



A SHOWPIECE OF EFFICIENT ENGINEERING & SMART ENERGY USE

Cost Plus, Inc. operates the retail store chain called World Market, a leading specialty retailer of casual home living and entertainment products, with more than 250 stores in the USA.

As a result of rapid growth and increased capacity demands, Cost Plus was operating multiple distribution centers in Stockton, California. Many SKUs were picked and then shuttled between buildings, a time constraint and cost that continued to rise over the years. Accordingly, Cost Plus formulated a plan to consolidate its West Coast distribution centers under one roof.

Dematic's integrated order fulfillment solution

Dematic engineered and implemented a high performance order fulfillment system including the integration of warehouse control system (WCS) software with Cost Plus WMS. The system configuration optimizes the vertical cube space for picking, conveying, and sorting, minimizing travel distances and energy use.

Dematic's Dynamic Pallet Build software provides streamlined utilization of the distribution center's 25 shipping lanes, improving throughput and support to 153 retail stores in western USA.

Single point system control

The WCS features Dematic System Manager® which provides a single point of entry and a common GUI, including Dematic SortDirector® sort control, with capabilities for enhanced pallet building, central visualization with graphical system monitoring, and a service module with drill-down diagnostics to parts and equipment status. System Manager also provides real-time reports on information relating to system alarms, events and conditions.

It also provides web-enabled, single-point system control, monitoring and diagnostics.



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Steve Knight,
Senior VP Distribution,
Cost Plus World Market



Integrated Sortation System (ISS)

The DC uses an advanced conveyor control system called Integrated Sortation System (ISS). ISS approaches the entire sortation system as a singular unit – pre-merge, merge, induction, sortation, take-away and recirculation – providing optimized system operation from a single user interface.

“The net result is the highest rate of continuous product flow, but at the lowest possible conveyor speeds,” said Dematic’s Paul Condron.

“Rather than running at the same constant speed, the system monitors pick-line volume and ship-line congestion and automatically adjusts the conveyor and sorter speeds up or down to meet required throughput. This method of control provides a smooth continuous flow of product to the dock doors, and is a revolutionary departure from constant speed sortation systems,” he said

Dynamic Pallet Build Software

The Dynamic Pallet Build software module within SortDirector translates wave and carton information received from the Cost Plus WMS, and provides the capability to make sortation decisions on the fly to achieve optimal throughput and enhanced pallet build opportunities at the shipping dock.

Dematic’s Dynamic Pallet Build software has increased the capacity at the Stockton DC by 300%, from 1,800 cartons per hour with the old system to 5,500 cartons per hour.

30% energy saving

Steve Knight, Senior Vice President of Distribution at Cost Plus, explained: “The sortation system ended up being a very green component of the facility.”

By adjusting the speed of the sorter and merge-feed based on throughput demand, Dematic’s ISS reduces energy consumption, as well as wear and tear on the mechanical components.

The building was also designed with high-output fluorescent lighting with motion detectors and ambient light sensors. The DC uses lighting only when it is needed. The lights shut down when there is no activity in an area or when ambient light is sufficient.

“Between the energy efficient lighting and the Integrated Sortation System, we saved 30% on electricity and gas at the new site, versus our previous multi-building configuration,” continued Mr Knight.

Improved stock turnover

The new DC is much more efficient for Cost Plus. “Increased performance and agility, and shortened replenishment cycles have been instrumental in allowing our inventory managers to improve warehouse turns,” explained Mr Knight.

“Considering our ever evolving product line, Dematic’s system has become a critical component of our success and helps position us for whatever challenges the future will bring.”



Together at Cost Plus World Market’s Stockton DC are (from l-r): Carl Gelderman, Director of Engineering, Bill Kennedy, General Manager and Steve Knight, Senior Vice-President Distribution.