

Sheetz, Inc.

Client Overview

Sheetz, Inc., a nationally recognized leader in the convenience store industry, is based in Altoona, PA and operates around 300 locations in Pennsylvania, Maryland, Virginia, West Virginia, Ohio, and North Carolina. In addition to offering numerous shelf-display items and cooler and freezer stock, Sheetz's stores provide three grades of gasoline, fresh-brewed coffee, and made-to-order subs, salads, and sandwiches.

The Challenge

Sheetz was using two third-party logistics (3PL) firms to coordinate the distribution of products to its stores. Realizing that its activity level would greatly increase in the coming years, Sheetz management wanted to know whether the 3PL system would be the most efficient approach or if it should consider building its own distribution system.

Sheetz needed proof that would justify the transition to self-distribution, and it needed the expertise to design a proper facility.

The Solution

Tompkins Associates conducted a Logistics Strategic Master Plan (LSMP), which included defining the best practices, checking the economic justification, and devising an implementation strategy. The LSMP determined that Sheetz could distribute products to its stores more economically and with improved service levels if it managed its own distribution process. Sheetz would also gain more flexible service scheduling and delivery frequency, improved quality assurance, and better temperature control of its perishable food products through self-distribution.

Tompkins was then asked to design a modern distribution center (DC) to meet both immediate needs and those extending to 2007 and beyond. Tompkins developed the detail plans for the new DC, addressing construction, transportation, systems, material handling, and organizational and operational issues. The new 365,000 square foot DC is focused on handling goods in ambient, cooler, and freezer areas, much like the locations within a typical convenience store.

The design phase included building a simulation model of the proposed DC's picking and shipping processes. The model, created by Tompkins and Automation Associates Inc., was used to validate system throughput capacities, determine locations of potential bottlenecks and ways to eliminate them, determine sensitivity levels of production rates, and understand opening-day staffing and schedule requirements.

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Throughout the facility, Tompkins installed and integrated material handling equipment in a cohesive package that merges Sheetz's distribution operations and interfaces with all the selected systems.

- Unit picking for totes is utilized for less-than-case items from flow rack/shelving and carousels in the ambient area and from full pallet locations in the cooler and freezer areas.
- Picking from carton flow rack/shelving in the ambient zone is performed one tote at a time using RF equipment.
- Unit picking in the cooler and freezer areas allows for batch picking up to eight totes at a time across multiple orders.
- After unit picking from the carousels and the rack/shelving is done, a conveyor sortation system takes the totes to a flow rack put system for staging according to store order.
- Cigarette carton picking is accomplished through a special put system that uses zone methodology and batched orders.
- Totes are pulled from the put system and moved to pallet pairs, which are taken through the full case picking process by double-pallet jacks.
- Reserve for most products is stored in the upper levels of single-deep and double-deep pallet rack and four-deep pushback rack.

Tompkins and Sheetz selected and implemented new application software systems to support the switch to self-distribution. Chosen systems included: Retek's Warehouse Management System; BGI International's inbound freight software; Roadnet's outbound routing software for Sheetz's private delivery fleet; Advanced Food Systems' order-entry management/purchasing/demand-forecasting/financial transaction software; and Mobilecast's onboard truck computer system.

A comprehensive plan created by Tompkins University provided training on all aspects of the implemented systems. Job aides—pocket-sized reference manuals—were created for employees to cover ambient picking, bulk and container replenishment, cooler picking, loading, pick to pallet, putaway, receiving, and store returns.

The Results

Tompkins Associates successfully designed and implemented a state-of-the-art, multi-temperature DC with leading-edge technology that provides a competitive advantage through cost savings for Sheetz. The new DC minimizes congestion between replenishment, putaway, and picking while keeping a seamless product flow throughout the facility.

By implementing Tompkins' recommendations on time and within budget, Sheetz is in direct control of its distribution and supply chain operations and has the flexibility to meet peak and seasonal customer demands.