

TARGET CORPORATION

Reducing Distribution Center Cycle Time in Freight Processing

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Target Corporation is an upscale, discount retailer that provides high-quality, on-trend merchandise at attractive prices, generating \$72B in annual revenue. Target has 25 Regional Distribution Centers (RDCs) that support 1,800+ retail stores in the United States. It is pursuing strategic initiatives to improve the guest experience, which includes increasing the number of fulfillment options by leveraging its vast store network and opening small-format stores in urban markets with localized products. As in-store fulfillment options and product offerings increase and space for inventory decreases, Target needs a fast and flexible supply chain to replenish stores from its RDC network.

Receive-to-Put is an Inbound RDC process that spans carton receipt on the inbound docks to putaway in reserve storage locations. The Tauber team was tasked with reducing the Receive-to-Put carton cycle time because it is too long and variable to support Target's strategic initiatives.

The Tauber team employed an 8-Step Problem Solving Framework to structure the 14-week internship. Analyzing historical carton-level data revealed that cartons received on the Manual Dock (as opposed to automated technology docks) contributed 42% of all cartons that did not meet current cycle time goals, representing the largest opportunity for improvement. The team manually collected data to investigate where cartons wait and the root causes why. This revealed that cartons wait on the dock 2x longer than in the aisle. The Tauber team redesigned the Manual Dock staging and pickup process to prioritize older cartons to be picked up and visually manage on-dock carton buildup, reducing the length and variability of wait time on the dock. The team piloted the process in an RDC, then built a simulation to theoretically predict the long-term impact of the revised process.

The pilot test and complementary simulation suggests a 15% reduction in average cycle time and a 13% reduction in the time it takes to process 90% of all cartons (the 90th percentile) for the total Receive-to-Put process. Following the success of an extended pilot test, Target's goal is to implement this new process throughout its RDC network. Stabilizing and reducing the on-dock cycle time paves the way for future improvements in the Receive-to-Put process.