

LOUD AND CLEAR

Voice picking in the warehouse reduces errors and improves throughput



Handling 12,000 SKUs and shipping 45,000 items every day from eight distribution centres, Corporate Express Canada teams up with Dematic on a paperless picking solution. **Jim McMahon** talks us through the process.

The paperless world is becoming a reality. While many distribution centres are still picking product the old fashioned way with paper, many others are adopting automation to streamline their processes.

One example is Corporate Express Canada, which for many years was picking with paper. The company recently redesigned operations within its Canadian distribution centres, adopting a voice-directed picking system that virtually eliminates paper in the DC and dramatically improves throughput.

The technology chosen by Corporate Express provides voice picking (using technology from Vocollect) and an operational platform that spans the entire picking environment including picking, inventory control and customer-level transactions through the ERP. The system, developed by Dematic, not only put Corporate Express on the forefront of picking technology, it also increased the company's person-hour picking throughput by 300 percent and reduced picking errors throughout its eight Canadian DCs.

Corporate Express, Inc is a wholly-owned subsidiary of Buhrmann, NV, an international business services and distribution group. Buhrmann is a global supplier of office products and graphic systems for the business market. The company sells office and computer supplies, desktop software, imaging and computer graphics supplies, document and print management and office furniture.

In Canada, Corporate Express's eight DCs are in Halifax, Vancouver, Calgary, Winnipeg, Mount Pearl (Newfoundland), Edmonton, Mississauga and Montreal. The biggest DCs are in Montreal and Mississauga, each a fully automated 130,000sqf facility. Combined, the Canadian DCs handle 12,000 SKUs and ship 10,000 orders daily encompassing 45,000 items.

A significant shift

For a company moving \$16 million worth of office supplies every day in Canada, the decision to make the change to paperless was not insignificant, and it had to be executed with minimal interference to operations.

"We were looking at productivity enhancements, capacity growth and standardization of several functions within the operation," says Ed Meyer, vice-president of operations for Corporate Express Canada. "The company has been experiencing very rapid growth in Canada for some time now and our distribution capability is critical to our promise to deliver exactly what the customer orders, and deliver it on-time, complete and correct."

According to Meyer, the company planned two major changes in operations for its DCs. One was to shift seven of the eight facilities from conveyors and sortation over to picking carts (Mississauga continues to use conveyors and sortation equipment). The other was to implement voice picking technology into all the DCs to eliminate paper and make the picking operation more efficient.

"With the pick carts we are able to pick 30 to 40 orders at a time on a cart, then take it right to the loading docking area," Meyer says. "This has allowed

us to improve our flexibility and capacity to deal with orders in the DCs. With 12,000 SKUs this has proved to be an extremely workable system for us."

Practice makes perfect

The company introduced voice picking in 28 US distribution centres with good results, a move which spurred the decision to go the same route in Canada.

"We asked the engineers at Dematic to design a voice picking system, and what they presented was a comprehensive solution centered around their PickDirector capability," Meyer explains.

PickDirector is a Windows and SQL database product that is able to operate voice picking technology, pick-to-light systems, put-to-light systems and RF-based picking solutions all in a single platform.

In the old system the warehouse worker would label a carton and set it off down the conveyor. Paper instructions would indicate a location and quantity for each pick.

The new system takes order information directly from the Corporate Express ERP system and delivers it to the picker. The computer directs the picker to a location, which the picker confirms using a wrist-mounted barcode scanner. The system then tells the picker how many items to pick and he or she verbally confirms the number to the system and scans the code on the carton.

With no paperwork, operators pick with both hands, instead of just one. Tasks such as reading, writing and searching for stock locations are eliminated. Pickers wear a belt-mounted speech recognition device and a headset. The terminal communicates to the host computer via standard RF. Operators simply listen, speak and scan.

PickDirector's order management capabilities include wave processing, intelligent batching to improve productivity and the ability to sort orders by priority, destination, customer and other scenarios. It supports a wide range of picking hardware. It can also integrate with routing and sortation systems to increase efficiency and track containers and their contents.

Adaptable technology

In the Mississauga facility, where Corporate Express is using conveyors and sortation equipment, PickDirector also controls a system called Zone Routing which gives it the capability to control the movement of specific cartons after picking, for special handling like quality assurance and priority routing. The system is linked with the ERP to automatically route an order to a number of different pick stations to be fulfilled before it releases the order to the shipping sorter. This is fully interwoven with the picking system, which gives a higher degree of efficiency in movement and accuracy across the entire operation.

"Traditionally, in zone routing the conveyor control system assumes that if the carton went to the correct zone that it has been picked," says Timothy Post, technology specialist with Dematic. "The carton is thrown back on the conveyor whether the pick was actually done or not and it does not return to the zone. This can result in an incomplete order. The system at Corporate Express is different—the conveyor will send that carton into the zone again, and it will keep sending it to the zone until the conveyor system gets the message that all of the picks have been done correctly. This is a unique application which is built into the system, resulting in a much



Pickers scan items using their wrist-mounted scanners and confirm the picks to the computer through their headset.

higher level of accuracy in order fulfillment.

“The system also has the ability to do on-the-fly processing,” Post continues. “If an order has an exception—for example a short pick—it gets processed to an exception location. Traditional systems will not necessarily have that on a short pick. Normally, an order would have to go through an audit or it would have to be manually handled. The Corporate Express system automatically introduces a divert command to re-direct it based on the position of the carton.”

Corporate Express’s paperless picking system prevents misreads and mistakes in data entry, virtually eliminating picking errors, as well as expensive and time-consuming quality control procedures.

The switchover from paper to pick-to-voice for each DC was done over the period of just one weekend. On a Friday that DC would be picking on paper, then on the following Monday it would be on a voice system. The entire project started in June 2006 and was complete by December.

Training workers is relatively simple: each user of the system has to acclimatize the computer to their own voice—a process which takes about 20 minutes. New hires require only about two hours of training before they can be allowed to work unsupervised.

The increased productivity and better understanding of individual workers’ performance has allowed the company to change the way it compensates workers, moving from a group-based bonus system to individual incentives. Side benefits also include a quieter work environment, with the elimination of noisy conveyors, and a gain of about five to 10 percent in floorspace in each facility.

“The increases in productivity with the new system have knocked the ball out of the park compared to what we had before,” Meyer says. “With the paper picking we were doing 55 to 60 items an hour. Within two to three days of implementation, we had pickers already averaging about 70 items an hour, and some pickers were already doing 150 items an hour, which is almost three times faster than with paper. Our goal was to get pickers up to 170 to 200 items hourly.

“Throughput—taking into consideration all employees in the warehouse—is up from the mid-20s lines-per-hour to the low-30s range. That represents a 50 percent increase in overall production.”

The company’s return on investment for the project was a little over a year, and it believes that the ultimate return will be higher than expected. According to Steve Banker, an analyst with ARC Advisory Group, the voice technology being employed by Corporate Express Canada has one of the highest returns of any warehousing technology he’s investigated.

That’s a message that DC operators should hear, loud and clear.

MM&D