



Distribution Center MANAGEMENT

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Managing people, materials and costs in the warehouse and DC

As RFID improves, the possibilities for DCs expand

By *Howard Coleman*

Imagine this: An RFID portal at your warehouse dock door reads data on RFID tags (“what or who are you?”), applied at the supplier source, and simultaneously, from cartons, pallets, or other types of containers as they are unloaded from the truck.

RFID (radio frequency identification) provides immediate verification (“this is who I am”) of all the contents of the load, plus real-time visibility. Data is transferred to your warehouse management system (WMS). The WMS then reconciles the product received against open purchase orders.

It identifies those items that can be cross-docked (“tagged” against open customer orders) and those that can be staged for stock put-away.

The entire process occurs without human intervention. No clunky barcode scanners, no scanning of the visible barcodes of individual items where warehouse workers must be sure to align them with a scanner. RFID tags or labels do not have to be visible (they can be inside the packaging) to be read by an RFID reader. Multiple items can be read by one reader at the same time.

RFID may be coming to traditional distribution sooner than you think! In fact, it may represent the next wave, the disruptive technology that drives new automated processes in wholesale-distribution and affects all the primary warehouse functions — from put-away and cycle counting to pick/pack/ship/delivery.

If your company already has a data collection system in place and it is integrated into your WMS or enterprise resource planning (ERP), and you seek new efficiencies, then you may be ready for RFID. It’s time to get familiar with the technology and start thinking about the potential impact in your distribution environment.

RFID now has the potential to penetrate new settings, beyond its already proven applications in consumer products distribution, the fashion industry, and retail distribution.

Historically, large supply chain organizations have been the driving force behind RFID adoption. In many cases, RFID deployment has been within a particular company’s internal supply chain, not between them and their external suppliers. Wal-Mart and the U.S. Department of Defense, essentially have issued compliance mandates to their suppliers.

It’s been rather slow, but advancing. Regardless, the RFID technology provides enhanced accuracy and security, making it an ideal platform for warehousing, logistics, and transportation.

The components of RFID

To some degree you are already familiar with RFID. It’s in the keys you use to open your car door, the automatic payment system used in toll booths, and building access systems.

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An RFID system consists of a radio-enabled (radio waves) device (stationary, fixed to a forklift truck or handheld) that communicates with — “interrogates” — an RFID tag or label, just like barcode scanners. The tag itself is an extension of barcode labels, only with more intelligence, as more data can be stored on the tag versus a barcode.

But it’s more than just a tag or a label. The tag (carrying object-identifying data) is an integrated circuit with an antenna. The addition of a RFID reader, some “middleware” (application software) and the appropriate databases possessed by your host, complete the system.

RFID readers communicate with RFID tags through an RF channel to obtain identifying information (some identifier to retrieve other data records). Most common is a reader that itself powers up or “wakes up” what are called passive tags through the RF channel. Other types of tags include “active tags” with their own small batteries and provide the ability for RFID to operate at greater distances.

RFID is sometimes positioned as next generation bar-coding. However, in many environments it is likely to co-exist with barcode for some time.

How would RFID Work?

As products leave your supplier source, goods would receive an RFID tag that contains a unique

electronic code, either individually or by container. Product is placed on a pallet, which also has an RFID tag. As you receive product from your supplier, the tags (“this is what I am”) are read — and arrival confirmed. Information is sent to your ERP/WMS.

Now imagine this: You’re putting product away or picking and an RFID tag is positioned at each storage location (“smart shelves”) for A and B level items. Your RFID reader automatically reads and then “writes” the information to your location tag. This is then validated to your WMS.

Or this: You’re shipping, and you can “write” to an RFID tag or label data about pallet and package contents. The customer order number and line items are verified and added to the pallet or container tag/label at the time of picking or order consolidation. Your computer system tells delivery and inventory systems where and how to route the shipment, and generates manifests.

Or this: Cycle counting requires only that you walk up and down the aisles. Your RFID reader collects the quantity on-hand data of those items being cycle counted. No need to scan barcodes!

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