



Generative AI delivers *better* supply chain management for global conglomerate

Capgemini and Google Cloud deliver a Gen AI-powered chatbot and a forecast engine to maximize efficiency and margins

Modern business must manage their supply chains knowing that even small changes in demand or inventory levels can lead to significant costs. Recognizing this, a global conglomerate with many lines of business wanted to improve the efficiency of its supply chain and warehouses.

Client: Global conglomerate

Region: Global

Industry: Manufacturing

Client Challenge: Unexpected consumer demand and market changes meant a multi-national conglomerate experienced losses due to demand mismanagement in warehouses.

Solution: The company worked with Capgemini to develop a generative AI-based chatbot and forecast engine built on Google Cloud. The data-driven solution provided better insights into managing the supply chain.

Benefits:

- Clear overview of forecasted product demand to proactively manage stock and efficiency gains
- More value obtained from inventory stock in the warehouse
- More insights into product purchases for a more efficient supply chain and maximized margins

The challenge involved assessing and optimizing the value of the company's stock in warehouses around the world. The goal is to avoid losses by shipping the highest value items from its warehouses first, but unexpected changes in demand often led to mismatched stock levels.

If stock levels increased, the result was the value of inventory went down because of the surplus. A discount offer on a selling price may incentivize market demand but it lowers the earnings on every item sold. The company wanted to improve detection and forecast changes to market demand to mitigate impacts to its inventory value.

Enabling an optimal supply chain

Maintaining optimal stock value in the longer term requires demand forecasting, warehouse optimization, and cost reduction. The company chose to partner with Capgemini and Google Cloud to implement these capabilities because of their extensive experience with supply chain transformations.

Working with Capgemini and Google Cloud, the company used a data-driven stock quantity-centered approach to better understand the market and consumer demand. It chose a specific isolated market to prototype and test the solution, to create the right template before global deployment. The two elements now working to prevent value loss in the warehouses are:

- A generative AI-based chatbot. Built on Google Vertex AI, the Large Language Model (LLM) agent understands user intent, generates database queries on the fly, and interactively provides answers in text, diagrams, graphics, tables, and figures.

- A forecast engine. This generated sales and demand forecasts based on historical data for future projects. Typically, the projections covered 30, 60, or 90 days or could stretch to a full year. Improved demand forecast reduces the unexpected mismatch of stock and market requirements, so the company can now be proactive in responding to market conditions.

Maximizing margins, lowering costs

With its two-part solution, the conglomerate has the information to more effectively predict customer demand and make supply chain decisions. Analyzing historical demand patterns and market indicators to generate forecasts helps optimize stock, sales management, and supply strategies. In turn, warehouse optimization means getting the most out of inventory levels to prevent stock value loss and improves overall supply chain efficiency while ensuring resources are more effectively allocated and utilized.

Shortening the period between analytical requests and responses gives the company improved real-time insights into the market and a better picture of current demand. This advanced demand forecasting helps the company avoid loss of stock value and determines how to get the most value from its existing inventory levels, all supporting supply chain efficiency. The prototype solution has demonstrated the potential for more efficient warehouse logistics, substantial cost savings by minimizing storage costs, and maximized profit margins.

Powered by Google Cloud, the solution solves inventory and warehouse issues so the company can proactively manage its supply chain more effectively. A proof-of-concept implementation has been effective in one country, and Capgemini will continue to work with the company to roll out the solution to its global supply chain and other warehouses.



About Capgemini

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