TARGET

Reducing Pick Cycle Time In Ship From Regional Distribution Centers

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Target Corporation (NYSE TGT) is an upscale discount retailer business that provides high-quality, on-trend merchandise at attractive prices, generating $75B in revenue through online and in-store sales. Target has a vast Distribution Center network to replenish both stores and Fulfillment Centers (FC), which deliver ecommerce orders straight to guests. The Tauber team focused on SfRDCs for the purpose of this project; SfRDCs are Fulfillment Centers (FC) that are physically connected to Regional Distribution Centers (RDC).

As ecommerce sales rise by greater than 30% annually, Target's FCs are carrying more unique products to meet guest demand. In 2019, the average unique product count is expected to increase by approximately 155% in all SfRDCs. This broader assortment of products with fewer average units/item has led to a 14% increase in pick cycle time for small multi-unit orders. In this analysis, pick cycle time is defined as the time it takes to travel to, find, and place into the cart one item for a small multi-unit order.

Further analysis validated that the most time-consuming activity is the travel time between picking each item. To overcome the increase in cycle time and meet anticipated demand, travel time needs to decrease by 21%.

Currently, single-unit orders are picked separately from small multi-unit orders because single-unit orders can go straight to packing whereas the multi-unit orders have to be sorted to their respective orders after picking.

The proposed solution was to opportunistically add single-unit orders to small multi-unit order tasks, reducing the wasted motion in retrieving the orders in separate tasks. However, pilot testing revealed a much larger problem with the FC's Warehouse Management System (WMS) allocation logic for tasks. The Tauber team recommends further testing and analysis, and strategic changes to how inventory is placed in the warehouse, to ultimately save 3 seconds of travel time; this could lead to an annual savings of $2.5M - $3M across the FC network.