

AN **Apparel** WHITE PAPER

# FOCUSED RFID Solutions:



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A famous 1960s ad campaign for Volkswagen advised everyone to “Think Small.” Today, this maxim from a previous generation may well be the best approach to getting the most from RFID technology, especially in retail store settings.

**F**ocused, carefully managed RFID initiatives designed to accomplish specific business goals are already producing significant, measurable benefits for the apparel and footwear industry. Item-level tags and in-store deployments are addressing some of the industry’s most basic challenges, including out-of-stock levels, inventory accuracy, and helping customers quickly and easily find the size, style and color that they’re looking for.

RFID’s speed, accuracy and operational applications are being demonstrated in a growing number of real-world retail deployments. For example, item-level tagging is making daily cycle counts—traditionally so time-consuming and labor-intensive they take place only two to four times a year—not just possible but practical. These and other RFID benefits are creating sales lifts ranging from 5 to 20 percent across a wide range of deployments.

Those stuck in a “Think Big” mindset—believing that RFID deployments must be large-scale, enterprise-wide affairs in order to be effective—are mistaken, says Marshall Kay, Principal at consulting firm RFID Sherpas LLC. “Unfortunately, the retailers who make this error compound their problems by then failing to attach sufficient priority to educating themselves and staying abreast of successful retail deployments,” says Kay. “What they fail to appreciate is that RFID can be deployed in a very targeted manner, and almost immediately begin delivering meaningful, tangible benefits.”

A more focused, incremental approach also allows retailers to concentrate on the benefits that are most important to their business model. For example, a company might choose to focus its RFID efforts first on improving inventory management processes, such as cycle counts, safety stocking, or replenishment, or on

enhancing customer service. After achieving its primary goals, the retailer can then reap additional benefits in areas such as loss prevention, authenticity guarantees/counterfeit prevention, and quality assurance.

“Once you put a tag on an individual product, you’ll want to use it for as many uses as possible,” says Kay.

#### RFID PRODUCING CONSISTENT SALES LIFTS

An incremental approach is also viable because well-managed RFID deployments are capable of producing business benefits in a number of important areas. According to Aberdeen Group research, reported in its March 2007 “RFID in Retail Benchmark Report,” RFID solutions help Best in Class retailers reduce:

- Inventory replenishment time by 30 percent
- Theft incidents by 42 percent
- Price markdowns by 25 percent
- Customer wait times at the POS by 25 percent

In addition, store-level RFID applications can have a strong positive impact on customer service. *Apparel’s* 2nd Annual RFID Report, co-authored by Capgemini and appearing in October 2007, identifies several consumer benefits, including:

- Faster product location
- Improved access to detailed product information
- Improved access to product availability
- Efficient after-sales processes
- Guarantees of product authenticity

As beneficial as all these improvements are, for many retailers RFID’s key benefit is its ability to increase top-line sales. RFID Sherpas’ Kay reports that item-level RFID deployments are indeed delivering higher sales, with increases ranging from 5 percent to 20 percent



“Item-level RFID deployments are delivering higher sales, with increases ranging from 5 percent to 20 percent depending on the caliber of retail execution and the range of RFID applications deployed,” says Marshall Kay, Principal, RFID Sherpas.



**A rolling cart equipped with an RFID reader can make daily cycle counts of tagged merchandise practical.**

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Many factors contribute to these sales increases, but most experts agree that RFID's ability to put the right product in the right place at the right time is crucial, especially given that customers have nearly a 10 percent chance of finding their product out of stock on the retail shelf, according to a March 2008 AMR Research, Inc. article by John Fontanella.

When items are misplaced (on the wrong shelf, in a fitting room, or in a back room) or not on the sales floor, retailers experience both "hard" and "soft" losses. The "hardest" loss is a lost sale, and it's more common in apparel and footwear than in, for example, grocery, where an out-of-stock situation may simply result in a consumer choosing a different brand of their desired product.

"Soft" losses can take a variety of forms. The time salespeople spend looking for a product could certainly

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## New Balance Seeks Solid Data Demonstrating RFID's Real-World Value

New Balance's ongoing test of in-store RFID technology has already provided measurable business benefits, as well as a host of practical "lessons learned" for such deployments. The footwear manufacturer is hoping that solid, reliable test data will lead to even bigger benefits for itself and for its retailer customers.

New Balance began the first phase of its pilot at its Lawrence, MA factory store on July 1, 2007. RFID labels with unique item-level identifiers (including style, size and width) were applied to one of New Balance's most popular styles, accounting for approximately 700 pairs of shoes. The company installed antennas and RFID readers at three key locations in the store, so that the RFID-labeled items passing through the back-door readers are automatically entered into the Stock Room database; impact door readers then move these items into the Sales Floor database; and front door readers move them into the Sold database.

In addition, New Balance deployed handheld RFID readers and provided real-time inventory data to salespeople via PDAs. RFID readers and handheld devices are supplied by Motorola; Avery Dennison RIS applies the labels, and Vue Technology

coordinates the antenna and reader technology and the integrated databases.

### Boosting Cycle Count Speed

The handheld readers allow store personnel to perform complete cycle counts of the tagged items in approximately 12 minutes, making daily cycle counts practical from a time standpoint. The RFID-enabled system also provides a higher level of inventory accuracy—two percentage points higher than that delivered by the store's POS system. But to Frank Cornelius, Advanced Manufacturing Engineer for RFID Initiatives at New Balance, these improvements' highest value is as measurable data points in its ongoing tests.

New Balance's ultimate goal is to gather "really solid data that we can go to the bank with," says Cornelius. "Then we can approach our bigger customers and present this data in an unbiased way, saying we spent this on RFID, and here are the positives, the negatives, and the lessons we learned," he says.

Cornelius is anxious to move the program to its next phase, which will involve applying RFID labels to the entire men's shoe department — approximately 22,000 items in this store. With this technology in

place, and using non-tagged women's shoes as a control group, New Balance will be able to measure the key business benefit of an RFID-enabled store system — boosting sales. "RFID should give you better efficiency, inventory accuracy, and fewer out of stocks, but the big enchilada is increased sales," says Cornelius.

### Reinventing Restocking

In the meantime, the pilot has revealed just how inefficient some current in-store practices are, as well as the possibilities offered by RFID technology. For example, Cornelius was "surprised by how inefficiently manual restocking is performed." Store shelf restocking traditionally takes place twice a day — prior to the store opening and again in the afternoon. Two employees (one for the men's department, another for women's) do a visual inspection of each department looking for open spots. "They would see that, for example, a size 9 was 'missing,' write down everything that they needed and then go to the back room to get it," says Cornelius. "However, they had no knowledge if what they're writing down was even available in the back room. So

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be spent more productively—especially if they ultimately can't find what the customer wants. The customer's negative perception of the retailer, which began when they were unable to find the product on their own, has now been compounded by having his or her time wasted waiting for the salesperson. And the salesperson is placed in the position of placating an angry or disappointed customer rather than pleasing a satisfied one.

Compare these scenarios to the information-rich store made possible by item-level RFID. Improved inventory accuracy and more efficient restocking means the product is more likely to be on the right shelf in the first place. If it's not, "smart" shelves as well as back-room and fitting-room readers vastly speed and simplify product location. Even if the product is not in the store at the time, improved data availability allows salespeople to give customers definite information—or to offer an alternative that is in stock. In this environment, both this particular sale and any number of future sales can be saved.

## DEPLOYMENTS ON THE RISE

The desire to create these information-rich shopping environments is one element fueling a sharp rise in RFID deployments. "I see 2009 shaping up as a very big year for item-level RFID in apparel and footwear," says Kay. In addition to the consistent sales increases demonstrated by previous deployments, he cites a number of other converging factors:

- **Deployments are Getting Simpler:** Vendors now offer a number of out-of-the-box tools, such as reader and shelf packages and reporting applications, for retailers' RFID solutions, so there's less need for custom applications and complex systems integration efforts. Kay notes that in 2007, a U.S. specialty retailer was able to RFID-enable one of its stores in under 75 days. The retailer was quite pleased with the results and is planning to quickly deploy these capabilities to several more of its stores.

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### **New Balance's RFID Pilot** *continued from page 2*



**"RFID can give you better efficiency, inventory accuracy, and fewer out of stocks, but the big enchilada is increased sales" says Frank Cornelius, Advanced Manufacturing Engineer for RFID Initiatives, New Balance.**

this process took almost five man-hours per day, with no sophisticated way to fulfill a store planogram or to get the right shoes to the selling floor."

In contrast, the real-time data collection and inventory accuracy that RFID-enabled technology offers could virtually reinvent the restocking process. "The potential with RFID is the ability to set a planogram, and have a report generated on exactly what shoes to bring out to maintain that planogram," says Cornelius. "Not only does this eliminate the 'napkin writing' of the current visual inspection method, but only those shoes that are actually in stock, in the store, would show up on the report. And at the end of the day you would have a proper selling floor. It might have one shoe of every size, or it could eliminate those at the top or bottom end of the size scale—whatever the chosen matrix is, you could maintain it."

The data-gathering capability that RFID makes possible would allow retailers to

refine these planograms even further.

"Imagine the wealth of information retailers would get if this was done over a period of time," says Cornelius. "They might discover that certain sizes or styles just don't sell in a particular store, so it makes more sense to have more of the popular items out on the floor."

#### **Making Daily Cycle Counts Practical**

RFID also offers vastly quicker inventory measurement capabilities. The handheld readers' ability to count 700 tagged items in 12 minutes makes daily cycle counts possible. In contrast, taking inventory for an entire store using traditional methods "involves two weeks of preparation and takes three full days," explains Cornelius. "It's such a labor-intensive process that we can only do it twice a year."

As fast as cycle counting with RFID can be, New Balance is looking for even more speed as it moves into the next phase of its

test, which Cornelius is planning to begin in Q2 2008. With plans to tag 22,000 items, performing cycle counts with handheld readers would take at least three hours per day, so New Balance has begun using a mobile cart reader that Cornelius hopes will cut reading times by as much as 75 percent. "With this new tool, we're hoping to be able to cycle count the 22,000 items in 45 minutes," says Cornelius. "Then I can go to the store manager and make the case that this is an activity that's worth that amount of time."

Once New Balance moves into Phase Two, Cornelius wants to run a three-month minimum trial in order to get accurate measurements on metrics such as out of stocks, customer service improvements and especially increased sales. "At that point we can do a bona fide analysis of how RFID is going to work for us," he says. ◀

## RFID Speeds Cycle Counts, Improves Inventory Accuracy for Falabella

A successful apparel RFID pilot at Falabella made daily cycle counts of tagged merchandise possible, while also improving inventory accuracy at the Chile-based retailer. A 118-year-old retail giant with 2007 sales of \$5.7 billion and 50,000 employees, the Falabella group operates stores in several verticals as well as a travel agency and financial institutions, with operations spread throughout Chile, Colombia, Argentina and Peru.

In early 2006, the retailer outlined three goals for an RFID pilot project: 1) to conduct daily inventory counts of RFID-tagged apparel; 2) to achieve at least 98 percent reliability of RFID tag readability and data accuracy; and 3) to build a business case for RFID. The retailer understood the importance of getting buy-in across departments, including technology, business and store operations, for the pilot. "The synergy between the different departments was very important," says Cristian Astaburuaga, Chief of Enterprise Architecture and the RFID project team leader at Falabella.

The RFID pilot was conducted from January to April 2007 at a department store in Santiago, where Falabella attached RFID tags to select men's clothing from the Lacoste brand and a popular local fashion brand. The tagged apparel included men's tailored garments as well as suits, pants, shirts, T-shirts, sweaters and belts—all goods that Falabella perceived to be of high value to the store's customers. The retailer did not involve apparel vendors in the pilot.

The company chose IBM for RFID business process consulting and as the lead technology integrator for the project. Falabella selected Motorola's MC9090-G RFID handheld readers for the receiving process and built two battery-powered mobile carts for inventory counts, using Motorola-supplied fixed readers and antennas. The retailer purchased its RFID tags from Paxar and chose OATSystems for RFID software.

One of the pilot's three goals was achieved right out of the gate: Readability of the RFID data was 99.7 percent



accurate. With confidence in the data, Falabella moved to tackle another goal. It began conducting daily inventory counts of its RFID-tagged apparel, attaining 98.4 percent inventory accuracy.

In each daily cycle count, there were about 2,500 RFID-tagged garments, depending on stock levels in the store. During the course of the pilot, Falabella tagged a total of 7,000 apparel items with RFID tags.



"The synergy between the technology, business and store operations departments was very important," says Cristian Astaburuaga, Chief of Enterprise Architecture, Falabella.

Every morning before the store opened, a Falabella associate rolled a mobile RFID reader cart through the apparel department, automatically collecting RFID signals emitted from the Paxar tags. This data was fed into the OATSystems software for report generation.

The RFID-enabled inventory counting was one of the most compelling achievements of the pilot, not only because of its increase in inventory accuracy but also because of its clear time-saving benefit. Falabella proved that

an inventory count could be done with RFID in a matter of hours. Done the traditional way, that count would require 50 employees per store to work for two full nights while the store was closed—a major undertaking only possible to schedule monthly, if not quarterly.

"The most important business learning that we took from the pilot was that our proceedings and processes must be redesigned in order to take full advantage of the new data gathered by RFID item tagging," says Andrés Arancibia, Falabella's Research and Development Chief. "For example, during the pilot we did not integrate the RFID system to our back end processing for POS and merchandising, and now we regret not doing that."

With a successful pilot under its belt, Falabella is working to forge a pragmatic plan for a larger-scale RFID implementation. "We are continuing to conduct lab tests, and have developed a basic RFID framework for ourselves to support several readers and to collect and process the captured readings," says Arancibia. "In this way we are preparing ourselves to quickly extend this technology to our suppliers and partners for future projects."

"We are still confident we can get better margins, less shrinkage, lower back room stocks and markdown optimization from RFID, all resulting in an increase in sales," he adds. "We also believe the adoption of item-level tagging will reveal new benefits from the data analysis perspective. The adoption of this technology will undoubtedly introduce great results in terms of the whole lifecycle of product movement—supplies, storage, distribution, sales and post-sale." ◀

- **Lower-Priced Items are Being Tagged:** Retail price points of tagged clothing have dropped and are continuing to do so, with the lowest U.S. retail price point currently at \$8 and reaching as low as \$6 in other parts of the world. "This blows away the myth that RFID is only applicable for moderately priced or expensive items, and shows that RFID is usable and economically justifiable at even modest price points," says Kay.
- **Department Stores are Shifting Their Stance:** According to Kay, in December 2007 a major U.S. department store chain informed its suppliers that it expected their senior executives to give serious thought to working on item-level RFID. "This is the signal that dozens of apparel and footwear companies have been waiting for," he notes. "Until now, merchants and suppliers have been treating RFID like an asteroid, worrying when it will hit and what the impact will be. Now a major retail account has issued its first clear, written directive, asking these suppliers to get their act in gear on RFID. It's not a mandate—in fact, this retailer has gone to great lengths to emphasize that it hopes it won't have to issue a formal mandate—but it's a significant milestone and it will generate a series of deployments."

Department stores may be reacting to the competitive edge that specialty stores with closed-loop supply chains have in the RFID area. On a practical level, retailers who control their supply chain processes will have an easier time with the mechanics of item-level RFID solutions: matching unique item information with unique RFID chip identifiers in a database; embedding RFID chips in labels; matching the correct label to the correct item; and shipping them to retail stores. A closed-loop supply chain can facilitate a closed information loop, allowing retailers to chart each product's journey through the store—from the back room, on to the sales floor, and through the POS to the consumer.



"Customers have nearly a 10 percent chance of finding their product out of stock on the retail shelf," says John Fontanella, AMR Research.

Tagging logistics are another practical consideration during an RFID initiative. Industry experts and RFID vendors note that hang tags can make for an easy adoption process. In addition, to get the most out of the information capabilities of an RFID system, tagging multiple style, size, and color product sets are ideal item selectivity characteristics.

#### LOOKING AHEAD

One positive sign for RFID's long-term prospects is that the metrics being used to measure a deployment's success are moving away from technical issues, such as read rates, toward metrics that have an actual impact on a retailer's business. In addition to sales increases, in-stock positions and conversion rates, customer experience metrics are becoming part of the analysis. Key performance indicators such as the average duration of a customer's store visit and the amount of time customers and associates spend searching for merchandise "are only now starting to get the attention they deserve," says Kay.

At this point in RFID's development, carefully focused deployments yielding such distinct, easily measurable benefits make strong business sense. But RFID's flexibility and its "fit" for apparel and footwear retailing indicate that companies seeking the biggest ROI should be prepared to expand their limited deployments to more items, more stores, and more parts of their enterprise. ◀



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Motorola provides proven RFID solutions, enabling new ways to increase revenue, profits, improve operational efficiency, and increase supply chain visibility for apparel/footwear companies. Integrating RFID into retail operations reduces stock-outs and increases customer care. Motorola has the experience to drive item-level, customer facing RFID success within the fashion industry.

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