

Petco strengthens the network



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—Mike Fernstrom,
director of DC operations

GETTY IMAGES/GARY PAYNE

With its new DC, the pet retailer has reduced its handling costs, bolstered its green transportation initiatives, and fortifies its overall distribution network—all while providing room to grow.



The new 506,000 square foot distribution center (DC) in Braselton, Ga.

FEATURE PHOTOS BY DAN WATTS

BY **BOB TREBILCOCK**, CONTRIBUTING EDITOR

With more than 76 million cats, 62 million dogs, and 9 million aquarium owners, Americans love pets.

Over the past 45 years, Petco Animal Supplies, Inc. has built a national brand as the place where pets and their owners go, helping more animals to live long and happy lives. Today, the San Diego-based retailer has a footprint in all 50 states, with more than 1,000 stores and a growing e-commerce business.

To support the company's growth, Petco partnered with TGW Systems to design and implement the materials handling system in its new 506,000 square foot distribution center (DC) in Braselton, Ga. The facility, which went live in June 2008, services 237 stores in 13 states in the Southeastern and Southwestern U.S.

According to Mike Fernstrom, director of DC operations, the new Southeast location, coupled with the capabilities of the new system, has allowed Petco to reduce its handling costs, bolster its green transportation initiatives, and strengthen its overall distribution network—all while providing room to grow.

First, the DC's new system is flexible enough to handle a wide variety of products—everything from accessories that fit easily into a carton and can be automatically conveyed and sorted to non-conveyables like pallets of dog food, animal crates, and furniture. It can also process an estimated 5 million units per month for store replenishment as well as direct-to-consumer orders from a 70,000 square foot area dedicated to piece picking for dot.com fulfillment.

Second, locating the new distribu-

tion center in the Southeast delivered a couple additional strategic logistics benefits. During 2008, the year the facility went live, Petco drivers traveled 900,000 fewer miles, saving 135,000 gallons of diesel, furthering the retailer's "Going Green" initiative.

And by being closer to the markets it serves, the project drove further transportation efficiencies because Petco was now able to convert over-the-road truck routes to southern Florida and Texas to intermodal.

"Not only have we reduced our cost per case, but the cost to operate our overall network has gone down as a direct result of the capacity we added in Braselton," says Fernstrom. "We eliminated materials handling inefficiencies associated with using third party warehousing and we have a better

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cost structure across the network than we did before Braselton.”

ADDING CAPACITY

According to Fernstrom, Petco’s continued growth was the driving factor behind the new distribution center. The retailer currently operates a network of 10 distribution centers. Along with the new Braselton DC, Petco has three other full assortment distribution centers, including Monroe, N.J.; Joliet, Ill.; and a West Coast operation.

The remaining regional facilities are smaller in size, ranging from 50,000 to 90,000 square feet, are located close to the markets they serve, and stock fast-moving items like pet food and litter for quick replenishment.

Prior to building the facility in Braselton, stores in the Southeast and Southwest were serviced by the New Jersey and Illinois facilities. All three full assortment DCs were filling dot.com orders as well. “As our business grew, we ran out of space,” says Fernstrom. “To keep up with growth, we were using public warehousing for our year-round surplus storage and 3PLs for seasonal business.”

That was inefficient and expensive. In 2007, Petco conducted a network study and concluded that it needed a full assortment DC in the Southeast. Beyond getting a footprint in Georgia



Petco installed break pack, or split case, picking modules and picking methodologies, like ring scanning, to build store-ready mixed SKU pallets by stocking zones in a store.

that would optimize the network, Petco had several goals for the new facility.

One was to leverage the investment in materials handling automation and get volume out of the building by moving the growing dot.com business to Georgia. “We were doing direct-to-consumer order fulfillment from all three of our full assortment DCs,” says Fernstrom. “We decided to consolidate that business in the new facility and operate Joliet as a contingency operation in case Braselton has a maintenance issue.”

Another key requirement was to install break pack, or split case, picking modules and picking methodologies to build store-ready mixed SKU pallets configured by stocking zones within the stores they were going to be delivered to. “We did not have pick modules in our other buildings, so the totes had a mix of products that had to be sorted in the store before the product could go on the shelf,” says Fernstrom. “With the new system, we can pack totes and build pallets with products that are specific to a zone or departments in a store. That saves a lot of time on the other end.”

A final objective was to optimize Petco’s transportation network. By being closer to the stores it serves than New Jersey and Illinois, the retailer was able to shave thousands of miles from its delivery routes. The transportation department was even able to save more miles by converting some truck deliveries to rail.

BRINGING INTEGRATION TO THE TABLE

One of the challenges of the new facility was the aggressive timeline for the project. The design process began in October of 2007, the implementation began in April 2008, with the first receipts coming in July and the first deliveries leaving the building in August.

“Once we made the decision to build a facility that would take us into the next generation, we wanted to get the capacity online before the next holiday season,” says Fernstrom. “We were handling product multiple times, either in external buildings or because we had to consolidate our reserve storage on a daily basis just to make room. We had to get this done.”

According to Fernstrom, that’s where TGW Systems played a vital role. Although Petco was responsible for the overall design of the facility, he says its system provider was a strong partner throughout that process. TGW was also responsible for manufacturing the



The new location in Georgia is closer to markets in the Southeast and Southwest, saving 900,000 transportation miles a year.

Warehouse & DC: Advanced Site Selection

conveyor, racking, mezzanines, and sortation equipment and integrating the warehouse control system and picking technologies.

A key component to the overall design was the NBS 30 Turbo narrow belt sorter that can sort 120 cartons per minute with an extremely mixed product size. The sorter is 600 feet long with 18 diverters. With its modular design, the sorter will allow Petco to easily add new divert lanes in the future as business expands.

"The narrow belt sorter gave us sliding shoe capabilities but with a faster implementation time and a much lower cost," says Russell Pace, sales manager for TGW's integrated systems group. With just three 15 horsepower motors required to drive the system, the sorter is also 30 percent more energy efficient than a sliding shoe sorter with comparable throughput.

Another key feature is a cartonization function within the warehouse control system (WCS). The WCS profiles

orders to determine how many cartons will be required to complete each order.

A zone skipping feature allows the facility to route a tote anywhere in the break pack piece picking modules to make sure that the right SKUs are picked to a tote to meet the goal for store-ready totes and pallets. "That functionality was absolutely the right thing to do in order to meet that goal," says Fernstrom.

Finally, Petco took advantage of a variety of picking technologies, all directed by the facility's warehouse management system. Piece picking in the 3-level break pack mezzanine, for instance, is directed by pick-to-light. Associates in the three full-case pick modules use voice technology to work in a hands free/eyes free environment. RF directs some of the picking in the dot.com area.

To keep the system up and running, TGW provides ongoing software maintenance for the conveyor and pick-to-light systems. "Our technicians can dial into the system for 24/7 support," says Pace.



HOW IT WORKS

The Braselton facility brings together a variety of technologies that minimize handling and reduce costs, starting at the receiving dock.

There, Petco receives against a purchase order. Full pallets of a single SKU, like dog food, are ready for putaway once

Petco's Braselton, Ga., DC: System snapshot

THE 506,000 SQUARE FOOT BRASELTON DISTRIBUTION CENTER brought together an innovative design and energy saving automated materials handling equipment from TGW Systems to handle store replenishment in the Southeastern U.S. as well as direct-to-consumer dot.com fulfillment.

The facility manages an estimated 13,000 stock keeping units (SKUs) and handles an estimated 5 million units per month. Features of the system include:

Break pack "piece-pick" module

The break pack system is served by a conveyor system designed to route totes to active pick zones at a rate of 1,500 totes per hour.

24 pick zones

- 8 zones per level
- 3 levels high

12 carton flow bays per pick zone

- 4 shelf levels per bay
- 6 SKUs per shelf level

2 static shelving units per pick zone

- 5 shelf levels per unit
- 6 SKUs per shelf level

Three full case pick modules

In total, the full case pick module area features 1,584 static locations and 1,584 pallet flow locations, for a total of 3,168 full case locations. The system supports throughput of 1,800 cases per hour per module, or a total of 5,400 cases per hour.

- 88 bays per level
- 3 levels high
- 2 pallet positions per bay
- 6 static positions per bay on the floor level only

Shipping Sorter

The induction, scanning, and sortation system supports throughput of up to 120 cartons per minute/7,200 per hour.

- Automated merge of 4 module accumulation lines and a sorter recirculation line
- 16 dedicated shipping lanes
- 1 dot.com sort lane
- 1 exceptions lane

Dot.Com

The 70,000 square foot dot.com area supports Petco's growing direct-to-consumer business and features:

- 8 sort lanes with a put-to-order pack out system
- dunnage and taping area
- parcel scale and manifesting



A high speed conveyor and narrow belt shipping sorter handles 120 cartons per minute with mixed sized products.

a UPC barcode has been scanned and validated. An overseas shipping container, on the other hand, may have product from several dozen POs and may contain hundreds of SKUs. Those products will be sorted and palletized by SKU. The WMS will then create a license plate barcode label that is applied to a pallet and scanned.

Lift truck operators are directed by the WMS to store pallets in single deep pallet rack. The WMS also directs replenishment. Full case modules with two-deep pallet rack are replenished by a reach truck operator, while break pack modules are replenished from a man-board truck. Orders for store replenishment drop from an order management system into the WMS. The system then creates waves of orders to be picked for a group of stores for that day.

In the full case pick zone, an associate receives a stack of labels that are sorted in bin sequence. The associate applies a label to cases as they're picked and then places the cases on the takeaway belt conveyor. After the barcode is automatically read at the sorter induction point, a carton is diverted to a shipping lane. There it will be palletized, stretch-wrapped, and staged for delivery.

In the break pack picking modules, the associate starts the picking process by applying and scanning a label on a tote. The pick-to-light system identifies the items and quantities for each pick in that associate's area. Once the picks have been completed for that tote, it's placed on a takeaway conveyor and routed to the next pick zone. After the final pick,

the tote is closed and conveyed to an induction point for the sorter.

After the label is scanned, the tote is sorted to the right shipping lane, where it will be palletized, stretch-wrapped and staged for delivery.

Non-conveyables are picked by order selectors using pallet jacks with 96-inch forks. Wearing voice headsets, they are directed to a pick location and told by the system how many pallets to pick. They confirm the pick by speaking a check digit into their headset. Pallets are then delivered to the stretch wrapper, where they are wrapped and staged for delivery.

Items for dot.com orders are picked in a break pack module and are then conveyed and sorted to a pack station for direct-to-consumer orders. There, multi-line orders are packed together into a single shipping container. Dunnage is added and the cartons are taped shut for shipment.

Dot.com orders may also include items from the full case area, as well as non-conveyables like pet food, animal cages, and furniture. Those are delivered to the shipping area where they are manifested with the appropriate shipping paper and are shipped out.

FINE TUNING

One year after the system went live the system provider performed a facility assessment to insure that the system was meeting its goals. The result: Petco discovered that some new products weren't within the original design specifications.

Instead of being read by the barcode scanner, they were being diverted as misreads to a quality check station where they were manually audited. TGW installed new photo eyes to pick up the new products. In addition, Petco worked with the provider to reduce the number of pallet sizes it was handling from three to two to drive further efficiencies.

Approaching the two-year anniversary of going live, Fernstrom says the system has been a success. "We have been able to sort totes by the stocking zone in the store from day one," he says. "Since then, we've implemented that same process in our other DCs and are able to do that across the company."

Most important of all, Petco is bringing down its handling costs while providing room to grow. □

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A cartonization function in the warehouse control system profiles orders to determine how many cartons are needed to fill the order.