



DISTRIBUTION CENTER MANAGEMENT

STRATEGIES & TACTICS FOR DISTRIBUTION CENTER & WAREHOUSE EXCELLENCE

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WMS helps improve performance for 3PL

Conestoga Cold Storage, a third-party logistics (3PL) provider headquartered in Mississauga, Ontario, stays sharp by keeping its warehouse management system (WMS) on the cutting edge. "We are continually upgrading our system," explains Greg Laurin, general manager of Conestoga. "We want to stay updated, and stay with the newest software for better support, to be able to use the new features that are added to the WMS," he says. "We don't want to stagnate or get stuck with an older version that's difficult to support."

Conestoga, which has more than 10 million cubic feet of frozen and refrigerated space serving the food industry, designed and wrote its own WMS in 1980 and has continually upgraded and modified it over the years. That homegrown system served the 3PL well for some 15 years. "We wanted to add RF [radio frequency] and use the Internet to handle online orders and customer information," Laurin says. "We felt the best way to do that was to buy a WMS and continue on an upgrade path."

Conestoga implemented Provia's ViaWare WMS in 1996. The system was upgraded in 1998. Since then, Conestoga has updated the system with several small releases. Just last month, the company completed its most recent

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Supply chain execution technology that reaches beyond the walls of the warehouse

Knowing the ins and outs of execution systems that operate within the four walls of the warehouse is no longer enough. Today's manager needs to understand what technology options are available upstream and downstream from their facility. And that's not such an easy task.

"The technology market has become so confusing nowadays," observes Marc Wulfraat, partner with Kom International, a supply chain consulting firm headquartered in Montreal. "Everybody in the logistics software space has re-oriented their marketing message so that it's difficult for the average distribution executive to stay on top of the latest developments. Truth is, there's still a lot of hype vs. reality," he says.

DCM asked Wulfraat to zero in on some of the major supply chain technology applications that reach beyond the four walls of the warehouse.

Seeing across the supply chain

"Inventory visibility, particularly real-time visibility, has been made available within the four walls of the warehouse because of WMS technology," notes Wulfraat. Today, the challenge is to move this information beyond the

distribution center. "Customers are the driving force for gaining inventory visibility beyond the four walls," he says. The enabling technology is the Internet, which has made it possible to extract and make logistics information available over a universally understood user interface.

Third-party logistics providers have long felt the push from clients to provide real-time visibility of logistics information beyond the four walls. The quest for such visibility has rapidly expanded to all types of companies seeking competitive advantage, Wulfraat says. For example, Dell Computer's order status tracking capability enables consumers to follow the status of their order hour by hour to track when it has been fabricated and shipped as well as where it is within the delivery cycle.

Gaining real-time inventory information within the four walls of the distribution center typically requires radio frequency, bar-coding or voice-recognition technologies. The challenge is to carry that real-time information beyond the warehouse to the rest of the company and/or trading partners. "For example, many companies have a world class warehouse management system but don't necessarily enjoy real-time inventory information beyond

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the WMS," says Wulfraat. Even though the firm's warehouse operations may be operating in real time, "the enterprise system[s] may be limited with older technologies, so that WMS information is getting batched over to the corporate side."

A number of WMS vendors are touting their ability to extract and share real-time data from WMS/TMS (transportation management systems) software applications using Web-enabled technologies. But those applications may represent only part of the holistic solution that a company needs in terms of information-sharing requirements.

Wulfraat notes,

"What goes on in the warehouse is only a small subset of the overall information that may be required." For example, information on a firm's invoices, shipment status, accounts receivable, sales history and production schedules are not found in a WMS application. This is where visibility applications enter into the equation.

Supply chain visibility applications enable the enterprise to extract data from multiple platforms and applications and share that up and down the supply chain. These tools will be helpful for companies that have numerous distribution points or operating subsidiaries, giving them the ability to consolidate information from disparate systems into a common visibility dashboard, Wulfraat says.

"For example," he adds, "a manufacturer or distributor may operate 10 subsidiaries with 100 plants and/or warehouses across the U.S., and have no global real-time visibility of inventory information throughout the network. Supply chain visibility

software enables the data to be extracted and made available via the Web within and beyond the organization." A visibility tool enables the enterprise to share logistics and other value-added information with trading partners up and down the supply chain.

"Think of supply chain visibility tools as a layer residing on top of every computer system across an organization, so that any individual within the organization can view whatever information is appropriate to them," Wulfraat says. "Visibility tools don't necessarily create information; they consolidate it into a

Visibility tools don't create information; they consolidate it, then pass it on.

central point and pass it on."

System integration effort is required to have successful information visibility across the supply chain, the consultant points out. Gaining visibility across and beyond the enterprise "is typically a project that involves a high amount of interfacing, and that's the part that people don't always understand." As you consider the different supply chain visibility solutions available today, "keep in mind that there really is no one company that provides the soup-to-nuts out-of-the-box solution that allows you to plug into the back-end and start pushing logistics information out to the Web."

Managing the yard

A yard management system (YMS) manages tasks in the yard that are similar to what a WMS does inside the four walls of the distribution center. "A YMS tracks all yard traffic and prioritizes work for execution," Wulfraat explains. For example, it can identify which inbound trailers should

be unloaded first depending upon the contents.

These systems are usually interfaced into the firm's enterprise and logistics applications, Wulfraat says. "If you're trying to prioritize the unloading of inbound shipments, you need to know the priority of inventory on the inbound orders. That information may or may not necessarily be coming from the WMS."

YMS functionality is beginning to expand beyond its current execution capability, Wulfraat says, evolving into more of a planning and execution application. "Companies want to do more than just execute what's in the yard," he says. "If I operate a private fleet and I have a truck moving toward my facility with an expected arrival within the next eight hours, I'd like to be able to preplan what I'll do next with the truck before it enters the yard."

Yard management systems are available from perhaps seven systems vendors, many of whom also offer warehouse management Systems, according to Wulfraat. "Some of the WMS vendors have purchased systems or partnered as opposed to self-developing them," he says.

Yard management systems are typically used by companies that have a minimum of 100 trailers in their fleet, Wulfraat says. "Below that, the cost of the software is more difficult to justify," he says, "though some companies are beginning to value this technology on the basis of increased security," YMS for the most part is still in its infancy. "These systems are not widely implemented, so if you're in the market for a YMS, check out the solution-provider's track record with successful installs," he advises.

Managing transportation

Wulfraat identifies four major categories of transportation management systems, including:

-Dynamic routing systems. These systems are typically used by companies with private fleet assets and multiple delivery stops per load, such as a food service company that delivers to restaurants and hotels, performing complex routing while accommodating delivery window constraints.

Dynamic routing systems require a tight integration between the order management system and the WMS, Wulfraat says. Since these systems have been around since the

mid-80s, they are very mature. There are perhaps five or six established systems available, with the most advanced ones using digitized road networks as the underlying database that form the basis for the routing.

-TMS systems oriented toward TL/LTL optimization. Truckload and less-than-truckload optimization software has been available since the 1990s, Wulfraat says. Many of the vendors that introduced independent systems have merged with or been bought out by other companies.

A number of new Web-based "freight shopping" tools have recently been spawned as a result of the advent of the Internet, Wulfraat says. However, the jury's still out on whether shippers will shop for freight over the Web and to what extent. "Transportation is very much a relationship business that involves trust," he says. How many companies are willing to shift from long-term relationships with carriers to open bidding on the Web is yet to be seen.

-Small package carrier systems. These systems optimize the shipment

of small packages through carriers such as UPS, USPS and Federal Express. Most carriers provide a free solution to shippers with minimal volumes. "If you use a free system, then you're willing to give your business to the carrier and hopefully negotiate the best rate you can with them." For many companies that want to optimize shipments by freight shopping across multiple carriers for each shipment, multiple small package freight shopping systems are available and are relatively inexpensive.

-International shipping systems. These systems are useful for companies

with a significant amount of import/export activity over borders. They have shipment tracking capability and specialized functionality that manages country-specific customs compliance, freight claims payment, insurance, and so forth.

While it may be useful to bring several of these four categories of transportation management software together, such a system does not exist, Wulfraat says. The different types of transportation systems available are a reflection of historical market demands. The fact that no one company has taken a leadership position in all aspects of transportation may be because the demand for an all-encompassing solution is not big enough, according to Wulfraat.

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An SCE suite may look very integrated on the surface, but not be that way in reality.