.MOSIMTEC

future proof your business.

APPAREL DISTRIBUTOR

Order Fulfillment Strategy

DISTRIBUTION

BACKGROUND

A leading apparel distributor sells blank and customized sporting attire to retailers, wholesalers, and individuals. Headquartered in the U.S., the company was formed through the merger of two established apparel brands and operated seven distribution centers (DCs) nationwide. As part of network consolidation, the client planned to transition to a single, state -of-the-art DC with over 70,000 pick locations.

MOSIMTEC partnered with the client to apply simulation during planning of the greenfield DC. The simulation served as a decision-support tool to evaluate operational strategies and resource plans before implementation. Using the model, MOSIMTEC identified over $2.4 million in annual savings while maintaining 98% on-time performance. The simulation model was designed to be reusable, enabling the client to refine slotting and resource strategies as the business grows.

CHALLENGE

As the client prepared to launch a greenfield distribution facility, leadership wanted to understand the most efficient operational strategies to meet demand and service requirements. Since the client sells to both end-customers and retailers, the new facility would need to regularly accommodate both single piece orders and orders for 5,000+ items.

Leadership faced critical decisions on picking, slotting, staffing, and automation. Each option impacted space utilization, labor, and service levels. The challenge was to identify the operational approach that would balance efficiency, cost, and reliability in a fast-moving fulfillment environment.

SOLUTION

MOSIMTEC developed a data-driven AnyLogic simulation to replicate the client's picking operations. The model allowed the client to test operational scenarios before capital purchases were finalized and labor was hired for the new facility. The model included configurable inputs for picking approaches, slotting strategies, AMRs, labor, SKU data, order profiles, schedules, and layout. The animation and Excel interface enabled clear visualization and easy scenario setup.
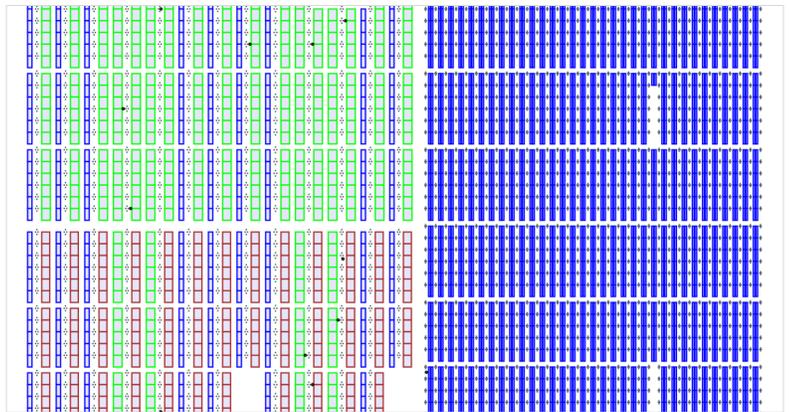
MOSIMTEC's solution included a slotting tool that produced implementable, demand-driven slotting plans. This slotting tool can be used by the client to improve slotting as product offerings evolve.

BENEFITS

The client gained clear insights into cost, efficiency, and service of multiple operational scenarios. Modeling results helped leadership make informed and risk-conscious decisions prior to go-live. The client avoided costly trial-and-error implementation and gained a repeatable, data-backed tool to evaluate future operational decisions.

Key project findings included:

- $1.3 million in annual savings by selecting the best picking and slotting approaches
- 98% on-time shipment assurance under the selected strategy
- Over $650,000 in annual savings by determining ideal AMR resource plan
- At least $450,000 in annual savings from optimized labor sizing and scheduling

MOSIMTEC expertly guides clients – from pharma to farming, from climate change to change management – through simulation modeling so they get the MOST knowledge, the MOST insight, and the MOST intelligent answers to Future Proof their Business.