RFID Takes Its Next Big Steps

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Retail Business Consulting

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RFID is looking up — literally. Overhead "eye in the sky" type solutions that provide a continuous view of each store's on-hand inventory have captured the imagination of several leading retailers. These automated systems, which in 2011 we dubbed Hands Free RFID, are garnering interest for three reasons. They eliminate the reliance on store labor to create these inventory snapshots, they make it possible to take these snapshots many times per day, and they improve the ability to identify an item's precise location within the store.

As more retailers find themselves with a critical mass of tagged merchandise in their stores, it is only natural for them to want to extract greater value from those tags, and not simply use them to improve inventory accuracy and replenishment execution. Automating the data capture process with Hands Free RFID is one way. Driving their order management, merchandising and loss prevention off of better data is another.

The world of Retail RFID is at an exciting point in its development and maturation. Up until now, RFID implementations have been remarkably similar in objective and design. The next wave of activity will exhibit tremendous variety, both in the functional capabilities being enabled and the approaches to generating this incremental ROI.

This year's RFID Report will highlight the different paths that retailers might wish to take and some important questions that will emerge in the course of pursuing these functional enhancements. We will also discuss the significance of these developments to vendors of branded apparel and footwear.

Omnichannel Keeps Fueling This Fire

Retailers have understandably been pleased with the improvements they see in top-line revenue and full-price sell through when they suddenly make their in-store inventory available for online shoppers to purchase. Investment in ship-from-store solutions should in our view remain a top priority, even for retailers that have yet to start utilizing RFID. We do not view RFID as a prerequisite to ship-from-store. Rather, the two initiatives should proceed in parallel.

Retailers who implement ship-from-store will have a strong incentive to adopt RFID too. RFID lets retailers extract even greater return from their (clearly wise) omnichannel investments. Increased inventory accuracy helps reduce the number of "pick declines"— instances where a pick is initially routed to

Store A but bounced by that store's associates to Store B usually after an unsuccessful search of the store. It also enables the retailer to expose a larger percentage of a store's on-hand merchandise than it might otherwise choose to do. For example, suppose a retailer's system of record believes that Store A has three units of SKU# 12345. For fulfillment purposes, due to lack of confidence in the data, the retailer may proceed as if Store A has only one or two units in store. This might not seem like a big deal, but the impact at the enterprise level can be large. The retailer can keep more SKUs on its website, for a longer period of time. This is especially important during periods of peak demand.

RFID can also help retailers minimize shipping costs. How many orders are ultimately split because of a pick decline, instead of being fulfilled from a single store? Even in instances where the retailer succeeds in fulfilling from a single store, how much extra is paid for shipping when a more optimal store may have been bypassed due to an incorrect belief that it lacked all of the required merchandise?

Even in instances where orders are routed to the ideal stores and pick declines are avoided, there may be additional opportunities. Could the picks have been made with even less labor with the benefit of RFID? Could a quicker promise time have been given to the customer if the retailer had more confidence in its fulfillment efficiency?

Just to reiterate, none of these questions is intended to rain on the ship-from-store parade. We believe most ship-from-store programs will be extremely profitable, even when RFID is not yet being utilized.

In-store pickup programs, where customers purchase online and visit the store to receive their purchase, will further elevate the importance of inventory accuracy. While the jury is still out on how quickly these programs will become mainstream in apparel and footwear stores, there is evidence to suggest it may happen sooner, not later, and that these programs can be quite profitable.

Consider the success that Gap Inc. is having with its Reserve Online pilot program — a type of program where the win for the retailer might seem even more remote than in-store pickup, because the customer merely reserves merchandise without committing to purchase it. The program launched in 40 Banana Republic and Gap stores in June. When online shoppers click the "Find In Store" button they are also presented with the "Reserve Online" option for these particular locations. The

company's Banana Republic and Gap ecommerce websites are updated every 20 to 30 minutes with revised product availability data. (Note: These stores do not use RFID for inventory management.)

After only eight weeks the company has elected to expand the program. Customers are able to reserve up to five items per day. Merchandise is held until the close of the next business day. Customers receive an email, and a text, too, if they provide their mobile number, when their orders are ready for pickup.

Speaking to analysts on the company's Q2 earnings call, the company's CEO Glenn K. Murphy commented that he was surprised by the number of reservations made by late-night shoppers, and he is excited about the implicit message to customers that the stores are always open.

A skeptic might ask, aren't the stores already always open, especially with retailers that have implemented ship-from-store and exposed their brick-and-mortar inventory to online shoppers? The answer is no. Here's why. Murphy reports that 80 percent of Gap Inc.'s shoppers choose to visit a store to try on the merchandise before committing to the purchase. Quick and convenient access to merchandise is clearly important to these "reserve online" shoppers.

The implications of all of this are clear. If the reserve online proposition can be cost justified, then surely the more customary form of in-store pickup program, which requires a purchase commitment, can be cost justified too.

Advances in the Automation of Data Capture

The opportunity to continually refresh the snapshot of on-hand inventory is very appealing, especially if reliance on store labor is eliminated. So too is the ability to break the store down into a large number of discrete zones and get a real-time view of each zone's contents. Not only does this make a retailer's existing inventory replenishment initiatives more effective, by identifying addressable holes on the floor more quickly, it can also enhance their ship-from-store and in-store-pickup programs by providing a true view of what is "available for sale."

Real-time visibility coupled with targeted surveillance also provides a powerful deterrent to both internal and external shrink and rich data for apprehending and prosecuting thieves. While the current generation of RFID solutions has already proven useful to loss prevention professionals — making them aware of losses more quickly and supporting their investigations — real-time RFID visibility has the promise to dramatically transform the world of loss prevention, shifting it from a reactive to a proactive endeavor. We generally try to avoid hyperbole, but in this instance it is fair to say that Hands-Free RFID can truly revolutionize this important retail discipline.

Fortunately for retailers, there are now several competing technology offerings that are each promising and viable. We will quickly describe them and then discuss the go-forward implications.

FIGURE 1

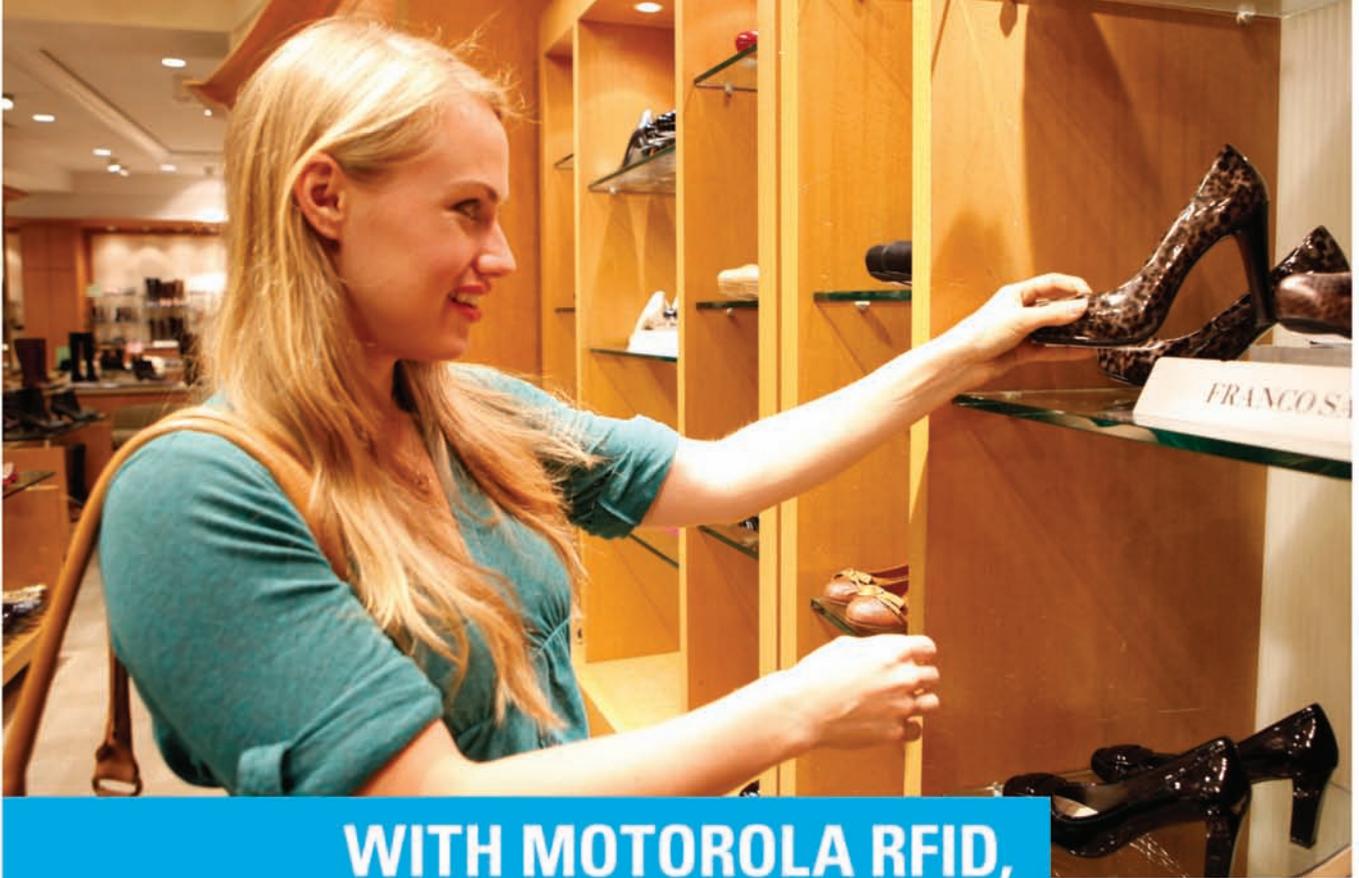### Approach 1: Apply Traditional Technology More Densely

American Apparel has publicly discussed the success it is having with a solution that utilizes a series of overhead antennas. These antennas are neatly mounted directly onto the metal rails already being used to secure the store's light fixtures. [See Figure 1.] The store is divided into many discrete zones, typically ranging in size from 100 square feet to almost 1,000 square feet. (Smaller zones were apparently possible but not requested.) Not all of the zones are square or rectangular. Some have special shapes — for example, a triangle appended to a square — to align with the specific layout of various merchandise categories within the store. The systems integrator tailored the size and shape of each store's zones to meet the retailer's precise visibility requirements.

The hardware installed to read the tags has been used successfully in retail for many years, which of course is one of the attractions of this system. The software, however, has not. This should not dissuade retailers from proceeding with this type of solution. But they need to understand that the market-leading RFID software solutions that they may already be using for their handheld-based deployments will in many cases need to be modified in order to take advantage of this rich data. Changes to reporting capabilities will be required too in order to make this new data fully actionable.

Approach 2: Utilize Next-Generation Technology

Next-generation systems that utilize a different set of technologies to achieve real-time visibility provide an alternative to traditional RFID readers. These systems, which have been deployed for many years in warehouses and shipping yards, promise to be able to track product movement and location even more precisely than the competing systems, and do so in a more timely, more cost-effective and more aesthetically pleasing manner.

These technologies have, to date, only been piloted in a handful of stores, but the results seem very promising. Two ven-

dors are competing head to head in this market space and are already well known to the retailers who have progressed farthest with RFID. [See Figure 2 for a picture of a current deployment of one of these vendor's solutions.] An alternative solution from a third prominent vendor, which won the Best in Show award in April 2013 at the *RFID Journal Live* trade show, is scheduled for release by mid-2014.

Relevant Considerations

1. <u>Granularity:</u> How much visibility is too much? Is it truly necessary to pinpoint an item's location to the nearest three feet? Depending on the retailer, and the retailer's specific use cases, we believe 10 to 20 feet will often suffice. The need for incremental granularity should be the subject of thorough cost/benefit analysis. [For a discussion of this question, see Figure 3.]

2. <u>Variations in Tag Quality & Design:</u> Retailers that embrace overhead reading solutions must devote greater care to the tag selection process than retailers who cycle count with handheld RFID readers. Those who do not will struggle to read 100 percent of their tagged merchandise. Fortunately, there are several suitable tag choices, with more on the way.

3. <u>Price:</u> Retailers always want hardware to be dirt cheap. That's no surprise. The "magic number" for hardware costs for a 4,000-square-foot specialty store appears to be $10,000. This is the price that retailers seem to want vendors to beat. The figure will naturally be higher for department stores because they are much larger. We believe this $10,000 number is achievable, but we also believe that many specialty retailers will see a favorable ROI, even at price points above this level.

4. <u>Information Overload:</u> Which data is worth collecting? And to what extent should resources be allocated to harvesting insights from it? The juice will not always be worth the squeeze. Retailers now have the ability to study their stores the same way they analyze click-through behavior on their websites. This exciting new ability to track product movement between discrete sections of the store enables analysis of trial-to-purchase ratios and shopping patterns within the store, among other things. Also, continuous inventory visibility opens a fascinating window into the quality of store-level execution. The actionable data generated can truly transform the way regional and district managers manage their territories.

Implications for the Brands

The number of department stores moving forward with serious RFID programs expanded further in 2013. The volume of source-tagged merchandise destined for sale in this channel is at an all-time high and continues to grow steadily. Nevertheless, it seems a handful of presidents of apparel and footwear vendors still have lingering doubts about the pace at which RFID tagging will be expected of their own company, particularly vendors of fashion and seasonal merchandise. We believe these presidents should take careful note of retailers' heightened interest in Hands Free RFID. Here's why:

FIGURE 2
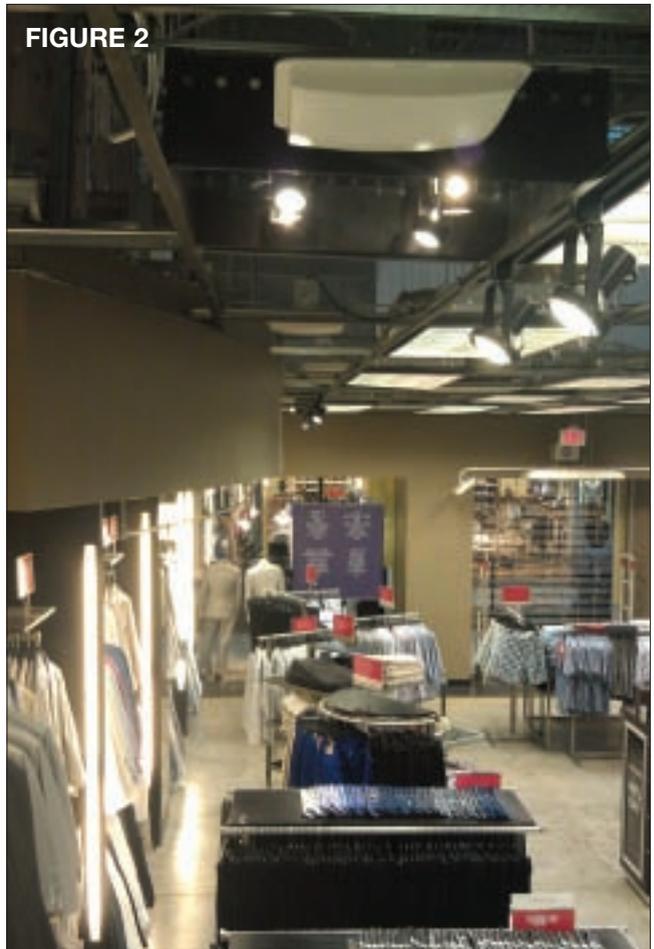
FIGURE 3

How much visibility does a retailer truly need at this juncture? We have created a pyramid to help retailers think this through conceptually. Keep in mind that greater granularity comes with a price. We suggest 10-20 feet as an initial target, but we recognize that there may be situations where greater precision can be cost-justified.

Ability To Monitor Product Movement Within The Store

Each Item's Exact Location (within 10-20 feet)

Sales Floor & Stock Room Quantity (By SKU)

Store's Total Inventory (By SKU)

Note: Some of the Hands Free RFID solutions on the market rely on the ability to detect product movement as a means of maintaining a true picture of the store's inventory throughout the day. For the purpose of this diagram, when we speak of Ability To Monitor Product Movement we are only referring to the retailer's ability to derive value from product movement information for Loss Prevention, Merchandising or other purposes.

1. The business case for investment in omnichannel rests to a large degree on the ability to improve margin realization on time-sensitive merchandise. Vendors of this type of merchandise have traditionally been more insulated from tagging requests than vendors of highly replenished items. The ability to improve full price sell-through increases considerably, though, when a retailer transitions from periodic inventory counts (using handheld readers) to continuous "eye in the sky" visibility.

2. Big box sporting goods retailers, a group that has been relatively late to the RFID party, are likely to find Hands Free RFID appealing. The emergence of these overhead solutions is likely to accelerate the timing of requests for more tagging of athletic apparel and footwear.

3. Luxury department stores have several additional use cases, over and above the ones common to mid-market department stores, that make Hands Free RFID a logical fit in their environments too. For example, high-end department stores have VIP suites for their best customers. Personal shoppers set aside choice merchandise for them and arrange visits to the store. Visibility into what is being kept in the suites (and for how long) is quite valuable, because retailers do not want to keep that merchandise off of the sales floor any longer than is necessary.

Final Thoughts

It's a testament to the maturation of Retail RFID that so many retailers are looking to augment their existing RFID programs with stationary "eye in the sky" hardware that provides continuous inventory visibility and zone-level granularity. Handheld RFID readers have helped generate considerable value over the years, but automating the data capture process (or in a sense eliminating it altogether) has always been the goal.

We believe there will be a number of significant Hands Free RFID deployments in the next two years. These deployments will exhibit intriguing differences, both functionally and aesthetically, reflecting the diversity of apparel and footwear price points and shopping environments.

A positive consequence of the migration to Hands Free RFID is that these systems will make it easier for loss-prevention professionals to derive value from the inventory visibility that RFID provides. It is not unreasonable for retailers to begin expecting more from their loss-prevention teams in the coming years.

The types of data that can be generated via Hands Free are truly astounding, now that a store's inventory can be captured with the proverbial push of a button. Retailers should assess their options thoughtfully to determine their true business requirements. By separating their wants from their genuine needs, smart retailers can leap into the world of Hands Free RFID for much less money than they might imagine. ∎

RFID Handhelds Will Always Be Useful

The venerable RFID handheld is not going away any time soon. It continues to deliver value. The migration to Hands Free RFID solutions will not be universal. The business case for Hands Free RFID will be strong for most retailers, but not every retailer. Plus, there will be instances where Hands Free RFID can easily be cost-justified, but the retailer delays investing due to capital constraints. Simply put, there will always be a segment of the retail market that opts to continue performing cycle counts with handhelds, despite the existence of more efficient alternatives. Handhelds are cheap (and getting cheaper).

Even retailers who choose to adopt Hands Free RFID solutions will likely still utilize handheld RFID devices for select in-store processes such as store transfers and the re-ticketing of items. Handheld readers are perfect for these tasks. Plus, if the retailer opted to install a Hands Free system without a high degree of zonal granularity, handhelds might still play a useful role when store associates are hunting for items.

ABOUT THE AUTHORS

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A recognized leader in the Canadian and U.S. RFID communities, he brings 14 years of enterprise strategy and solutions integration experience. Prior to joining the firm John-Pierre led the RFID practices of VeriSign and Bell Canada, where he was responsible for all RFID sales, marketing and delivery activities. Earlier in his career, John-Pierre was the Canadian Lead for the Mobility Solutions Practice of Capgemini (formerly Cap Gemini Ernst and Young), where he led projects in mobile strategy and business development for many of North America's largest organizations.

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