

ISSUES

Where Is the Tipping Point?

Widespread adoption of radio frequency identification in the supply chain will come when companies can act on RFID data to improve operations.

The venerable *Wall Street Journal* ran an article in mid-February entitled “Wal-Mart’s Radio-Tracked Inventory Hits Static.” Even though Wal-Mart and several major suppliers quickly set the record straight, telling RFID JOURNAL and others that adoption was on track, the article rattled many in the radio frequency identification industry who feared that it would discourage companies from exploring the benefits of RFID and thus slow adoption.

The *Wall Street Journal* article pointed out, as many other articles have, that Wal-Mart has not installed RFID systems in as many distribution centers as it had originally planned (it will be in seven by April, rather than 12 by the end of January 2007). And it quoted some suppliers who said they are not seeing any benefit. None of this is new, of course, but it does raise the question: When will companies go from tagging a few stock-keeping units to tagging most or all of their pallets and cases shipped to Wal-Mart?

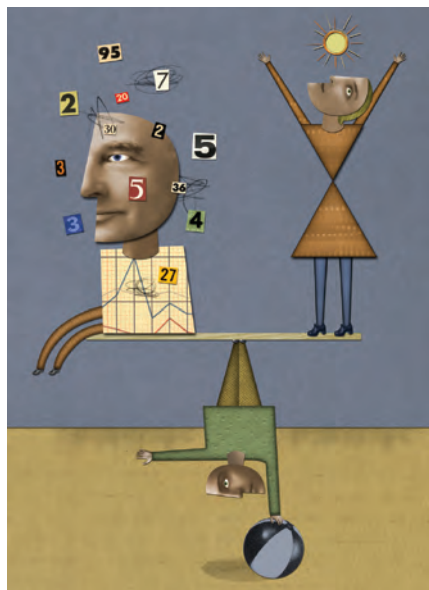
To understand when the tipping point might come, it’s important to look at the challenges suppliers have faced and what they need to do now to use RFID to achieve business benefits. Many of Wal-Mart’s top 100 suppliers, who were required to begin tagging some pallets and cases starting in January 2005, spent much of that year dealing with the limitations imposed by the physics of ultrahigh-frequency RFID. They struggled to figure out how to tag goods in such a way that they could be read consis-

tently or to develop processes that would enable them to read tags as they assembled a pallet, rather than after the pallet was built.

EPCglobal developed a standard for UHF technology, but companies still had difficulty achieving consistently high read rates, because UHF radio waves are absorbed by liquids and bounce off metal. By the time RFID tags based on the second-generation Electronic Product Code hit the market at the end of 2005, many companies had licked the problem. The performance improvement delivered by EPC Gen 2 hardware was so good that few companies say read rates are an issue today.

The next challenge was to find ways to use the RFID data provided by Wal-Mart, Target and others to improve operations. In 2005, there was no software capable of taking raw RFID read data, cleansing it and displaying it in a way that it could be acted on. Early adopters spent much of 2006 either working internally or with software companies, such as OATSystems, T3Ci and TrueDemand, to figure out ways to filter, analyze and use the data to improve supply chain execution. One area many focused on was promotions, because tracking promotional displays could deliver a significant return on investment.

By the end of 2006, several companies, including Kimberly-Clark, Procter & Gamble and Schering-Plough, had software in place to show precisely where promotional items were in the supply chain. That is, using EPCglobal tag and data sharing standards—common formats for sharing information about where and when a tag was read—they could see that promotional items



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were not on the floor at certain stores when they were supposed to be. In pilots, where these companies worked with Wal-Mart to get promotional displays out on time, sales increased (see “Kimberly-Clark Gets an Early Win,” page 16).

Now early adopters have one last challenge to overcome: putting IT systems and business processes in place to use the data in a systematic way. How does Supplier A let Retailer B know that store 123 doesn't have a display out on time or put it out too early? How are associates in store 123 alerted and what processes do they follow to make sure they are responding to requests from a vari-

ety of retailers? How do suppliers act on the data or how do their third-party merchandisers—agents who visit retail stores on a supplier's behalf to make sure product is on the floor—use the data to make sure promotional displays are out on time?

By the end of this year, those issues will likely be resolved and the leading early adopters will start tagging all of their promotional displays being sent to RFID-enabled stores. The same processes can be used for fast-moving consumer goods that are often out of stock, such as batteries, chocolate bars, razor blades and soft drinks. So expect to see more of these items tagged

Finding the Forest Amid the Trees

Many mainstream business journalists seem intent on dismissing radio frequency identification technology because it hasn't transformed the multitrillion-dollar supply chain overnight. They seem oblivious to the fact that RFID is spreading into every corner of the global economy, as reflected by these recent headlines from RFID JOURNAL's Web site.

Berliner Wasserbetriebe Gets RFID Tagging Project Flowing

German utility tracks equipment at 17,000 locations.

Anticipating ROI, Rewe Expands Its RFID Deployment

European food retailer to receive 3,000 tagged pallets per day.

The Eastern U.S.'s Fourth-Busiest Port Embraces RFID

South Carolina State Ports Authority tracks shipping containers.

Uniropo RFID-Enables Inspections for Industrial Slings

The Canadian provider of slings used by cargo-lifting cranes tracks the maintenance and safety-inspection process.

U.S. Military Ramps Up Adoption of Satcom-RFID Kits

The military combines RFID and satellite communications to track and manage supply shipments in the field.

Moscow Metro Tries RFID-Enabled Ticketing

The transit agency looks to improve efficiency and reduce ticket fraud.

Discover Teaming With Motorola on NFC, Mobile-Banking Trial

U.S. consumers use their mobile phones to make payments and more.

Pfizer Prepares for Viagra E-Pedigree Trial

The drugmaker will document RFID-tagged bottles of Viagra as they move across the supply chain.

Florida to Require RFID Tagging for Some Exotic Pets

The state will require owners to implant LF tags in non-native reptiles.

RFID Tidies Up Distribution of Hospital Scrubs

A Norwegian hospital uses RFID to track work garments, saving labor costs while improving inventory accuracy.

Mitsukoshi and Shiseido Test Tagged Cosmetics

The Japanese companies aim to create the “department store of the future.”

Wisconsin Ups RFID-Adoption Incentives for Cattle Growers

To encourage the use of RFID tags for the vast majority of the state's livestock, Wisconsin is covering 50 percent of the tags' cost.

South African Railroad Switches to Passive RFID

The region's largest rail operator will track its fleet of 80,000 freight railcars.

Mexican Bus Company Fights Tire Theft With RFID

The tire-tracking system could also improve tire maintenance.

Greek RFID Pilot Collects Garbage

The city of Aspropyrgos is tracking refuse bins to manage the process.



once companies have the business processes in place to act on the RFID data.

Mass adoption of RFID in the retail consumer packaged goods supply chain will occur only when the cost of implementing systems reaches a point where companies can benefit from tagging slow-moving goods sold off the shelf; demand for these goods is easier to predict and replenishment can be done effectively without RFID. But when both the suppliers and retailers have installed an RFID infrastructure, the only additional cost for tagging slow-moving goods will be the cost of the tag.

When will the tags become inexpensive

enough that it makes sense to tag slow-moving goods? It will depend on innovation by technology providers (faster, cheaper assembly technologies would lower tag costs) and how quickly companies ramp up the tagging of faster-moving goods and promotions (the sooner they start making large volume purchases, the faster prices of tags will fall). But it's clear that the volume of tagged goods in the retail/CPG supply chain will start rising more quickly in the second half of this year and continue to increase steadily because both retailers and suppliers will be achieving hard benefits from tagging fast-moving items and promotional displays. ■

I S S U E S

Easing RFID Deployments

Many prognosticators thought that the adoption of radio frequency identification would happen quickly because Wal-Mart would require suppliers to increasingly tag more items in the retail/consumer packaged goods supply chain, and the U.S. Food and Drug Administration would require pharmaceutical companies to track shipments in the drug supply chain. That hasn't happened, so adoption will need to be driven by sound economics—that is, companies will use RFID where they can get benefits.

To help companies achieve short-term benefits, many vendors have been focused on delivering hardware, software and services that simplify implementations and lower the cost. Hardware vendors have been developing new interrogator form factors, such as mobile readers that can be put on a cart, enabling a clothing retailer or library to use one or two readers to cover an entire store. Forklift interrogators let a company read

pallet tags without having to install a reader and antennas at every dock door. New, wearable readers let workers encode and apply tags when they pick cases.

On the software side, more vendors are enabling companies to deploy systems cost-effectively. Working with Kimberly-Clark, OATSystems devised a simplified version of its software that could run on a laptop in a facility with no Internet access or even electric power. The system allows K-C to encode tags remotely and interrogate them to confirm they were applied to the items (see “Kimberly-Clark Gets an Early Win,” page 16).

Still other companies are introducing managed services, where they install and maintain interrogators and run the network that filters the data. These managed services enable companies, or groups of supply chain partners, to get a complete RFID network installed quickly and without a large up-front capital investment.

By bringing down the up-front costs that end users have to make in RFID systems, vendors hope to jump-start adoption. As more success stories are published, more end-user companies are likely to take advantage of these options. ■



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