

Wireless in the warehouse

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DCs are going wireless because of increased speed and efficiency, greater pick accuracy and access to real-time inventory data

Keeping the hands of the pick team free to pick — and not having to deal with paper — is one reason some companies are moving to voice-driven communication within their warehouses and distribution centers (DCs). Workers tend to be happier to have their hands free and not have to read orders. Management appreciates the often dramatic increases in productivity and pick accuracy.

Warren Engard, director of distribution operations at the recently opened Mid-Atlantic Distribution Center (MADC) for *Dunkin' Donuts* (www.dunkindonuts.com), explains that voice recognition technology is a definite plus for his pickers because they have to handle 50-pound bags of flour and shortening, as well as large pails of icing. "A hands-free interface is just perfect for us," he notes.

The MADC is one of four DCs that service the Dunkin' Brands retail chain franchisees, which includes Dunkin' Donuts, *Baskin-Robbins* and *Togo's*. The MADC, which serves eight states from its location, has dry, refrigerated and cooler compartments in its building and distributes everything from pens and paper clips and uniforms through all needed baking ingredients and a great deal of the baking equipment.

Growing some 10-14% in volume each year and being asked by Dunkin' Brands to handle distribution for the other components of the company helped provide impetus for MADC's recent move to a new building built around distribution requirements. The old building occupied 125,000 square feet, had 22 dock doors, ran more than 60 routes a day, and had total manual paper-based picks. The new facility occupies 300,000 square foot, is designed for cross-dock operations, has 134 doors with 70 on the shipping side, and features both a warehouse-management system (WMS) and voice-directed picking.

"We have dedicated receiving and shipping docks to separate the functions," explains Engard. The cross-docking theme is prevalent in the aisles, as all the putaway and replenishment is done behind the pick aisles in their own dedicated aisle. "Product flows through on two-deep flow rails to the pickers, so there is no forklift traffic by the pickers and no pickers in the forklift traffic aisles."

Engard realized that undertaking three major changes at the same time — moving to a new building, installing a WMS and transitioning to voice-directed picking — could have been a disaster. To minimize potential problems, MADC deployed voice technology, provided by *Voxware Inc.* (www.voxware.com), without a WMS in the old building. "That way our pickers were able to get used to the technology before we moved."

With accuracy improvements realized by using voice technology, MADC has no need to check any of its pallets. Engard says there has been a 20% gain in productivity in the dry warehouse, with about a 30% gain in productivity in the freezer. "We deployed the technology in stages — first the dry, then the cooler and then into the freezer," he explains. "If we could do it all over again, I would start with the freezer first because that's where the biggest gains were. But I have seven freezer selectors versus 40 dry selectors, so I went after the dry area first."

Another benefit is that training new workers for productivity and accuracy has been cut from eight weeks to four.

The MADC has increased voice-directed utilization by adding loading functions. Previously, loading was handled with radio frequency scanners. Trucks were loaded, then forklifts had to be stopped to read the scanner, then buttons needed to be pushed to interface with the WMS, and then operations could continue. "Now," says Engard, "the operator can continue to operate the truck while voicing in locations and putaway prompts. Hands-free has just as much value to a forklift operator as it does for a picker."

Although *Burriss Logistics'* (www.burrisslogistics.com) services are primarily refrigerated, the third-party logistics (3PL) provider does have facilities where it can adapt to some dry. But its niche is in the frozen and refrigerated food areas, explains Ed Krupka, president of Burriss Information Technology. "Our customers span the supply chain," he says. "We service manufacturers and retail customers for whom we store raw ingredients, then transport them to their production facilities and return the same trucks back with finished goods, at which point we'll run distribution out to their DCs for their customers."

Of the company's 14 facilities, located along the East Coast, the newer ones have deeper docks for cross-dock operations. Generally its DCs are high-touch, case pick operations with voice technology from *Vocollect* (www.vocollect.com) part of the solution, depending on the type of distribution program being run and specific customer requirements. Burriss uses an integrated solution that combines speech recognition software and wireless, wearable computer.

"We have voice operating in three different locations," Krupka explains, "and plan to move that into a couple more facilities in the next year or two. The kinds of pick methods we've used have been everything from a paper pick ticket to case labels. We've written our own WMS and believe we're far more responsive to customer needs that way because we can control our own functionality."

With voice technology installed Burriss was able to improve productivity between 5% and 10% by the end of the first week. Although extremely important, increased productivity is extremely important, a more important statistic for Burriss is pick accuracy.

"Although we had very high pick accuracy in our first voice installation facility, within four weeks we drove that to 99.88%." Krupka states. "When you start talking about higher valued product and a big increase in accuracy, as well as maintaining or improving productivity, the ROI ended up being 10 months or less. While we haven't baselined every facility, we've realized some of the same benefits across the board."

Krupka is looking forward to the day when an operator arrives at the warehouse, and no matter what task needs to be done — operating a high lift, doing case picks, receiving, cross-docking or cycle counting — it can be handled through one wireless voice unit.

Man can't live by food alone, and voice certainly isn't the only wireless technology in use at warehouses. *World Wide Technology* (www.wwt.com), a supply chain systems integrator, manages all of its remote satellite facilities via a wireless platform from *Symbol Technologies Inc.* (www.symbol.com). World Wide makes use of Symbol's hand-held devices, as well.

Most of World Wide's remote facilities are geared toward specific programs. So, as it enters into a program with a customer or an original equipment manufacturer (OEM), that project is the justification for World Wide being in that region and occupying a facility.

Running off a wireless platform enables World Wide to maintain and manage its hand-held devices from a central location, explains Craig Frederking, the company's director of IT operations. "It provides a lot of benefits for us — from support, to roll out, to deployment, to upgrade."

It's necessary for World Wide to hold some product on shelves, taking an inventory position in some cases. Depending on customer needs, moving product may be a simple cross-dock move.

The wireless hand-helds are used by World Wide for scanning product as it comes in and goes out, as well as within the four walls as it moves throughout the DC.

The wireless solution is tied into enterprise applications from *Oracle Inc.* (www.oracle.com), Frederking notes. Product is received and scanned in, and that information is updated to the inventory system. "Then as we make movements throughout the facility, the product will move from locator to locator, and that data is captured as well. At the time of shipment, the product is picked off the shelf and shipped. All of that is consolidated back to our home office, where we maintain our entire application suite," he explains.

In the short time that World Wide has implemented the wireless and hand-held technology, the feedback has been positive from all facilities. "The ability to capture a scan is one of the biggest benefits our workers have seen to date," says Frederking. "In the past, it was necessary to repeatedly try to scan a bar code before it would actually be accepted. Today operators almost have to be careful about where they scan, since the hand-helds pick up a lot quicker now."

When warehouse associates encounter problems on the floor, thanks to their use of hand-held devices, Frederking's team back at headquarters can remotely control the devices, walk through the issue, and hopefully resolve it without the associates having to do anything on their own. The wireless solution, he emphasizes, allows World Wide to centrally manage all of its devices, support those devices and deploy those devices.