

Know What's In Store With RFID

EXECUTIVE SUMMARY

Just as the barcode did a few decades ago and the Internet has in the past ten years, a new technology is poised to change the way retail business is done. Radio frequency identification (RFID) is a fully automated inventory tracking technology that generates significant improvements in accuracy, efficiency and visibility of merchandise management.

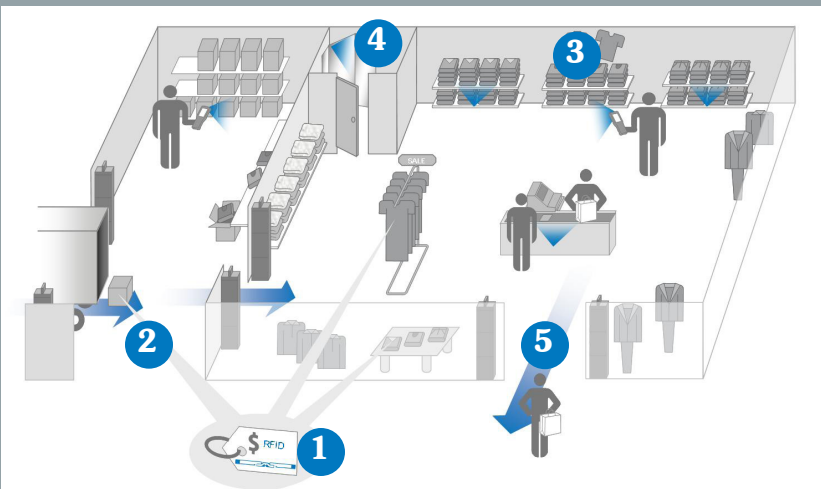
A more effective inventory system may sound like a solution better suited for wholesale and supply chain applications, and certainly, RFID has attracted much attention in those quarters. But the need to know what merchandise is available, where it is and how it moves hardly ends at the warehouse. In fact, the most valuable and exciting benefits of a real-time RFID inventory management system may well be realized within the four walls of the store.

Managing a selling floor requires constant vigilance. New merchandise arrives and must be processed quickly and accurately, since it can't sell from the stock room. As merchandise moves out the door, it must be continuously restocked. Keeping the desired "model stock" assortment available at all times means knowing at any given moment what is already on the floor, what has been moved out of place by browsing customers, what is still in the stock room, and what needs to be re-ordered. Now add the challenges of watching and controlling

"shrinkage." Ironically, the harder a retail staff works at keeping the sales floor properly stocked, the less available they may be to serve customers on the floor when they need help finding an item in a specific size or color.

Item-level RFID tagging is already proving itself as a way to address all these challenges in a broad range of retail formats — in club stores, department stores and specialty stores. But the payoffs of RFID go well beyond reducing out-of-stock situations, labor and shrinkage costs, to include new ways to serve customers and enhance their in-store experience. This paper provides retail professionals with a basic understanding of how RFID works and how it can help improve day-to-day operations and boost the bottom line, highlighting the results that others have already achieved through RFID deployment.





THE BASICS OF RETAIL ITEM-LEVEL RFID

1

In a retail RFID system, each item is tagged with a “smart” price ticket that contains an embedded microchip. The tag is encoded with the product’s unique information, including brand, model, size, color, and serial number, as applicable. RFID tags are read by radio waves using handheld or mobile devices, shelf or tabletop readers, or portal readers installed at doorways.

2

Since radio waves can penetrate corrugated cartons to read all the tags inside, RFID lets retailers validate the contents of a carton without actually opening it. Incoming merchandise can be received automatically into inventory, so merchandise can be quickly shelved in the stock room or separated for immediate stocking on the floor.

3

RFID makes real-time, perpetual inventory control a reality. Smart shelves, with built-in RFID readers, can literally take their own inventory, reducing labor costs and virtually eliminating human error. Portable readers are a good option for retailers who only want periodic inventory snapshots. They can even be used to locate stray merchandise for reshelving.

4

Tagged merchandise comes to life in front of “magic” mirrors or screens. Built-in RFID readers identify precisely which item the customer is holding and deliver SKU-specific product information and branding cues, in both audio and visual format.

5

RFID can help curb shoplifting and internal theft, as it provides instant, detailed records of merchandise movement into and out of the store.

THE CASE FOR RETAIL RFID

RFID-based inventory management systems have attracted a great deal of attention recently, with good reason. RFID provides an accurate, automatic, convenient scan that does not rely on “direct line of sight” to read encoded data. That makes it an ideal solution for tracking goods in motion. RFID systems have been quickly embraced in a wide variety of supply chain applications, and have proven to deliver dramatic improvements in time and labor required to track inventory movement.

But what about its applications in the retail environment? For retailers considering RFID, the business case typically begins by considering these key selling floor challenges:

- Keeping the floor stocked with the desired selection of merchandise or “model stock.” On average, retail stores are out-of-stock on about 8% of their model stock, which translates directly to lost selling opportunities.
- Counting on-hand inventory accurately and economically, and preserving the accuracy of “perpetual inventory” data. Few situations frustrate a customer as much as “The computer says we have it, but ...”
- Processing incoming merchandise efficiently and accurately, and locating it quickly for restocking. Items that reach the sales floor too late must be sold at a discount.
- Curbing shrinkage. Internal theft is estimated to have cost North American retailers \$19.5B in 2006, even more than the \$13.3B attributable to shoplifting.

It quickly becomes clear that an RFID tracking system can directly address all these problems, generating improvements in inventory accuracy, operational efficiency and stock visibility that greatly simplify the work of store associates and management, freeing them to spend more time serving customers and generating sales.

However, the commercial impact of RFID deployment goes well beyond relieving typical pain points of inventory control. Once implemented, an item-level RFID system offers opportunities to streamline operations, enhance customer service and augment sales in ways never before possible. For example:

- **Faster/Smarter Replenishment of Sales Floor:** With RFID, the sales floor can be quickly scanned and pick lists automatically

generated, making it faster and easier to keep the store properly stocked. Store managers can even be instantly alerted when too much “put back” merchandise has accumulated in the fitting rooms, resolving problems before customers ever notice them.

- **Greater Inventory Accuracy:** Retailers who base sales statistics on *total piece count* often grossly underestimate the variance between their POS-driven figures and their actual on-hand position. Some privately concede that their real level of inventory accuracy hovers around 65-75%. By enabling real-time inventory at the SKU level, RFID is enabling retailers to achieve inventory accuracy of 99% or better
- **Greater Location Visibility:** RFID not only tells you what is and is not in stock, it also identifies where a specific item can be found in the store — in the stock room, a fitting room or misplaced on the floor. This means less time spent searching for merchandise, fewer trips to the stock room, and more time to serve customers and generate sales. Associates can even use a handheld’s “find” function to locate merchandise — they just input specifics on a handheld reader and follow the beeps, like a Geiger counter, right to the item.
- **Expedited Receiving:** In some stores, newly arrived stock can sit for days awaiting processing; RFID reading of pre-tagged merchandise can cut that time to minutes. RFID can even be used to flag and locate “door-to-floor” cartons — priority merchandise needed immediately on the sales floor — especially important for time-sensitive goods like new DVD titles, fashion apparel and other seasonal merchandise.
- **Improved Validation of Shipment Integrity:** Many retailers routinely accept merchandise into inventory as a “blind” or “assumed” receipt, trusting the shipment is accurate and complete. A more accurate open box audit would simply be too costly in terms of time and labor. RFID allows retailers to validate 100% of their shipments and instantly uncover discrepancies due to packing error and/or in-transit loss or theft.
- **Fewer Items Sold at Markdown:** A surprising number of items never reach the selling floor until they have already hit their first markdown — after an audit, one

“Retailers are now leveraging RFID for inventory visibility, loss prevention and improved customer experience.”

Aberdeen Group, *RFID in Retail*, March 2008

apparel retailer found nearly 30% of its stock was being marked down directly from the stock room. RFID offers a new level of merchandise visibility and ease of stocking that can recapture these lost revenue opportunities.

- **Reduced Internal Theft:** The ability to count every item in the store daily (or even every few minutes using “smart” shelves) serves to deter dishonest employees who have historically taken advantage of their employers’ lack of real-time visibility. Also, the fact that every item can be tracked into and out of the stock room and the store itself allows the retailer to go back and examine a missing item’s entire journey inside the store, often yielding valuable clues. Falabella observed a 20% reduction in internal shrink in the product lines it tagged.
- **Reduced Shoplifting:** Dishonest customers often use the fitting rooms as a staging area to conceal merchandise. RFID readers at dressing room doorways can easily track how many items a customer brings into and out of the fitting room area. RFID reader-equipped “smart” screens and mirrors in fitting rooms not only provide an interactive customer experience, but also let the customer know that the retailer knows precisely which items he/she has selected, deterring would-be thieves.
- **Interactive Retail:** Shopping becomes more fun and engaging when merchandise comes to life. RFID readers in mirrors and display screens can provide eye-catching product information and cross-selling suggestions about the merchandise already in the customer’s hands, enhancing conversion rates and spend-per-transaction.

RFID IN THE REAL WORLD

RFID clearly has exciting applications in retail store settings, and forward-thinking retailers of all sizes, from large chains such as Dillard's, Wal-Mart and Best Buy to smaller, local boutiques and shops, are already proving the value of enhanced inventory and merchandise visibility in their stores. Here are the experiences of two retailers:

American Apparel

One size/one style model, retail space at premium

This rapidly expanding specialty apparel chain introduced a pilot item-level RFID system in one of their Manhattan area stores in October 2007. The system includes a combination of fixed and mobile RFID readers, and every garment in the store carries a serialized RFID tag.

The results of the pilot program were dramatic. Inventory accuracy, which was about 70-75% before RFID, is now at 99%. Time to count the sales floor has been slashed from 30 man hours to just under four man hours. Better visibility into the location of merchandise in the stock room has allowed the store to reduce its average stock levels by 10,000 pieces (roughly 15%) without compromising in-stock position on the selling floor. American Apparel has also begun testing "magic" mirrors on the selling floor.

The pilot offered such clear return on investment that American Apparel plans to roll out RFID across all of its nearly 150 North American stores, beginning with 17 stores in the New York metro area. In addition to the benefits listed above, once regionalized the company expects the system to increase sales by enhancing the intra-store transfer process.

Falabella

Retail giant, restocking high value menswear

Chile's 118-year old Falabella Group recognized the retail potential of RFID early, but waited until the technology's second generation demonstrated high reliability to introduce a four-month pilot program in one of its Santiago department stores. The system includes handheld and mobile readers mounted on carts; RFID tags were affixed to two popular lines of men's apparel, including tailored garments as well as pants, shirts, sweaters and other items perceived to have high value to the store's customers.

Readability of RFID tags was quickly proven to be 99.7% accurate. With high confidence in the data that would be recorded, Falabella began daily inventory counts. This had been a monthly or even quarterly process, requiring as many as 50 employees working over two full nights while the store was closed. With RFID, a single associate walks the floor pushing a mobile reader cart before store opening each day. Hundreds of man-hours were reduced to a few hours, while achieving 98.4% inventory accuracy. Routine daily reports gave store managers the data needed to set new key performance indicators (KPIs) on issues such as shrinkage and the dwell-time of merchandise in the back room, on the sales floor or in-transit between the two.

Based on the success of its pilot program, Falabella is currently working on a plan for larger-scale RFID implementation.

“Item-level RFID deployments are delivering higher sales, with increases ranging from 5-20% depending on the caliber of retail execution and the range of RFID applications deployed.”

Marshall Kay, Principal, RFID Sherpas

DEPLOYING RFID IN YOUR RETAIL ENVIRONMENT

Ready to consider bringing the benefits of RFID to your retail operation? The flexibility of RFID technology allows retailers to customize a solution based on each store's specific needs, so every implementation will be unique. However, the basic steps involved in putting RFID to work are much the same.

1. Plan

A pilot RFID system begins with a careful consideration of your store layout and processes. (Generally, larger retailers will start with one or more stores as a pilot; smaller retailers may start by tagging and tracking a limited selection of key merchandise.) Your RFID vendor partner can work with you to perform a site survey, identifying the control points of your merchandise movement, available support infrastructure such as power outlets and wireless networks, and any other special considerations. They will then help you select the right combination of mobile and stationary RFID readers to meet your business goals.

2. Install

Once the plan is complete, installation of an RFID reader layout and integration with your existing systems can typically be accomplished in just a few weeks, with most of the work being conducted outside regular business hours. Naturally, the size of your store and scope of your pilot will be factors. Retailers who elect to have much of the RFID reading done automatically via stationary readers and "smart" shelves should allocate more time for set-up than retailers who opt for solutions based on handheld and cart-mounted readers.

3. Implement

After the reader system is installed, inventory tagging is the primary step in implementing your new system. Retailers often decide to tag only a portion of on-hand inventory, gradually introducing pre-tagged merchandise as it arrives in store. But if you prefer a quick blitz, your RFID label provider can often provide assistance with tagging implementation.

4. Evaluate

Expect to operate your new RFID system for three to four months, then evaluate your results and refine your system. In a large retail chain, RFID's operational impact is typically validated by comparing the performance of RFID-enabled

“Fortunately for retailers, these store-level benefits can be achieved without the need to first make large-scale investments or process changes upstream.”

Michael Brown, North American Director,
Customer and Channel Practice, Kurt Salmon Associates

stores with comparable control stores not yet using RFID. In addition to measuring changes in revenue, retailers often turn to independent retail consultants to measure and validate RFID's effect on a number of metrics, including: conversion rate, average transaction size, inventory accuracy levels, in-stock position, and speed of processing of incoming merchandise. Simply looking at the revenue picture is insufficient.

The benefits of RFID in daily operations are often obvious after only a few weeks of using it, so you can expect your staff and customers to embrace the technology quickly. A formal evaluation, however, will help reinforce your business case, demonstrate return on investment, and give you an opportunity to continue to align your new RFID process with long-range strategic goals.

5. Expand

Once retailers have experienced the benefits that RFID has to offer, plans are usually put into place to expand the use of the technology. In the case of multi-store retailers, deployment to other stores offers enhanced opportunities for regional inventory management and customer tracking. In smaller stores, expansion may include adding additional merchandise lines to the program, providing interactive opportunities with smart displays, and other system enhancements.

“RFID has evolved to a point that makes it practical and potentially transformative in its abilities to enable key business benefits to retailers of almost all sizes and types.”

Aberdeen Group, *RFID in Retail*, March 2008

CONCLUSION

The benefits of using RFID in a retail environment are many, including faster and more accurate inventory counts, fewer out of stock situations, greater full price sell-through, enhanced shopper experience, and reduced inventory shrinkage. All of these benefits add up to a more efficient, engaging retail experience for your customers and your associates, as well as increased profitability for you.

RFID is truly a win-win solution, solving chronic store operation problems while creating new selling and promotional opportunities. Savvy retailers who embrace RFID today can capture market share from their competitors and watch their revenues rise.

About RFID Sherpas LLC

www.rfidsherpas.com

RFID Sherpas LLC is a consulting practice focused exclusively on the practical application of RFID in stores and other retail operating environments. The company serves a global base of retailers, merchandise vendors, technology providers and industry associations as an advisor on all facets of Retail RFID, including matters of strategy, project design, implementation, and business case analysis. RFID Sherpas LLC also plays a central role at the association level, fostering education and adoption of item-level RFID within the retail community.