

Experts discuss how the focus of RFID (radio frequency identification) in retail has shifted over the past several years from item-level tracking to macro-level visibility.

# RFID Revisited By Retail

In 2003, when Wal-Mart first announced it would mandate the use of RFID tags throughout its supply chain, many in the retail industry promoted a vision for RFID that would have the tags track merchandise at the item level from the point of manufacture to the checkout counter. Seven years later, many retailers and consumer goods manufacturers have scaled back their RFID compliance programs. Ironically, though, the number of RFID pilot programs and deployments has been growing within certain retail segments (particularly apparel). However, this time the focus is on macro-level supply chain visibility — tracking goods or even returnable transport containers, often in closed-loop systems. This increase in activity has been driven in part by the availability of more reliable tags and readers at lower price points, as well as more advanced software solutions and a movement toward standards-based RFID integration platforms like Microsoft BizTalk RFID.

The goal is still the same: to provide greater visibility into the supply chain, while reducing shipping errors and out-of-stocks. “Studies show that retailers’ perpetual inventory is accurate only 35% of the time on average,” says Alan Sherman, director of marketing for merchandise visibility at Checkpoint Systems. “This means that they are making decisions about inventory reordering and restocking based on a number that is wrong more often than it is right. This lack of visibility leads to logistics errors, inaccuracies, and operational issues. High error rates in packing, order fulfillment, and inventory management impact sales and profitability. Silent out-of-stocks and shelf replenishment issues further dampen retailers’ top- and bottom-line performance.”

While some retailers have focused on in-store solutions, “others find that their distribution centers represent the best starting point, as RFID can offer them store and con-

sumer shipping accuracy and visibility they may otherwise not have,” says Jim Caudill, senior vice president of marketing and strategy at Xterprise. “RFID can also help a retailer with their multichannel strategies, as it creates a higher level of fidelity and accuracy in the inventory, long a problem area for a multichannel retailer.”

Companies considering RFID in their supply chain operations should focus on their primary pain points and evaluate how the technology can assist them. “The key to implementing RFID for retail is to work backwards from the desired business benefit,” says Larry Arnstein, senior director of business development at Impinj. “If you are seeking supply chain efficiency and asset management, then large RFID tags with long range readability or even durable tags for reusable transport assets with high performance portal readers might be the solution. However, many retailers are discovering that RFID offers the greatest benefits for item-level tags, which must be smaller yet still perform well enough to communicate with nearby handheld readers.”

## Retailers Look Within For RFID Opportunities

A major challenge to early RFID projects was the difficulty of coordinating the tagging process and associated data among multiple suppliers and distribution partners. Some retailers have successfully deployed RFID within their own distribution networks, initiating the RFID process at their distribution centers and tracking the flow of goods to stores. “After a rocky start in open-loop, mandated projects, RFID is increasingly being used for closed-loop applications at either end of the supply chain,” Arnstein says. “At the retail end, perpetual inventory to manage stockouts helps boost both customer service and revenue. At the supply end, many manufacturers employ source tagging at the behest of the retailer.”



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## Resource Article

Retailers, particularly in Europe, have moved forward with RFID. METRO Group, Marks & Spencer, Jakob Jost, and others have deployed the technology to manage the flow of goods from the distribution center to the store and sometimes all the way to the retail floor. In this scenario, RFID can help identify lot packaging and shipping errors in real time, as well as determine inventory quantities and locations throughout the supply chain. The tags can also improve the receiving process at the stores.

Apparel retailers, many of which own their own manufacturing facilities and thus control the entire supply chain, have benefited from these closed-loop systems. RFID has also been used to track supply chain assets such as returnable containers. In this way, companies improve asset management and utilization while gaining inventory visibility. "Retailers are testing the suitability of RFID to track store delivery totes from the DC to the store and back," Caudill says. "Although initially a closed-loops asset management and utilization pay, the end game is clearly to simplify receiving processes and provide greater traceability to the store."

Focusing on closed-loop systems where the retailer manages the entire life cycle of the tag can simplify these deployments. "The opportunity to drive cost out of the asset management process is an internal decision that does not rely on the good will of suppliers and which can lead to an internal benefit that is measurable and not subjective," says David Puleston, vice president of marketing at Tego. "This started in aviation because of the high asset costs in that industry, but assets in the retail supply chain are subject to many of the same issues."

### New RFID Capabilities Expand Benefits

Many of the technical hurdles that previously stymied RFID initiatives have been overcome. Read rates for most manufacturers' tags are in the

99% range, and there is a wide variety of commercially available RFID software on the market. Some RFID tags also have expanded memory capabilities that allow additional information beyond just a serial number, such as expiration dates or maintenance history, to be encoded. They can also incorporate shock or temperature sensors or visual displays for electronic pricing. "Solutions that go beyond identification are better than identification-only solutions when accurate, timely information is needed about an item — and especially its history, or when there is a need to interface with sensors or displays," Puleston says. "The devices are normally recommended for continuous use or reuse, versus lower-cost, disposable, paper-label tags." For systems that rely on item-level tracking, source tagging is a requirement. For apparel companies that have some control over manufacturing, source tagging is a straightforward process. For companies that rely on outside suppliers or distributors, it requires coordination across the supply chain to ensure serial numbers are managed properly. Manufacturers must be able to handle RFID tagging without reducing the speed of their operation.

The increase in retail RFID projects suggests executives are beginning to regard the technology as a business imperative, Arnstein says. "Many things in retail are measurable, but conclusive measurements on sales impact can be elusive," he says. "Some things that can be measured include turnover, inventory accuracy, markdowns, and even out-of-stocks. In cases where comparable store sales have been measured, sometimes the results are so good that executives can have a difficult time believing it." By focusing on well-defined projects with measurable goals, retailers can improve supply chain and inventory management operations in the short term, while preparing for the long-term adoption of RFID within the retail industry. ●

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