WHAT'S WORKING IN WMS

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Strategies and tactics for getting the most value from your WMS

Technology

Flexible WCS offers cost-effective alternative to WMS-directed tasks

As technologies mature, the lines between different applications sometimes blur, as is the case with warehouse control system (WCS) and WMS applications. For instance, both Coach Leather Accessories and Arbonne International found that a WCS was a cost-effective option to take on some traditional WMS functionality.

Tom Verzi Jr., vice president of sales and marketing for QC Software, and Jerry List, vice president of the software vendor, spoke with *What's Working in WMS* about the evolving nature of WCS technology and how Coach and Arbonne are taking advantage of those capabilities.

QC Software was founded 10 years ago to manage conveyor systems, a traditional functionality of the WCS. Over time, the vendor enhanced the conveyor controls by adding additional functionality, much of it typically thought to be under the WMS umbrella, such as inventory management, order fulfillment, and shipping.

Verzi explains the vendor's approach to distinguishing the software: "We talk about warehouse management systems and WCS as people. If you consider the warehouse management system as a manager, basically he oversees the things like forecasting, demand planning, and inventory. WCS is more like the supervisor. He's making sure that the orders are getting out the door, picking is happening efficiently, and that all of those things that are integral to the operation are taken care of. In the old days, the WMS did that."

A flexible WCS with greater capabilities gives users another option to fill in the functionality gaps.

In the meantime, the WMS has acquired new functionality itself, and has even started taking on some of the enterprise resource planning functions. Many systems now manage slotting, labor tracking, and historical reporting. WMSs are focused more than ever on management and long-term planning, and List says that the WMS trend is away from direct interaction with the floor and delegating that to the WCS.

WCS manages cartonization and pick routing

So how does a new breed of WCS enhance DC operations? Arbonne International, a provider of botanical-based skin products, is using QC's software to handle cartonization and pick routing.

When the company added a new, more

sophisticated zone picking area to the DC, it implemented QC's software to plan picking using specific cartonization rules and efficiently routing each container to the proper picking zone. To make the process more efficient, the software employs zone skipping rules. It also communicates with pick-to-light technology for quick and efficient picking throughout the process.

The system worked out so well in the new pick area, that Arbonne expanded it to the rest of the DC. Previously, the company had two pick-and-pass pick areas (P1 and P2). These were very manual. When it implemented the new area (P3) and saw the benefits of the cartonization function, it decided to do everything through the WCS. That allowed the DC to have one conduit of information between the WMS and the floor rather than having the WMS talk to the pick-to-light system in P1 and P2, and the WCS in P3. The new approach streamlines communication and creates continuity between systems.

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Here's how it works: When the WCS receives orders from the WMS, it strips out the ship-alone line items and the full-case picks, says Verzi. It prints those labels separately. The single line orders are batch picked, then separated into single orders at pack out. Then the system splits the remaining orders into boxes, taking into consideration dimension and weight requirements.

If an order has to be broken out into multiple cartons, the system intelligently allocates which orders go in which carton. "We try to optimize the allocation of which line items go in which cartons to reduce the routing requirements and get them into the right zones, so we are not duplicating cartons in the pick zone for the same order," he says. By minimizing where the carton has to go, the DC is able to maximize picking productivity.

As a supervisory system, it keeps in touch real-time with the activity levels, so if there's a SKU that's replicated in multiple pick locations, it can decide which pick location to go to based on the current activity to balance the work. Similarly, in packing, when selecting lanes, it distributes product to balance the work.

To keep both systems current, the WCS updates the WMS on all pick completes and ship completes.

In fact, improving shipping was the third phase of the project. Arbonne had used independent shipping work stations, such as UPS WorldShip and Internet portals. But as volume grew, it was no longer able to keep up with demand. So the company streamlined its shipping process with the QC software. Now, Arbonne utilizes a single shipping system to process all orders for multiple carriers. Consolidating all of this activity under one system and server also allows it to easily identify duplicate shipments.

Changes easier in WCS

Another company that has taken advantage of the growing functionality of the WCS is Coach Leather Accessories. As part of a major IT upgrade in which it replaced its former WMS with Manhattan Associates' PkMS, Coach needed a way to efficiently route outbound orders to various pick locations via the existing conveyor system. It found that the WCS's flexibility allowed it to direct those tasks more cost-effectively than the WMS.

To direct those cartons with the WMS would have taken some significant modifications to the system, which is both time-consuming and expensive. For instance, adding additional scanners, new conveyor routes, and diverts require modifications in many WMSs. But QC's system was able to do that basically through internal configuration changes instead of recoding the software — a much more cost-effective solution.

While most of the changes were internal to the WCS, such as configuring the locations and identifying the logical routing to get to each location, some additional coding was necessary. This additional coding was primarily related to new functions such as enhancements to receiving. For instance, when receiving cartons, a new message was created that PkMS sends to the WCS to give

instructions on how to palletize and putaway the inbound product.

In addition to the upfront cost savings, this allowed the WMS to stay more generic, so that as the DC installed future WMS upgrades, it didn't have to reimplement the mod each time.

At Coach, the WMS is still making the major decisions. The WCS is not doing any planning, just routing cartons to various pick locations based on what the WMS tells it to do.

Pivotal to the project was the WCS's ability to understand the order fulfillment process. Some WCSs are still no more than sortation and conveyor control systems. They only understand what's happening at each specific location. They don't have the ability to see the entire warehouse and route the carton logically.

Verzi says this logic is necessary because if you have multiple pick zones for product, a value-added services area, then packing, and finally shipping, the system needs to understand the specific sequences that have to happen. For instance, the QC system is able to determine what level of the process the order is in. If the order passes by the value-add area but it isn't complete yet, it shouldn't be sent to value-add.

The WCS is involved with the shipping process at Coach as well. Prior to shipping, the cartons pass over an in-line scale for order verification. Cartons that are not within the specified weight tolerance are directed by the WCS to a reject line for manual inspection. To support the manifest requirements of the PkMS, the WCS transmits divert confirmation messages in real-time back to the WMS.

Consider the WMS as the facility manager, with the WCS as the supervisor, handling the day-to-day operations.

Coach has specific doors for UPS, FedEx, and less-than-truckload, for example, and the WCS confirms which cases are going in which lanes and provides the carton ID and weight that PkMS uses to create an electronic manifest.

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