



Dynamic Inventory Replenishment for a Top 3 Global Retailer

THE BUSINESS CHALLENGE

One of the world's largest retailers wanted to make real-time replenishment decisions, coordinating its distribution centers and stores to ensure they are always stocked with the products consumers want. With thousands of stores and hundreds of thousands of SKUs, the retailer sells thousands of dollars worth of products every second. At this scale, inefficiencies in the supply chain have an impact measured in the billions of dollars, both in terms of lost revenues and inventory misalignment.

Ensuring stores have the optimal amount of inventory in stock and on shelves in order to maximize revenue is a complex process. Too much inventory can take up valuable storage and shelf space from other products that are in higher demand and waste valuable capital. Alternately, not having in-demand items can frustrate customers and mean the retailer loses the purchase. This is particularly relevant when it comes to perishable goods. Leaving produce outside of refrigeration for just minutes too long due to overstocked inventory can lead to significant spoilage and losses in the millions of

dollars, simply because replenishment operations were not aligned. The retailer wants to be dynamic about how it can adjust to meet constantly changing demand, events, and scenarios like inclement weather and natural disasters.

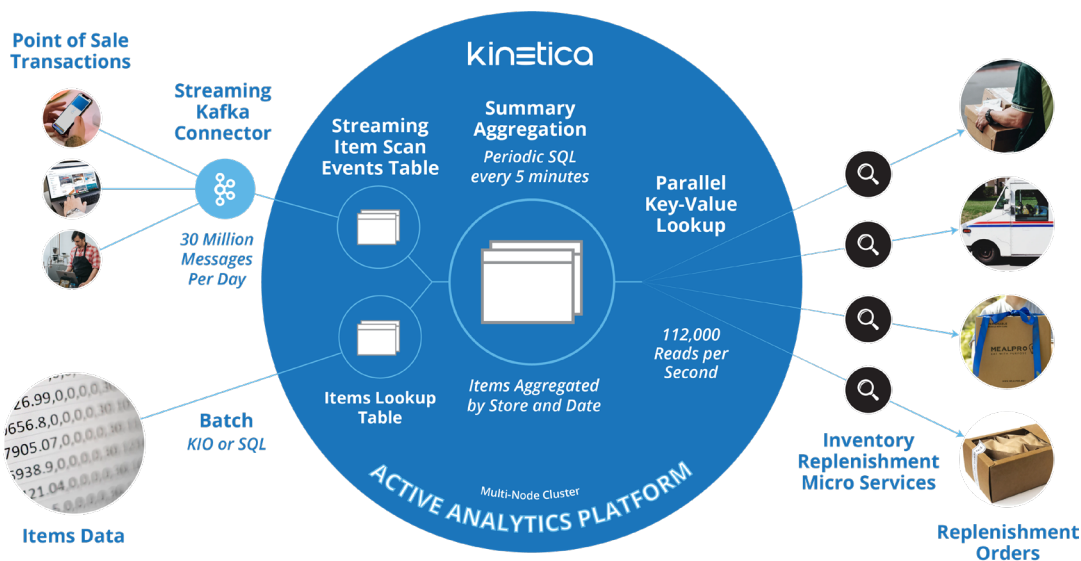
The retailer has trucks leaving distribution centers 24/7, but they were all working on a fixed manifest. The retailer wanted to adjust payloads based on real-time information about supply and demand to optimize inventory and avoid out-of-stock situations.

The retailer's legacy analytics stack lagged hours or days behind the real-time picture due to the speed and scale of the data involved, which prevented them from making decisions based on the most up-to-date information. Its enterprise architecture team tried to address the problem with a variety of different open source technologies, but they couldn't deliver the speed and efficiency required, resulting in hardware sprawl without achieving the capabilities they envisioned.

THE ACTIVE ANALYTICS SOLUTION

Kinetica helps the retailer to maximize profits across 5000+ stores by allowing their managers to place ad-hoc orders and gain visibility of inventory of orders from distribution centers all the way to the stores (through 30 million distributed lookups per day). This is a new capability that Kinetica helped to deliver by integrating, fusing, and conceptualizing high-volume historical and live streaming data feeds and serving on-demand queries. Additionally, the retailer is now able to optimize each store's efficiency by tracking products nearing "end of life" using Kinetica's real-time platform and empowering managers to take action to move inventory, resulting in significant cost reduction and profit maximization.

By reporting sales accurately and immediately for all item and store combinations, Kinetica grants new levels of visibility into inventory and the supply chain, enabling replenishment systems to make agile decisions based on real-time information. Managers across stores and distribution centers can make on-demand decisions to move and order inventory in response to demand. This can help the organization to ensure only optimal quantities of products are on the shelves at any time, to avoid shortages, overstock, spoiled inventory, and other challenges that lead to lost revenue.



Kinetica consolidates the hardware sprawl from previously attempted solutions by powering workloads for streaming analysis, historical analysis, location intelligence, and machine learning on a single, unified platform. The Kinetica-based microservice architecture delivers high concurrency query throughput and provides a REST microservice that will enable the retailer's machine learning experts to deploy various algorithms and build on top of Kinetica as a platform.

With Kinetica, the retailer can quickly pose complex questions on diverse sets of data, easily visualize inventory as it moves through the supply chain, and turn replenishment operations into a dynamic process to react to real-time fluctuations in demand. This helps them to improve customer satisfaction, maximize revenue, and reduce losses due to inefficiencies like overstock and spoilage. Ultimately, Kinetica remains uniquely positioned to underpin the retailer's drive for dynamic, real time inventory replenishment and true "event driven fulfillment" across the supply chain by providing unmatched performance at massive scale.