier for users to explore and interrogate data and discover insights faster. This is true regardless of technological proficiency because there is no need to be a power business intelligence user when information can be accessed via natural language.
- Improved predictive capabilities: It can be complemented by the addition of predictive models to perform "what if" kind of analyses which are essential in supply chain scenario planning.
- Gen AI can be trained to think like different personas in the supply chain using models and prompt engineering that incorporates retail domain expertise to ensure relevant, accurate responses.

These capabilities are seen having a transformational impact in key supply chain areas, including:

- Demand forecasting and planning
- Distribution center and store replenishment and allocation
- Store operations
- Supply chain data analytics

Realizing the benefits of Gen AI

Gen AI has diverse applications across the supply chain. It can automate manual workflows, uncover hidden insights, improve planning and forecasting, and assist supplier relationship management. Collective improvement in these areas represents a significant opportunity to drive revenue growth and profit improvement. However, to fully capitalize on Gen AI, companies need to build the right data pipelines, integrations, and internal capabilities ahead of time. They must also be aware of risks around data quality, hallucinations, and inaccuracies.

Key to all of this is the development of the large language model (LLM) on which the Gen AI is trained. Retailers will see various approaches in the market, so it is important to understand and appreciate the differences in how models are developed and the impact this has on performance.

Gen AI for the supply chain will rely on a foundation of a leading LLM such as GPT from OpenAI, LLaMA from Meta or LaMDA from Google. However, it is what is built on this powerful base that is the key point of difference for retailers and why SymphonyAI Retail CPG is leading the way to build the industry's first retail specific LLM to power supply chain use cases.

The key to success with such an undertaking is to apply deep domain expertise in retail and CPG supply chains. This is an area where SymphonyAI Retail CPG shines given our legacy of building highly effective predictive models. This ensures appropriate guardrails are built into the LLM to ensure there is alignment with a retailers' corporate goals.

Deep domain expertise is also incredibly valuable when it comes to prompt engineering, essentially creating queries that are specific to retail and personas within the supply chain. This is key because asking the right questions is how retailers can unlock the value of Gen AI for their supply chains.

The optimal approach to LLM creation and copilot development

The approach taken by SymphonyAI Retail CPG is to supplement LLMs with well-established predictive models grounded in deep domain knowledge. We conceive of these models as "skills" similar to plug-ins developed and issued by LLM providers such as Open AI. These skills power solution specific copilots and allow users to leverage the power of the underlying LLM to deliver answers to domain specific business questions. Without these models retailers would not only not get good answers but be subject to the potential of "hallucinations" from the LLM. As a result, when copilots are created, they are better able to integrate into supply chain workflows to drive speed of decision-making and productivity that far exceeds LLMs rushed into service for the limited purpose of performing basic data queries.

This is a basic example, but it speaks to a key point of differentiation when it comes to the optimal approach to LLM development which must begin from a base of existing predictive capabilities to maximize value creation potential of copilots.

How Gen AI copilots improve supply chain performance

Copilots are tremendously beneficial throughout the supply chain because they function as productivity enhancing virtual assistants that make it easier for humans to interact with technology and accelerate the discovery of business insights. For example, SymphonyAI Retail CPG is implementing copilots focused on improving demand forecasting through data synthesis, analysis, and recommendations as well as automation of workflows.

This is a noteworthy supply chain innovation because when advanced forecasting algorithms are used to analyze thousands of internal and external data points it means demand can be predicted faster and with greater accuracy. This improved forecasting ensures the right inventory levels are maintained across increasingly complex global networks. However, this process creates an enormous amount of data and is a prime example of how Gen AI makes supply chain professionals more powerful and effective. Copilots can surface information quickly that would have taken users significant effort to uncover and then provide direction on the most appropriate and high-impact actions that drive value from those data and analytics. Ultimately, supply chain planning processes become faster and more efficient with information discovery, report and document generation, and workflow automation powered by Gen AI.

Additionally, we are using Gen AI to help users get the most out of our solutions by leveraging our knowledgebase to manage the complexity of our solutions and their functionality. In addition, we are implementing Gen AI on top of our collaborative supply chain data platform, giving users the ability to perform analysis and surface predictive and prescriptive guidance across the inter-enterprise supply chain – from retailer to CPG.

Another benefit is the ability to rapidly analyze impacts of different scenarios and strategies. By leveraging the copilot to test simulations, planners can understand how demand volatility, supply constraints, regulatory changes, and other factors could affect the supply chain. Overall, with Gen AI minimizing uncertainty and variability in inputs, supply chain plans become more robust and resilient.

As these supply chain use cases are refined, SymphonyAI Retail CPG will focus on enhancing store operations and execution on the sales floor through a persona-based approach to task automation and efficient identification and correction of store level challenges to sales, margin, and labor.

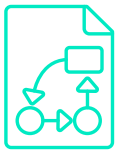
Top takeaways to advance Gen AI efforts

To lead in the era of Gen AI requires significant business domain and technology expertise. It takes time to curate the massive datasets needed to train Gen AI, build the right solution infrastructure, and tailor the technology to solve relevant use cases. With a strategic approach, SymphonyAI Retail CPG will deliver Gen AI capabilities to our customers that will transform supply chain planning, replenishment, and supplier management to create a powerful source of enduring competitive advantage.

As is always the case with innovation, retailers that lag in adoption of these solutions risk putting themselves at a competitive disadvantage to early adopters. The future success of retailers and the performance of their supply chains is rapidly becoming dependent on the use of Gen AI. Accordingly, key action items for retailers include:

Investigate and invest in integrating Gen AI into core supply chain systems and processes.

Focus on key uses cases and the potential of copilots in areas with abundant opportunities for process improvement such as planning, forecasting, and operational analytics.



Proactively address risk related to data quality and the potential for algorithmic bias.

Foster a culture of digital dexterity and continuous learning to keep pace with Gen AI developments.

Utilize strategic partner solutions, such as those from SymphonyAI Retail CPG, rooted in deep domain expertise that are at the forefront of innovation.

Ensure C-suite leaders and board members fully appreciate the transformational impact Gen AI will have on supply chains and the financial performance of the business.

The SymphonyAI supply chain commitment

SymphonyAI Retail CPG is excited about the acceleration of Gen AI capabilities and committed to leading in the implementation and creation of value throughout the supply chain and other areas of analytics that power the success of retailers. The steady development and release of Gen AI co-pilots across our solutions in 2023 and 2024 is only the start. We intend to lead the way in research and development and a level of investment that supports best-of-breed Gen AI solution development that empowers retailers to create significant, measurable value throughout their operations.

This is a clear and distinct value proposition that SymphonyAI Retail CPG is uniquely qualified to deliver thanks to a focus on end-to-end solutions that solve real business challenges for retailers.

About SymphonyAI Retail | CPG

SymphonyAI Retail | CPG is building the leading enterprise AI company for digital transformation across the most important and resilient growth verticals, including life sciences, retail, consumer packaged goods, financial services, manufacturing, and media. In each of these verticals, SymphonyAI businesses have many of the leading enterprises as clients. SymphonyAI is backed by a $1 billion commitment from Dr. Romesh Wadhwani, a successful entrepreneur and philanthropist. Since its founding in 2017, SymphonyAI has grown rapidly to a combined revenue run rate of more than $300 million and over 2,200 talented leaders, data scientists, and other professionals.