

Can a New Warehouse Control System Breathe Life into a Tired DC?

More Intelligent Real-Time Control, Integration with Picking Systems Can Increase Productivity and Throughput in Many DCs; Pick Module “Zone Skipping”

SCDigest Editorial Staff

Warehouse Control Systems (WCS) are of course critical for the effective operation of an automated distribution center, but nevertheless are often not well understood by users of those systems.

A WCS is an execution program that sits between the lower level machine controls and PLCs of different automated hardware systems (conveyors, sorters, etc.) and the Warehouse Management System (WMS) being used in the facility. (See [The Role of the Warehouse Control System in the DC.](#))

There is a growing interest in WCS in recent years for a number of reasons, including the fact that the functionality of Warehouse Control Systems has in many cases increased dramatically – in some cases encroaching on capabilities that were within the domain of the WMS. That evolution, in turn, means that some distribution centers may find that upgrading to a new WCS may be the fastest and most economical path to increasing DC productivity and throughput.

Rich Hite, president of [QC Software](#), a provider of Warehouse Control System solutions in Cincinnati, says that this is a path an increasing number of companies are taking.

“They may have an older or homegrown WMS that isn’t getting the job done any more, but they don’t want to go through the risk and expense of a new WMS search and implementation,” Hite told SCDigest. “A new WCS can often deliver a nice productivity gain at a fraction of that cost.”

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For example, a WCS can put more dynamic intelligence into a split case “pick and pass” system that will drive more efficiency and increase the number of cartons picked per hour. On a sorter, a WCS may be able to more dynamically assign cartons to divert lanes based on what is happening at the pallet build stations at the end of each lane to keep the cartons flowing more smoothly.

Of course, to make this work, the WCS needs to be integrated with the material handling controls/PLCs on one side, and the WMS on the other. However, this type of integration is usually a relatively modest software coding effort. In some cases, certain

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changes in the configuration of the existing WMS may also be needed, if the WCS takes on more real-time control of the picking process. But generally, it's just a matter of the new WCS matching the existing messaging into and out of the WMS.

Legacy Warehouse Control System Often Way out of Date

Unless a company has installed a new system and WCS in the past few years, it is likely that the WCS they have in place now is a very custom piece of software that lacks the functionality and configurability of today's more advanced systems.

In many of those older systems, the staff who originally understood how the system worked and was coded have often moved on, leading at times to a situation where no one really well understands the system. In those cases, a company sometimes struggles just to maintain the system and keep it running – so that making major improvements that could enhance productivity and throughput is simply not in the cards.

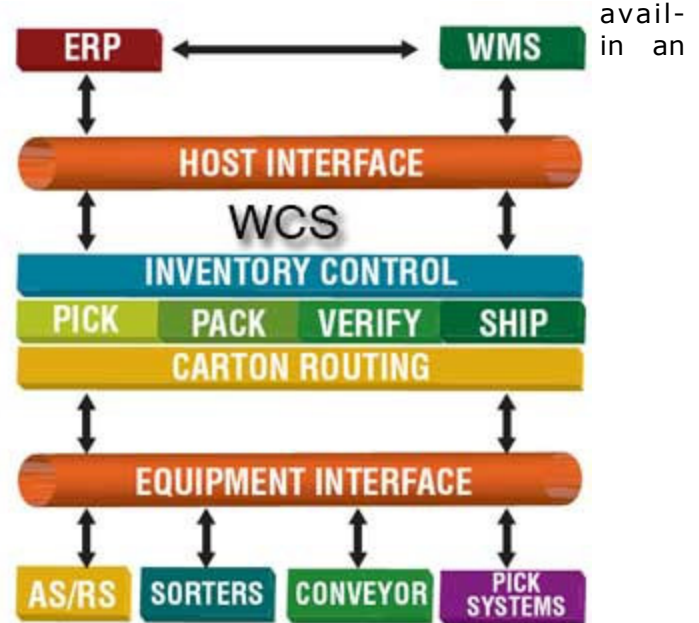
The potential for improvement from a new WCS comes in several primary areas.

In some cases, Hite says, efficiency improvements can be achieved simply as a result of faster system performance.

"We still see situations where cartons are pausing for a couple of seconds at a scanner waiting for the system to respond with the routing," he says.

More often, efficiencies are gained through the increased smarts and functionality that are

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vanced WCS today, as discussed above. In some cases, a new WCS may achieve the same results that a company would gain by adding a number of additional sort lanes.

In other cases, Hite says, a company may consider modest improvements to the physical system combined with a new WCS to gain even more benefits.

"For example, some of our clients have added a new divert into a pick module to allow "zone skipping" in a pick and pass system," he said.

Regardless of the ultimate approach, for automated DCs looking to make gains in productivity and throughput, considering a new WCS should certainly be on the list of options a company considers.