



CASE STUDY

# CHRISTOPHER & BANKS

**I**ntelligrated®

# DC Retrofit Meets Christopher & Banks' Growth Needs for Flexible Supply Chain

## Intelligrated and Cardinal Materials Flow optimize Plymouth, MN facility with no downtime

Christopher & Banks, a retailer of specialty women's apparel with stores in 46 states, has a mission to deliver compelling, quality merchandise assortments to women ages 40 to 65 (Baby Boomers). The company places a high value on providing their "boomer consumer" customers with a positive brand and store experience.

## Fresh and Lean Inventory

While many competitors are relying on steep markdowns to move inventory, Christopher & Banks strives to keep customers coming back with frequent additions of new merchandise on the racks. "Maintaining a high number of inventory turns translates to a constant demand on the company's distribution and fulfillment process," said Mike Tripp, vice president of supply chain and logistics, Christopher & Banks.

To maintain the steady flow of product, the Plymouth, Minnesota-based company implements a disciplined inventory management process across its entire supply chain. The company receives 95% of its merchandise on a just-in-time basis, working closely with its suppliers to produce in-demand fashion items.

Product is shipped to the company's Plymouth, Minnesota-based DC before being distributed to 789 stores in 46 states. Each store receives a shipment every three days of just a few items of each SKU, avoiding static inventory while replenishing in-demand styles.

## Older Facility Presented Efficiency Challenges

The Christopher & Banks 200,000-square-foot DC had been able to support quick fulfillment to its stores through cross-docking of full case prepacks, but the transportation expenses associated with this method were cost prohibitive. Additionally, there was a strong desire to reduce transportation costs by repacking items to increase box weight. The desire to repack a large percentage of merchandise strained the existing capacity and aging equipment. The facility relied on a very old, inflexible conveyor system, which was a source of chronic maintenance and other operational challenges.

Faced with a combination of aging equipment, a paper picking system and an inefficient work flow, the company determined that upgrades were needed to continue to support just-in-time delivery and direct-to-consumer fulfillment operations. Christopher & Banks hired a material handling consulting firm to assist, but the project was put on hold until a new supply chain and logistics manager, Mike Tripp, joined the team. Tripp arrived with the knowledge and experience to create a plan for a more productive, ergonomically



MDR accumulation buffer prior to sort transfer.



sound and energy-efficient solution that met throughput and budget constraints.

Tripp acknowledges the support he received from CEO Lorna Nagler on this project. "Lorna knew that transportation costs were too high and there were inefficient operations in the warehouse. She supported the capital investment for this project because she knew we would come out of this economic downturn in a stronger position with an improved warehouse operation and lower transportation costs. It was her support that allowed us to make this investment to strengthen the company."

The project was put out for competitive bids and the contract was awarded to Intelligrated and Cardinal Materials Flow™, material handling integration partners, in April 2009. The cost-effective proposal, which offered productivity gains at less than half the cost of other proposals, was put on a fast-paced schedule for an August 2009 completion, before fall store deliveries began.



Two level MDR collection conveyors.

## **Semi-Automated Solution Allows Shipping & Picking Processes to Work Independently**

The retrofit of the Christopher & Banks facility is built for a new linear flow with a semi-automated fulfillment process. Merchandise is inspected in receiving areas, quality checked and delivered via forklift to staging areas. Operators use RF-scanning

to upload the information of the new merchandise into the pick-to-light system, where product is placed into ergonomically designed combination shelf and conveyor support assemblies provided by Cardinal Materials Flow. DC workers add items to master cartons as they travel along an Intelligrated gravity conveyor. This semi-automated fulfillment process represents an improvement over the legacy system, eliminating manual lifting and floor clutter and providing a safer, quieter solution that is quicker and more accurate.

Once individual store orders are complete, cartons are pushed onto a central take-away belt conveyor to a two-level Intelligrated motor driven roller (MDR) conveyor collection line. Featuring run-on-demand independent zones and zero-pressure accumulation, this conveyor reduces wear and energy usage, eliminates product jams and allows for the entire length of the conveyor to be filled. This allows the order picking to continue independently of shipping activity. Cartons continue to a central merge and sorter where they are routed to one of three shipping lanes. On each shipping lane, cartons are automatically sealed, then weighed and labeled at a work station and conveyed directly into a trailer at the shipping dock doors.

Other upgrades to the facility include a convenient overhead empty carton conveyor provided by Intelligrated. With the facility producing up to 4 tons of empty corrugate each day, the reworked empty carton line directly routes corrugate into a waiting receptacle outside, which is then sent for recycling.

Christopher & Banks implemented several energy-saving initiatives, including relighting, repainting and reorganizing the warehouse. "This DC has been transformed from a dark, inefficient building into a much more vibrant workplace," said Tripp. "By the end of the project we had in our possession a cleaner and more efficient operation that increased associate safety, productivity and morale, along with an impressive return on investment. The retrofit project ensures that the company can meet both direct-to-store and direct-to-consumer order fulfillment demands now and in the future and, most importantly, drive customer loyalty and satisfaction with on-time, accurate order deliveries."



## Phased Construction Maintains Uptime in Live Operations

Though bringing a new system online immediately before peak season brought pressure, there was the additional challenge of performing the installations while the building was fully operational. It was imperative that upgrades not disrupt current operations in the building, which would continue fulfillment services throughout the installation.

“In order to meet the challenge of retrofitting inside of a live facility, we determined that the new system installation needed to be completed in phases,” said Scott Gillette, sales manager, Intelligrated. “With Tripp’s direction and interaction with the integration team, we designed an implementation plan, complete with weekly meetings, to ensure that we met our goals on-time and on-budget.”

The team implemented the phased installation, starting downstream at the docks and sequentially moving upstream. When each section was finished, from shipping, to collection, to the merge, to the pick lines, old areas were demolished to make room for the new equipment. Intelligrated systematically designed, built and commissioned the three shipping lanes. Fulfillment continued on a temporary collection line until the accumulation line was operational, and the team then began working on the new two-level merge that connected the shipping area back to the warehouse. Once operational, the team established the picking operations with one new put line every four days.

“Given the scope and complexity of working within a live building, the phased construction approach developed by Intelligrated and Cardinal was essential in the success of this project,” said Tripp. “Our stores could not have tolerated any missed shipments, and the unparalleled teamwork ensured that we did not miss even a single order.”

## ROI

In place since 2009, the system achieved an ROI in 10 months. The company increased productivity in the shipping department by 160% and reduced labor requirements. Packing department results included significant labor savings due to productivity gains of 200% resulting from upgrading from a paper-based packing system with inferior conveyors to an automated pack-to-light system with improved ergonomics for associates. Overall, the project meets Christopher & Banks’ facility goals with ergonomic, reliable and energy-efficient equipment that maintains a logistically efficient flow.

“From the beginning of the project, both Intelligrated and Cardinal used their industry experience to create a project plan that was well-defined,” said Tripp. “The success of the installation is indicative of the excellent collaboration that we fostered between customer and suppliers to reach our goals. This was a tremendous project that reduced expenses, improved safety, productivity, quality and service levels to our customers.”



Outbound shipping workstation.

## Significant gains of the new system include:

- Efficient flow – improved turn-time by 50%
- Energy reductions of 25%
- Increased shipping productivity by 160%
- Increased packing productivity by 200%
- Increased accuracy to 99.9%
- Increased units per carton by 200%
- Reduced labor needs by 45%
- Reduced transportation costs by 40%
- Reduced noise and ergonomic concerns – injury free since go-live
- Reduced maintenance requirements



## About Intelligrated

Intelligrated is a leading North American-owned, single-point provider of automated material handling solutions with operations in the U.S., Canada and Mexico. Headquartered in Cincinnati, Intelligrated designs, manufactures and installs complete material handling automation solutions, including conveyor systems, IntelliSort® sortation systems, Alvey® palletizers and robotics, Real Time Solutions® order fulfillment systems, warehouse control software and advanced machine control—all supported by 24x7 Customer Service and Support.

Serving the warehousing, distribution, consumer product manufacturing, postal and parcel markets, Intelligrated collaborates closely with its clients to develop productivity solutions and support their needs throughout the life of their material handling systems.

## Intelligrated Products and Services

- Systems Integration
- Sortation Systems
- Conveyor Systems
- Palletizing Solutions
- Software & Controls
- Order Fulfillment Systems
- 24x7 Technical Support
- Design & Build

## Intelligrated Support

The in-house Customer Service and Support (CSS) program offered by Intelligrated backs all of our products. Services available include:

- IN-24X7® technical support
- Replacement parts logistics
- Field service
- Equipment and system audits
- Upgrades and modifications
- Full service and maintenance contracts
- Preventive maintenance
- Customer training and documentation

CSS is available 24x7 to provide all of the services needed to keep your equipment running at peak efficiency. Whether it's on-site support or troubleshooting via our hotline, Intelligrated has the most comprehensive customer support program in the industry.

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