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# Cross dock fuels



**Lisa Akey, divisional vice president of distribution, Dots; Steve Haskell, vice president and lead implementation manager, SDI**

# growth at Dots



**By banking on a combination of cross-docking and flow-through distribution to rapidly provide its customers with the latest fashions at affordable prices, the retailer has emerged as a force to be reckoned with in a highly competitive retail landscape.**

BY MAIDA NAPOLITANO, CONTRIBUTING EDITOR

**T**here's no wasting time at Dots. This Ohio-based fashion retailer uses a unique sourcing model to quickly interpret the latest fashion trends into everyday-wear apparel for women. And because what's hot today may not be hot tomorrow, the retailer's distribution team needs to immediately dispatch these latest looks from its suppliers to more than 400 stores within a 26-state radius—and do it in a flash.

How do they make this happen? Lisa Akey, Dots' divisional vice president of distribution and lead project manager of the company's new, state-of-the-art, 193,000 square-foot facility in Glenwillow, Ohio, shares her secret: "At the end of the day, we have almost nothing that stays in the building. And the rest that does doesn't stay long."

Once received, 20 percent of Dots' volume is automatically cross-docked to shipping—sometimes in as little as six minutes—via a network of conveyors and conveyor sortation systems.

Within 24 hours, the other 70 percent has been diverted to two high-speed unit sorters that flow-through bulk merchandise to individual stores, while the remaining 10 percent of mostly basic, non-seasonal items, goes into storage for future replenishment.

By banking on a combination of cross-docking and flow-through distribution to rapidly provide its customers with the latest fashions at affordable prices, Dots has emerged as a solid force in a highly competitive retail landscape. Over the next few pages, we'll learn how Akey and the Dots logistics team have put this time-tested distribution method to work to keep the retailer one step ahead in a challenging and fickle market.

## **GROWING PAINS**

Since the late 1980s, Dots has been distributing merchandise to its stores from a manual, more conventional facility, three miles from its current location. Although this older facility afforded the retailer many functional

Photographs by Roger Mastroianni



years, by 2005, much of the equipment was nearing the end of its life, putting limitations on operational growth and efficiency. In fact, it took this previous DC three to four days to get a store order out the door. Vendors communicated via faxes and e-mails, and there was no receiving sorter. All carton-labeling from receiving to shipping was manually applied.

When you boil it down, the company actually had been manually cross docking for years—just nowhere near as fast and as efficient as they're doing it now in the new DC. "Our previous system had no EDI and limited, outdated automation that restricted our throughput speed and capacity," recalls Akey. "There was a lot of double and triple handling just to get orders out the door."

With only one cross dock-capable

door, many cross-dock orders would be unloaded, then staged, then put in a queue before actually getting processed—a clear departure from cross docking's "expedite immediately" philosophy.

To distribute bulk apparel to the individual stores, Dots was using a 10-year-old put-to-light system that they had simply outgrown. "To support the volume demand, we had to go to extended shifts and work a lot of overtime," notes Akey.

The clock was also ticking because the put-to-light system's capacity was limited to 500 stores. In 2005, they were already sitting at 350 stores and growing at a rate of 40 new stores per year. "These outdated systems and their inability to support future store growth is what ultimately pushed us to move

forward with the process of designing a new distribution system," says Akey.

### PLANNING AND EXECUTION

So in March 2006, Akey began the process of selecting a consulting firm that could help Dots design a new distribution system. After three months of extensive interviews, site visits, and reference checks, Dots decided to partner with California-based SDI Industries, a systems integrator and solutions provider that had extensive experience in the fashion retail industry. To aid in the analysis and establish best practices benchmarking, SDI brought in another California-based consultant, Dennis Green from Green & Associates.

For several months, the team collected data; audited current processes





from source, to DC, to store; and analyzed business projections before nailing down the final detailed system design in November 2006. “The process was slow and tedious,” says Akey. “However, it was critical to define every nuance of the system, including all system specifications and software interfaces. Without this level of detail, a successful implementation could not have happened.”

In May 2007, after a lengthy study of the present building and available alternative sites, Dots made the decision to build a completely new office and distribution center in Glenwillow. In February 2008, groundbreaking took place and SDI was selected to install and implement the entire distribution system.

In September 2008, with only the floor and the building shell in place,

SDI began mechanical installation of the new distribution system. “The schedule was aggressive and followed closely behind the actual construction of our new building,” says Akey.

By January 2009, SDI completed the installation of the equipment and immediately started hands-on training. “Because the unit sorters were perhaps the biggest change from the old system, we arranged for Dots to send their people to our other clients’ sites to literally work on *their* unit sorters,” says Steve Haskell, SDI’s vice president and lead implementation manager. From January to April, SDI’s software team was also onsite to train Dots personnel and offer systems support.

Because Dots did not really have a true WMS, “this became a more

involved, all-encompassing warehouse control system (WCS) and software project on our end,” adds Haskell. “The new WCS is totally tailored to match Dots’ systems with almost no changes on their side.” Transition to the new DC was complete by May 2009.

### KEYS TO SUCCESS

According to Akey, installation of the automated equipment and software was only half the battle. The true key to a successful cross dock is the automated exchange of information through EDI between Dots and its many vendors even before the product physically arrives at the receiving door.

Dots’ IT department had the unenviable task of getting its many vendors and suppliers onboard with EDI.



- 1. Workers unload cartons from trailer.**
- 2. Inbound cartons travel to merge.**
- 3. After merge, cross dock cartons enter print-and-apply stations, then are conveyed to shipping lanes.**
- 4. After merge, cartons for store distribution get processed at the unit sorters.**
- 5. At unit sorters, individual pieces travel on trays and get sorted to specific store cartons.**
- 6. When store carton is full, worker closes carton.**
- 7. Worker scans label on store carton then pushes carton to center takeaway conveyor.**
- 8. Store carton travels to shipping lanes.**
- 9. Cross dock and store cartons are diverted to one of eight shipping lanes.**

"The EDI team has now transitioned a significant portion of our vendors to EDI, representing about 50 percent of the units processed with the goal of impacting 80 percent of units this year," reports Akey.

Dots also dedicated a substantial amount of resources on extensive training and building job aids for its internal allocation and merchant teams. "These job aids guide the vendors to identify the best way to pack a purchase order (PO) based on a category and allocation plan," says Akey. "Everything begins with the correct PO. If the PO is not written correctly or if the vendor ASN does not match, everything stops."

Opportunities to build cross-dock cartons are also identified at this point. Akey lists denim, fall sweaters, outerwear, footwear, and other bulky items that tend to quickly fill store cartons as naturals for cross docking.

### HOW THE DOTS SYSTEM WORKS

The new operation is a blend of the most advanced conveyor and mechanical technology with the latest systems in information processing and control software. It is this combination of hardware and software that allows the retailer to achieve its goal of same-day distribution.

A vendor ASN is received either via EDI or e-mail 24 hours in advance of the physical merchandise arriving. Once allocations are received, cartons are unloaded onto one of six receiving conveyors. They

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— Lisa Akey, divisional VP of distribution, Dots

flow easily through the system with either the vendor-applied License Plate Number (LPN) or, in the case of manual ASNs, LPNs that have been printed onsite and have been manually applied.

Cartons then flow quickly to the merge and shipping sorter where they can be diverted to one of 14 possible destinations: eight shipping lanes, one automated print-and-apply lane, two unit sorter induction lanes, one VAS lane, one new store/storage lane, and one no-read lane.

In the old system, Dots had been cross docking more—up to 45 percent of its unit volume. With the new unit sorters in place, however, it became a strategic decision to more precisely flow merchandise to stores based on specific needs up until the point of allocation while still creating an efficient, cost effective outbound carton.

"As we've done more analysis of each store and its sales history, we're replenishing only what that store actually needs," says Akey. "That may sometimes be less than a cross dock carton." As a result, there is now a smaller ratio of units being cross docked, from 45

percent in 2005 down to 20 percent in 2010, and more units (up to 80 percent) being processed through the unit sorter.

### REAPING THE BENEFITS

This shift to automation has predictably increased Dots' capacity by leaps and bounds, allowing the retailer to now easily support up to 700 stores within their current footprint. Volume throughput from the two unit sorters almost triples that of the previous put-to-light system (5,500 vs. 1,900 units/hour). The new shipping sorter now processes up to 80 cartons per minute (cpm), more than three times the old sorter that operated at 25 cpm.

Productivity increased 20 percent versus 2008 statistics with a 30 percent increase planned for 2011. The company also achieved a 20 percent reduction in labor costs. "For the past few years, suppliers have been forced to pick-pack for retailers at supposedly no cost," notes Haskell. "Dots now has the flexibility to call on vendors that can't or won't do it, while keeping control on distribution costs and quality."

With minimal storage requirements and only 70,000 of the 145,000 square feet of DC space in active use, there's substantial room for expansion or special projects. "At some point, the ultimate plan is to position ourselves to go to e-commerce," says Akey. For now the retailer continues to work on supply chain efficiencies to maximize their system.

What's been critical to this project's success? "Choosing the right integrator," adds Akey. "One who is committed to you and who will provide you with great ideas and solutions." Second, she says, is "planning and more planning; training and more training."

Haskell agrees. "When you go automated and you tie the front door to the back door in six minutes, you better know how to run it." □

*Maida Napolitano is a Contributing Editor to Logistics Management*

## Cross docking in the year 2011



Steve Haskell, VP,  
SDI Industries, Inc.

**Q: What technological developments have enabled the adoption of cross docking today?**

**A:** "The mechanics for automated cross docking have always been there. It's just become faster and cheaper. The technological development is more on the IT side than on the mechanical side. Information capabilities are so amazing now that you can communicate with suppliers easily, quickly, and commonly and that allows you to be able to tell them exactly what you want and when you want it."

**Q: What is the key to successful cross docking?**

**A:** "You have to have good relationships with your trading partners. First, you have to be able to tell them how to pack what you want. Second, the partner has to be able to document what they've done and get it to you, so that when you see the product at the door you know what to do with it."