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Warehouse Management Excellence: Process and Technology Best Practices

Operating expenses are a main concern on the minds of today's supply chain managers, pushing them to improve their warehouse operations by increasing agility, visibility, and labor efficiency. Our July research on warehouse automation found that 52% of respondents planned to upgrade or enhance their existing WMS, while 23% planned to implement a new WMS. Focusing now on these warehousing systems, what will separate Best-in-Class warehouses from their peers—beyond simple adoption of available technologies—will be their ability to harness a greater degree of functionality from existing applications, and to use that functionality to improve visibility into internal processes and collaboration with partners outside the four walls of the warehouse.

Context / Business Issue / Opportunity in the Market

From homegrown applications to ERP modules and best-of-breed point solutions to components of supply chain suites, Warehouse Management System (WMS) options are plentiful. In Aberdeen's recent benchmark, *The Supply Chain Executive's Agenda 2009: Weathering the Recession*, 49% of respondents reported having a current WMS implementation, with an additional 14% planning to implement one within the next 12 months. While today's solution landscape provides tremendous depth and breadth of functionality to help improve warehouse operations, successful execution requires effective data sharing and integration both within the four walls of the warehouse as well as with outside trading partners. Connecting with partners, gaining visibility over inventory, and increasing efficiency in the warehouse are all hallmarks of a Best-in-Class operation.

Key benefits to end users include the opportunities to:

- Reduce warehouse labor costs
- Increase inventory accuracy
- Decrease order turn-around times
- Improve ability to manage events (exception handling)

Aberdeen's Hypothesis

Our hypothesis is that the predominant pressure is a need for companies to reduce their warehouses' operating expenses. In order to achieve this goal, companies will look both to increase efficiency within the four walls of the warehouse and to improve collaboration with outside parties to allow for better planning of physical locations and labor assignments.

Research Preview

A Research Preview provides an advanced look at an upcoming study and the research hypothesis which will be explored based on prior research

How to Participate in the Study

If your company is:

- ✓ A retailer, manufacturer, or distributor
- ✓ A provider of third-party warehousing
- ✓ A WMS, SCM, or ERP software provider
- ✓ A technology supplier of complementary hardware or software technologies

[Contact us now to get involved in this study!](#)

Table 1: The Best-in-Class PACE Framework

Pressures	Actions	Capabilities	Enablers
<ul style="list-style-type: none"> ▪ Need to decrease operating expenses 	<ul style="list-style-type: none"> ▪ Adopt more efficient order fulfillment processes (picking, replenishment, etc.) ▪ Collaborate with suppliers to better predict fluctuations in supply 	<ul style="list-style-type: none"> ▪ Centralized direction of warehouse processes ▪ Ability to determine optimal inventory location based on velocity – slotting ▪ Real-time visibility of in-transit and at-rest inventory location ▪ Advanced picking processes (by batch, zone, wave, etc.) ▪ Ability to assign picking and put-away tasks to workers dynamically (interleaving) 	<ul style="list-style-type: none"> ▪ Warehouse Management Systems (WMS) ▪ Labor Management Systems ▪ Task Management ▪ Yard Management ▪ Dock Management ▪ Slotting Software ▪ Mobile devices (handheld and vehicle mounted) ▪ RF Scanners ▪ RFID Labels and Readers

Source: Aberdeen Group, October 2009

The performance metrics which will be used to determine Best-in-Class companies include:

- Inventory accuracy
- On-time shipment
- On-time and accurate delivery

Case in Point: Belkin International

At Belkin International’s Midwest distribution center, the scope of operations is impressive. The consumer electronics distributor runs an 800,000 square foot facility, primarily serving retail outlets throughout the US, Canada, and Latin America. Running two shifts for outbound orders and a third for replenishment, the facility processes upwards of 40,000 outbound cartons per day. The DC utilizes a WMS linked to a shoe sortation system for outbound order consolidation, and makes heavy use of RF and inventory activity tracking. In addition to standard inbound and outbound operations, Belkin’s facility also handles returns, light assembly and packaging processes.

Like many of its peers, Belkin is facing pressure to reduce customer order turn-around times. This effort must be balanced, however, against a need to support sales without increasing staffing or space. To further compound these challenges, Belkin also faces proliferation of SKUs – calling for an approach that can process an expanding item base more quickly, utilizing only the existing space and labor pool.

Recent changes have addressed both the software and hardware sides of the warehouse, according to Layth Hussain, General Manager at Belkin. “In terms of hardware, most changes revolve around the upgrade of the RF devices used on the floor. As most of this ties to [product] end-of-life validation, the results were pretty straightforward: reduced repair costs.”

On the software side, the focus has been on maximizing previously-overlooked capabilities of the WMS system to allow for the removal of human steps. Hussain says, “A prime example is the removal of a scan step to associate carton UCC128 labels to a pallet ID label, instead allowing for the system’s double cubing technology to front-end load the pallet build. Minor tweaks to label indicators and a re-train to the floor completed the process.”

As a result of these efforts, Belkin has achieved a 10% headcount reduction to date, while maintaining pallet accuracy and allowing for easier customization of pallet builds to meet customer specifications. As volume spikes, Hussain expects these results to continue, eventually obtaining their overall reduction goal of 24%.

Moving forward, Belkin is looking for further avenues to improve warehouse operations. They have already begun replacing older hand-held devices with newer, higher-frequency models that will allow them to implement wireless label printers for certain parts of their operations. For new projects, one potential option is pick-to-light (or other broken case picking) processes, though this accounts for only a small portion over the overall volume. Another area of interest concerns “deeper activity tracking in certain departments. Some functionality exists, but fear of slowing flow has been a roadblock to further investigation,” says Hussain.

Other areas of interest include further investigation of slotting, more dynamic use of locations, and potential implementation of basic data gathering technologies. “Lower operational costs are always the initial drivers, [and] they have to be quality neutral or offer an improvement.” The current economic climate is weighing on these efforts, however. “In all cases, no ROI, no go. I am saving my battles for capital on replacing or overhauling current infrastructure – at least until things change on the business front,” concluded Hussain.

Objectives

Our research will test the hypothesis that to combat rising operating expenses, companies are blending a combination of strategic actions and new technologies to:

- Increase efficiency in picking, put-away and replenishment
- Improve worker performance through training opportunities
- Centralize the direction of warehouse processes
- Determine optimal inventory locations
- Measure and report performance to continually highlight potential areas for improvement

Solution Snapshot

Solution providers in this space have offerings ranging from stand-alone Warehouse Management Systems to WM components of larger software packages such as ERP systems or broad-based SCM suites. Within this landscape, there are also providers of discrete point solutions that tie into underlying WMS/SCM/ERP implementation to provide specific functionality, as well as providers of complementary hardware solutions that offer enhanced capabilities such as streamlined data input, task direction, and labor monitoring.

Examples of related providers include: Accellos, Aldata, Deposco, HighJump Software, Infor, Knighted, Manhattan Associates, RedPrairie, SmartTurn, Swisslog and Zethcon.

A full list of related solution providers, accompanied by a comparison of the functionality of their offerings, will be accessible on the [Supply Chain Management blog](#).

For more information on this or other research topics, please visit www.aberdeen.com.

Related Research	
Warehouse Operations: Increase Responsiveness through Automation; July 2009 Five Key Steps to Optimizing Warehouse Management; February 2009	Distribution Center Strategies for Today's Economy: Managing Growth Without Adding Labor or Space; November 2008 Warehouse Automation: How to Implement Tomorrow's Order Fulfillment System Today; October 2008
Authors: Scott Pezza, Research Associate, Supply Chain Management (Scott.Pezza@aberdeen.com); Nari Viswanathan, Vice President / Principal Analyst, Supply Chain Management (Nari.Viswanathan@aberdeen.com)	

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