

# Understanding Real-World ROI for RFID in Retail

---

*Characteristics of Good Candidates for RFID*



By Scot Stelter

---

ChainLink Research  
2015

# Contents

|   |    |
|---|----|
| Introduction .....  | 1  |
| Benefits Start with Better Inventory Accuracy .....                   | 2  |
| Inventory Accuracy Degrades Over Time.....                            | 2  |
| RFID Enables More Frequent Counting and More Accurate Inventory ..... | 3  |
| Complex Assortment -- Size and Style Complexity .....                 | 4  |
| Avoiding Markdowns .....  | 5  |
| Display Execution .....   | 7  |
| Labor Savings .....   | 7  |
| Reduced Inventory Costs with RFID.....                                | 9  |
| Omni-channel Effectiveness .....                                      | 9  |
| Reducing Internal Shrink.....   | 9  |
| Characteristics of Categories that Benefit from RFID .....            | 10 |
| High Gross Margin.....  | 10 |
| High Theft Potential .....  | 10 |
| What Categories Make the Most Sense for RFID.....                     | 11 |
| Categories on the Fence .....   | 11 |
| Summing up – For Many, Substantial Benefits Are Available Now .....   | 13 |

## Introduction

If there are lingering doubts about RFID's value in retail, it's time to move past them. There are now dozens of proof points that retailers can realize significant improvements in inventory accuracy for selected categories, with apparel leading the way. With RFID, inventory counting can be done faster, more frequently and more accurately than traditional barcode-based methods, leading to significant



reductions in out-of-stocks and markdowns with corresponding improvements in both revenue and gross margin.

But not every retail category is a good candidate for RFID. Retailers have limited capital and multiple initiatives to invest in. In order to rank RFID in the portfolio of IT investments retailers are considering they need a framework for understanding if it's right for them.

In this paper we break down the question by examining the mechanisms that create benefits, the criteria that make categories suitable and examples of results from the field. Significant financial benefits are available now for many retailers meeting these characteristics.

To illustrate the potential financial benefits of RFID, we introduce a hypothetical apparel retail chain, *Hypothetical Fashions Ltd. (HFL)*. HFL is a healthy, \$2 billion chain with about 500 stores. As we dissect the various financial benefits of implementing RFID, we'll estimate the impact on *HFL's* numbers. *For a detailed description of HFL, see this sidebar at right.*

### *Hypothetical Fashions Ltd.* (a Hypothetical Retail Chain)

*In this paper, in order to illustrate ROI, we'll refer to a hypothetical apparel retailer called HFL. HFL has 500 stores and an annual revenue of \$2B. HFL has healthy gross margins of about 50% and turns inventory 5 times a year, typical for similar chains.*

*With an AUR of \$50, HFL sells about 40 million items per year, or about 80 thousand per store. At any given time, each store averages 16 thousand items in stock. HFL has chosen to tag goods in two categories:*

- *Continuously stocked and replenished items with complex mix assortments – 30% of the total*
- *Higher AUR items that are perishable due to being in fashion or seasonal categories – 30% of the total*

*HFL has decided to tag 60% of its items, about 24 million units.*

*HFL's loss prevention team grapples with shrink that is typical for an American apparel retailer, at about 1.8% of sales. About 45% of this is from internal theft – or about 0.8% of sales.*

*HFL has a cost of capital of about 9%.*

*HFL has embarked on an omni-channel strategy in which its stores support both in-store and e-commerce shoppers.*

## Benefits Start with Better Inventory Accuracy

Inventory accuracy is at the core of everything a retailer needs to do. Planning, merchandizing, replenishing, attracting shoppers, converting shoppers, promoting loyalty and generating return business all depend on knowing what's in stock and making sure it's in place for customers to buy. Out-of-stocks reduce sales and erode loyalty. Excess inventory leads to markdowns that cut into margins.

Inventory accuracy is not just a brick and mortar concern; it's fundamental to any omni-channel strategy. With inventory distributed across dozens or hundreds of stores, it is impossible to reliably make and fulfill commitments to online customers unless count and location information in the system of record is reliable.

### Inventory Accuracy Degrades Over Time

Retail inventory accuracy is historically abysmal, especially for apparel. Counting stock is so costly and disruptive that softlines retailers typically do it only twice a year on average.<sup>1</sup> If accuracy is nearly perfect immediately after a count, it declines every day until the next one; the longer the interval, the worse it gets.

Errors arise in every retail operation, including planning, allocation, shipping, receiving, POS, replenishment and counting, not to mention theft. One frequently cited figure says that for the typical retailer who does semi-annual physical counts, only about 65% of inventory records are still accurate when the time comes to count. Our research indicates that accuracy six months after a count ranges from a high of about 85% down to as low as 40%. *See the sidebar for details on inventory accuracy math.*

#### Inventory Accuracy Math

Inventory accuracy measures the portion of SKUs of which physical inventory matches the number listed in the system of record. For example, if a store carries 10,000 SKUs, but for only 8,500 the count in the database matches the actual count, the store's inventory accuracy is 85%.

Academic studies say that for retailers counting semi-annually, accuracy typically degrades several percent per month. For retailers with the best internal controls this erosion is as low as 2%, but our research suggests that about 6% is typical and for some it can be twice that.

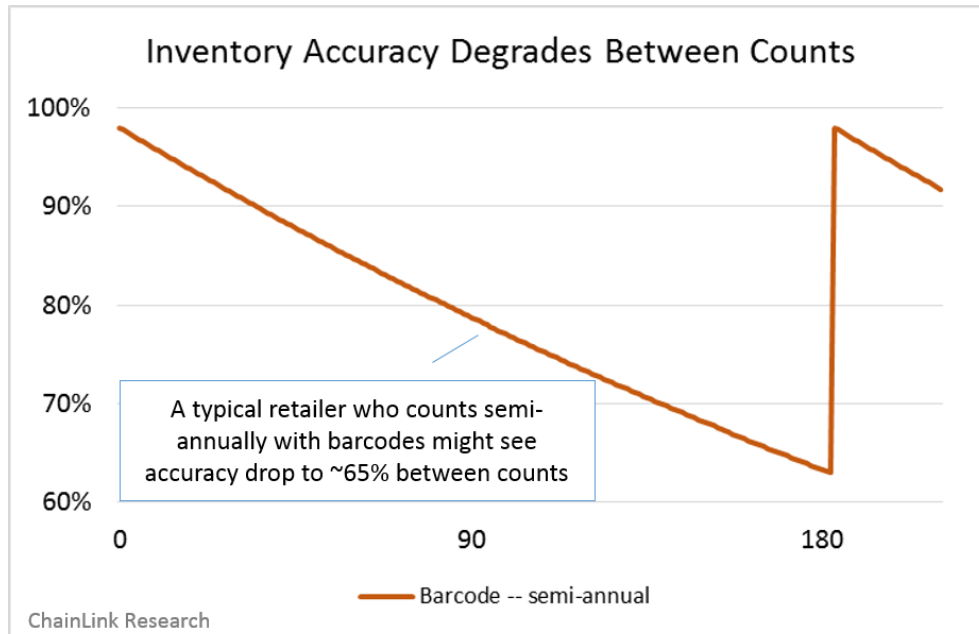
When retailers count twice a year, which is typical, accuracy can drop to very low levels. In 2004, DeHoratius and Raman<sup>2</sup> reported 65% accuracy, or 35% of records being inaccurate across several departments for one large retailer, while in 2007 Kang and Gershwin<sup>3</sup> reported an average of 51% across several retailers. Our research includes retailers as low as 40% and as high as 85% between semi-annual counts, suggesting a monthly rate of decline from a low of about 2% to a worst case of 13%.

---

<sup>1</sup> [Physical Inventory Counting Practices](#) retrieved Nov 15, 2014

<sup>2</sup> DeHoratius, N. and A. Raman (2004). "Inventory Record Inaccuracy: An Empirical Analysis." University of Chicago Graduate School of Business

<sup>3</sup> Kang, Y. and Gershwin, S., (2007). "Information Inaccuracy in Inventory Systems – Stock Loss and Stockout" Massachusetts Institute of Technology,



Inaccuracies lead to out-of-stocks (OOS), which depress sales, irritate customers and erode loyalty. Harvard Business School found that at any given time 8% of retail items are out of stock; for high mix-complexity items (like denim and lingerie) it's closer to 20%.<sup>4</sup>



Even if items are in stock, they may not be available on the selling floor. The percentage of SKUs in back inventory but not displayed to shoppers can be in double digits depending on the retailer's replenishment practices.

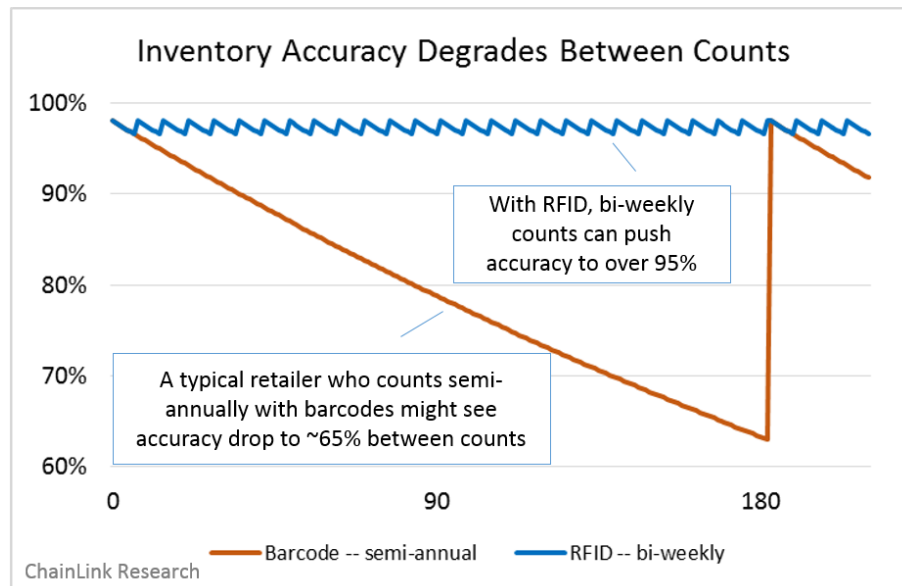
The nature of the inaccuracy determines the business impact. A modest error in the reported number of a given SKU is a minor problem. But if physical inventory is zero while the system says inventory is above the re-order point, the item is frozen: no replenishment happens until the next physical count. This could mean months of lost sales, invisible to store management.

## RFID Enables More Frequent Counting and More Accurate Inventory

Employees can count RFID tags about 25 times faster than barcode labels. A retailer who counts twice a year with barcodes could count every week at the same cost. When errors have less time to accumulate, accuracy stays high. Retailers we surveyed typically reported accuracy surging to over 95% with RFID, in some cases exceeding 98%.

<sup>4</sup> Kurt Salmon, The Compelling Case for RFID, pp2

Replenishment is more effective as well. One fashion retailer we interviewed reported pre-RFID stockouts on the store floor of over 30% of SKUs despite inventory in the back room. With RFID, stockouts dropped to less than 5%.



### More Frequent Counting Enabled by RFID Means Higher Accuracy

### Complex Assortment — Size and Style Complexity

RFID benefits favor categories with an assortment complicated by permutations of size, style, color and other variables. On the e-commerce site for a large discount chain, a search for “denim jeans” generates almost 400 styles offered in a multi-dimensional array of waist, inseam, color and finish. Based on a sampling of styles, it’s apparent that there are over five thousand separate SKUs in the category.

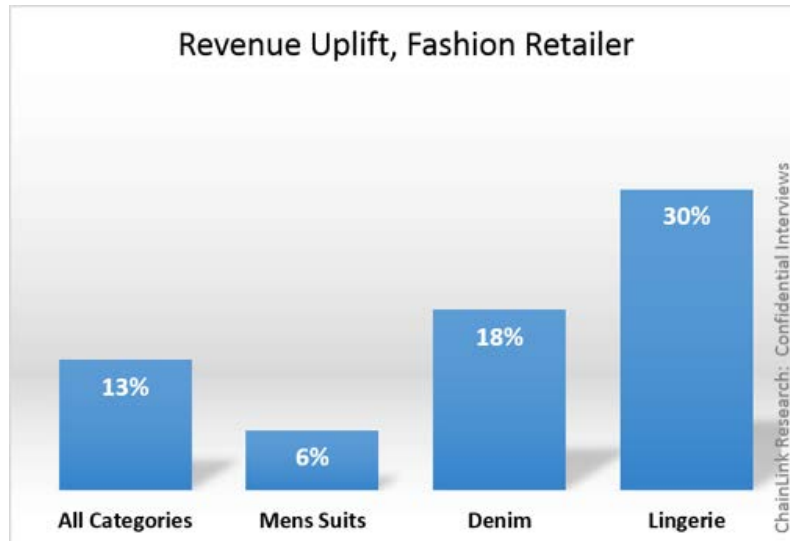


Women’s intimates have similar complexity. On the e-commerce site for a popular, mid-range department store chain, a search for “bras” generates 750 hits, offered in dozens of size and color combinations leading to thousands of SKUs. These complex categories offer many opportunities for errors that can lead to out-of-stocks.

Denim and lingerie epitomize the categories that benefit the most from RFID. One apparel retailer who reported an average revenue uplift with RFID of 13% across all categories told ChainLink that denim and lingerie revenue rose by 18% and 30% respectively.<sup>5</sup>

<sup>5</sup> The results were from an RFID pilot project deployed by a fashion retailer that has over 1,000 stores on multiple continents.





Double-digit revenue uplift for high-complexity, continuously stocked categories appears to be typical. A technology trendsetter, Macy's has said that 30% of its revenue has the "size and color intensive" characteristics that fit this description. For those categories, Macy's announced average revenue uplift of about 10% after implementing an RFID solution. Similarly, in an investor conference call, Sears reported revenue uplift of about 10% resulting from an RFID pilot.

### RFID Has the Greatest Impact with Highly Complex Categories

It's too early to tell what the industry average will be, but Macy's and Sears are not alone in experiencing results like this. ChainLink has interviewed multiple retailers with revenue uplift of over 10% in similar categories. One European apparel retailer with revenues of over \$1B told us that revenue uplift ranged from 4% to 12% depending on the category. A fast fashion retailer with revenues approaching \$10B reported uplift averaging 13%.

*Assuming our hypothetical retailer, HFL, is typical, the firm should expect \$60 million in incremental annual revenue and about \$30 million in incremental gross margin from avoiding out-of-stocks.*



### Avoiding Markdowns

For non-replenished<sup>6</sup> stock such as fashion and seasonal items, the playbook provides for planned markdowns to avoid steep end-of-season discounts. Better inventory accuracy means early warning of excess inventory issues, smarter distribution of holdback inventory, more precise execution of the markdown plan and more time to make it work. Ultimately more items are sold earlier in the markdown progression at higher price points, generating more margin.

<sup>6</sup> More precisely, this would include lines that are replenished from holdback inventory once or twice within the season, but not on an ongoing basis throughout the year.

The leverage is significant. Every dollar of markdowns avoided is a dollar of profit. For retailers with a high percentage of fashion or seasonal items, minimizing markdowns can determine a successful season.

The key characteristic here is perishability. Any retail item with an implicit sell-by-date, whether driven by rapidly changing fashion trends, the passing of the seasons or limited shelf life needs to be cleared out by the deadline.

*For our hypothetical retailer, HFL, about 30% of the revenue is in items that sell through and are not re-ordered by the end of the season. Due to operational imperfections and Murphy's Law, a third of these styles, 10% of revenue, started out on a path to steep, end-of-season discounts. Thanks to bi-weekly RFID inventory counts, however, HFL planners are able to fine-tune markdown plans and replenishment from holdback inventory. This boosts gross margin on these categories by about 5%, producing an additional \$10 million in gross margin. For example calculations, see the Markdown Math sidebar, below.*












### Markdown Math

*Thanks to better inventory accuracy, HFL was able to boost gross margin by 5% on some of its sales.* Below is an example calculation showing where that 5% might come from. The example compares three different end-of-season outcomes for a line of blouses. **The Ideal Plan, The Worst Case, and Recovery with RFID.**

**The Ideal Plan:** In the example below, the plan for an apparel line with an original retail price of \$100 and a cost of goods of \$43 includes a promotional program to be executed over a 13-week season. The plan calls for markdowns to \$80 and then \$60 during the season. The planned AUR for the line is \$86, for a gross margin of 50%.

**The Worst Case:** Inventory in the system of record starts out several percentage points off because of substitutions by the supplier. Through a combination of lower-than-expected demand and higher-than-expected returns, inventory for several size/color combinations exceeds the plan 45 days into the season. Accumulating errors degrade inventory accuracy, hiding excesses in certain sizes and colors. When inventory remains after the second markdown to \$60, the store further discounts to \$40. At the end of the season the few items that remain are sold through in a clearance sale at \$20. The AUR for the line ends up at \$73, for a gross margin of 41%.

**Recovery with RFID:** Four weeks into the season, the biweekly inventory count reveals that there is excess in some sizes and colors and shortfall in others. Planners decide to accelerate the markdown plan, applying the first discount ahead of schedule. Then, because the bi-weekly count maintains the accuracy of the stock system at over 95%, planners can optimize replenishment from holdback inventory, ensuring that inventory goes where it's needed and not where there is already plenty. After a last, late-season discount, the remaining inventory sells through for a season AUR of \$80, \$7 higher than the "Worst Case" scenario above, bringing gross margin back up to 46%, a gain of 5 points.

| Price Ladder | The Ideal Plan  | The Worst Case   | Recovery with RFID  |
|--------------|---|--|---|
| \$100        |  |  |  |
| \$80         |  |  |  |
| \$60         |  |   |  |
| \$40         |   |   |   |
| \$20         |   |   |   |
| AUR          | \$86  | \$73   | \$80  |
| GM           | 50%   | 41%  | 46%   |

each blouse represents  
10 units at that price

ChainLink Research



## Display Execution

While many categories are displayed on the store floor for customer self-service, some categories require active sales engagement. For most footwear retailers, for example, the sheer number of size combinations precludes displaying all of the shoes on the floor at the same time. Instead, 5-10% of the shoes in inventory are on display, each style represented by a single shoe in a mid-range size. Sales associates retrieve the



customer's size and/or color from the stockroom, taking the opportunity to help convert shoppers into buyers. The number of shoes is surprising – large salons display thousands of shoes. In the massive Macy's Herald Square shoe department, 20,000 shoes on display represent about 300,000 shoes in backstock, according to a case study published by Tyco Retail Solutions.<sup>7</sup>

In the Macy's case, prior to implementing an RFID tracking system, only about 65%-70% of the shoes in backstock were represented on the floor, meaning that customers were essentially blind to about 100 thousand shoes. Several million dollars in inventory were essentially idle. Since implementing a system for tagging display shoes, employees can count the entire collection of shoes on display as often as daily, making sure that virtually all styles are represented.

## Labor Savings



You're flipping through a rack of nearly identical garments searching for your size. Sliding each item along the rack, you make space to see the hang tag, take hold of it, orient it, and then finding that it is the wrong size, slide the next item into view. It's a two-handed, tedious operation. Now imagine doing it for every item in the store.

---

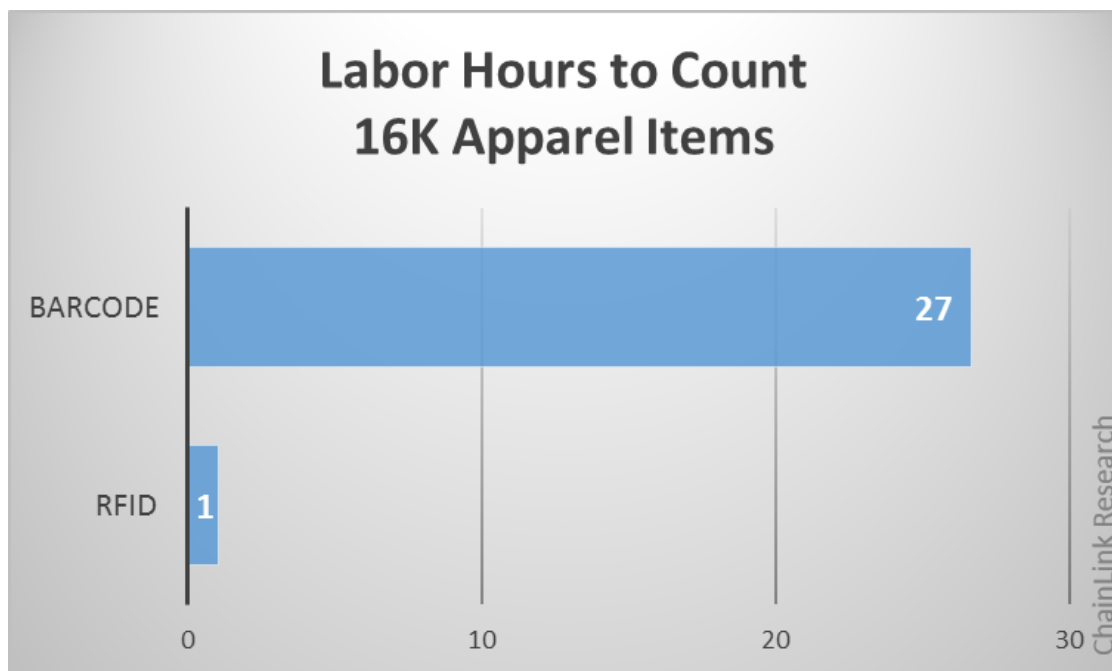
<sup>7</sup> [Macy's Herald Square shoe department](#) - case study published by Tyco Retail Solutions - retrieved March 15, 2015

Store employees have to locate and handle every single barcode tag while counting inventory, a fact that limits counting speed to less than 10 tags per minute.<sup>8</sup> In contrast, with a handheld RFID reader employees can count apparel items at least 25 times faster, making it possible to count more often, while freeing up sales associates for other, more highly-leveraged activities.



*Our hypothetical retailer, HFL capitalizes on RFID's faster counting speed. A typical store in the HFL chain has 16,000 items. It takes three employees a full shift to do a physical count by reading barcodes. With RFID it takes a little more than an hour, and the accuracy is typically better.*

*For the same labor cost HFL could go from counting semi-annually to counting every week. But HFL's store manager is satisfied with the accuracy gained by counting bi-weekly and uses the extra time to focus on customer service and other activities that boost sales.*



**With RFID, Employees Can Count Inventory 25 Times Faster than with Barcodes**

<sup>8</sup> The typical range for barcodes is from 3 to 10 tags per minute. In "[The Compelling Case for RFID](#)," Kurt Salmon says that 200 barcodes and 14,000 RFID tags per hour is normal, suggesting that RFID can be up to 70 times faster than barcode. (Case Study retrieved Mar 27, 2015)

## Reduced Inventory Costs with RFID

Planners invest in safety stock to avoid stockouts. Better inventory accuracy enables the business to reduce safety stock and inventory holding costs. Retailers who reduce inventory by 10% can expect savings amounting to about 0.1% of revenue.<sup>9</sup>

*If Hypothetical Fashions Ltd. could use RFID-driven inventory accuracy improvements to reduce inventory on tagged items by 10%, the firm could save about \$1 million annually.*

## Omni-channel Effectiveness

According to the National Retail Federation, e-commerce has grown steadily at about 15% per year since 2010,<sup>10</sup> more than twice the CAGR of retail overall. For traditional retailers who want to compete in this environment, RFID is a key enabler for implementing an omni-channel strategy, because it provides the inventory visibility and precision required to make and fulfill commitments to online shoppers from a distributed network of warehouses, DCs and stores.

A leader in this revolution, Macy's piloted online fulfillment from stores in 2010<sup>11</sup> and identified RFID as a key element of its Omni-channel strategy in 2011.<sup>12</sup> According to a senior Macy's executive, "RFID enables frequent [inventory] counting, which enables inventory accuracy. You can't be great at omni-channel without having high confidence at the store level, at the size and color level."<sup>13</sup> Macys said they plan to have 500 stores fulfilling online orders by the end of 2015.<sup>14</sup>

## Reducing Internal Shrink

Of those retailers who have implemented RFID for inventory management, most continue to rely on traditional EAS systems for real-time loss

*For HFL's loss prevention team, shrink across the 60% of items tagged was reduced from about 1.8% to 1.4% of revenue, a savings of about \$4.8 million per year that falls directly to profit.<sup>15</sup>*

prevention, rather than using RFID to activate alarms.<sup>16</sup> But RFID provides inventory intelligence that retailers can combine with other technologies, such as video, to discern and analyze loss patterns, guiding remediation to prevent future losses. Based on interviews and modeling, ChainLink concludes that shrink for apparel retailers can be reduced on average by about 25% through these methods.<sup>17</sup>

---

<sup>9</sup> With turns of 5 and gross margins of 50%, a retailer will have working capital of about 10% of revenue invested in inventory. If this can be reduced by 10%, it will save the firm about 0.1% of revenue in interest expense, assuming a typical cost of capital. The weighted average cost of capital for apparel retailers was, on average, about 9% in 2014. [Cost of Capital by Sector \(US\)](#), retrieved 8/2014

<sup>10</sup> NRF, [e-commerce has grown steadily](#), retrieved March 20, 2015

<sup>11</sup> [Improvements in M.O.M.](#), retrieved March 19, 2015

<sup>12</sup> [Macy's Annual Report Fact Book 2012, pp7](#), retrieved March 2, 2015

<sup>13</sup> Bill Connell, Macy's senior VP of logistics and operations, ["Can RFID save brick-and-mortar retailers after all?"](#), Fortune.com, retrieved March 15, 2015

<sup>14</sup> ["Macys, America's Omni-Channel Store,"](#) Motley Fool, retrieved March 15, 2015,

<sup>15</sup> *With typical shrink in retail apparel being about 1.8% of revenue, of which 45% is attributable to employee theft, that's a gross margin boost of about 0.4% of revenue, or \$8 million; HFL tags 60% of its items -- \$4.8 million saved.*

<sup>16</sup> Dual technology solutions are now available that combine traditional EAS with UHF RFID technologies in hard tags and exit gate readers, serving both purposes.

<sup>17</sup> One U.S. apparel retailer interviewed by ChainLink reported 35% reduction in shrink. Most say 25% is a more realistic estimate.

## Characteristics of Categories that Benefit from RFID

Categories that benefit the most from RFID inventory management have multiple of these characteristics:

- High mix complexity
- High gross margin
- Continuous stocking and replenishment
- Perishability due to seasonality, fashion trends or shelf-life
- High internal theft potential

Each of these increases either the likelihood or potential downside of inventory inaccuracy. Three were covered earlier in the paper; below is a look at gross margin and theft potential.

### High Gross Margin



Because unit sales increase is one of the main factors determining ROI, the larger the gross margin contributed by each individual sale, the better the chances of a positive return. The costs of RFID are independent of AUR,<sup>18</sup> however, below some level the return on investment is insufficient. Because so many variables affect ROI, there is no obvious cutoff for gross margins; however, based on ROI models, ChainLink believes that most items that contribute less than \$3 to \$5 of gross margin per sale will not justify the investment, despite meeting other criteria.

The denominator in the ROI calculation is not just composed of the cost of buying, applying and reading the tag, but also by the added cost of any action taken to capitalize on the information. Simply put, for low margin items, the information is just not valuable enough to pay for.

Consumer packaged goods is one example where we believe gross margins will not cross the ROI threshold, at least with the handheld use case. Existing replenishment models that rely on high velocity and frequent, even daily replenishment create a feedback mechanism that may roughly correct OOS issues faster than an RFID approach can economically achieve.<sup>19</sup>

An important counter-argument to this applies for a small number of retailers who have taken a strategy to tag 100% of their merchandise. In those cases, there are certain benefits that can only be gained with 100% tagging, and therefore they will tag some categories even if the gross margin does not justify it in isolation.

### High Theft Potential

Theft potential for a category is a function of many variables including opportunity, value and ability to convert stolen merchandise to cash. For some categories, such as jewelry, these considerations can

---

<sup>18</sup> Average unit retail (AUR) price

<sup>19</sup> Some grocery chains [experiment with replenishment](#) even more often than daily.



dominate the design of inventory management systems. Because jewelry is valuable, easy to conceal and often easily converted to cash, many jewelry retailers count inventory daily, and some count multiple times per day.

Jewelers have been rewarded for their efforts with shrink levels averaging 0.5%, about a third of that for apparel retailers. For jewelry the value proposition for RFID is not in reducing shrink further, but in reducing the cost of inventory management. Handheld solutions are available, as are turnkey, shelf-reader-based solutions that cost less than \$10 thousand per store. Shelf readers enable additional benefits associated with continuous monitoring, albeit with higher initial investment costs.

## What Categories Make the Most Sense for RFID

Table 1 shows a breakdown of the key characteristics of categories for which RFID is likely to yield a return on investment.

| Categories with High Potential for ROI |   |  |   |
|--|---|--|---|
| Key Characteristics                    | Example Categories  | Operational benefits   | Financial benefits  |
| Complex mix; stocked year-round        | Basics: <ul style="list-style-type: none"> <li>• Lady's intimates</li> <li>• Denim</li> <li>• Dress shirts</li> </ul> | <ul style="list-style-type: none"> <li>• Out-of-stocks reduced</li> <li>• Labor reduced or reassigned</li> <li>• Customer satisfaction up</li> <li>• Omni-channel execution</li> </ul> | <ul style="list-style-type: none"> <li>• Revenue uplift</li> <li>• Shrink reduction</li> <li>• Carrying cost reduction</li> </ul> |
| Seasonal                               | <ul style="list-style-type: none"> <li>• Fashion apparel</li> <li>• Seasonal items</li> </ul>                         | <ul style="list-style-type: none"> <li>• Markdowns reduced</li> <li>• Omni-channel execution</li> </ul>  | <ul style="list-style-type: none"> <li>• Revenue uplift</li> <li>• Gross margin uplift</li> <li>• Shrink reduction</li> </ul>     |
| Display execution challenges           | <ul style="list-style-type: none"> <li>• Footwear</li> <li>• Guns</li> <li>• Luggage</li> </ul>                       | <ul style="list-style-type: none"> <li>• Better merchandizing of SOH</li> <li>• Markdowns reduced</li> </ul>   | <ul style="list-style-type: none"> <li>• Revenue uplift</li> <li>• Gross margin uplift</li> <li>• Reduced sales effort</li> </ul> |
| High shrink risk                       | <ul style="list-style-type: none"> <li>• Jewelry</li> <li>• Off-price retail</li> </ul>                               | <ul style="list-style-type: none"> <li>• Shrink reduced</li> <li>• Labor reduced or reassigned</li> </ul>  | <ul style="list-style-type: none"> <li>• Lower COGS</li> <li>• Gross margin uplift</li> </ul>                                     |

ChainLink Research

**Table 1: Characteristics of Categories for which RFID Has High ROI Potential**

### Categories on the Fence

For some categories it's not possible to make a strong statement about the potential ROI for RFID without situational details. Table 2 shows a list of categories for which RFID might make sense and the points of leverage for each.



| Categories with Mixed Potential |  |   |
|---------------------------------|--|---|
| Category                        | Potential Leverage                             | Issues  |
| Cosmetics                       | Mix complexity                                 | Physics<br>Branding<br>Tag application<br>Substitutability<br>Margins too low<br>Turns too high |
| Sporting goods                  | Seasonality                                    |   |
| Consumer electronics            | High value<br>Complex assortment               |   |
| Retail auto parts               | Complex assortment<br>Vendor managed inventory |   |
| Wines and liquors               | High value<br>Complex assortment               |   |
| Accessories                     | Detect slow-moving inventory                   |   |
| Grocery                         | Perishability                                  |   |

ChainLink Research

**Table 2: Characteristics of Categories worth Investigation**

### *Bottom Line for Hypothetical Fashions Ltd*

*By implementing RFID across 60% of its inventory, HFL was able to boost revenue and gross margin while reducing shrink and inventory holding costs.*

*HFL increased revenue by 3.5% and gross margins from 50% to 52%, while cutting an additional \$5.3M in expenses. HFL's revenue uplift, while modest compared to some, was more than enough to beat HFL's hurdle rate for new investments. See Table 3.*

| Benefits for Hypothetical Fashions Ltd. |   |   |
|---|---|---|
| Financial benefit                       | Total   | Sources   |
| Revenue uplift                          | <ul style="list-style-type: none"> <li>\$70M, about 3.5% uplift</li> </ul>                                  | <ul style="list-style-type: none"> <li>\$60M avoided out-of-stocks</li> <li>\$10M avoided markdowns</li> </ul>                                    |
| Gross margin uplift                     | <ul style="list-style-type: none"> <li>\$37M, about 3.7% uplift,</li> <li>GM% up from 50% to 52%</li> </ul> | <ul style="list-style-type: none"> <li>\$30M avoided out-of-stocks</li> <li>\$10M avoided markdowns</li> <li>-\$3M cost of tags @ ~12¢</li> </ul> |
| Expense reduction                       | <ul style="list-style-type: none"> <li>\$5.8M</li> </ul>  | <ul style="list-style-type: none"> <li>\$1M inventory carrying</li> <li>\$4.8M shrink reduction</li> </ul>  |

ChainLink Research

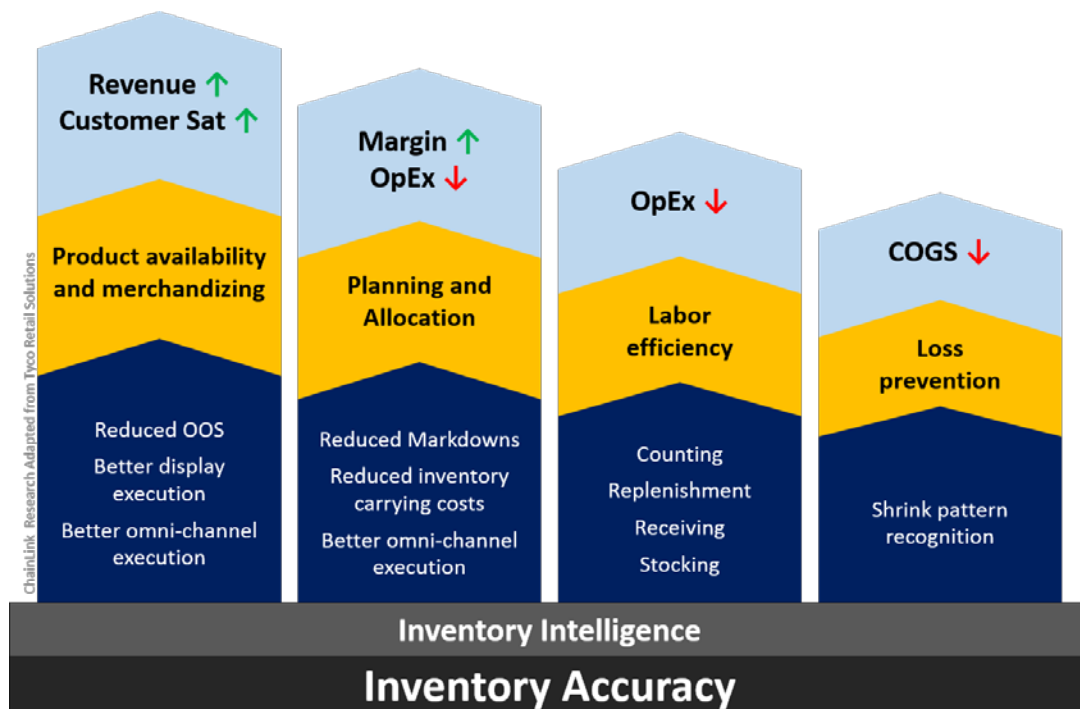
**Table 3: Bottom Line Results for *Hypothetical Fashion Ltd*, our Hypothetical Retailer**

## Summing up – For Many, Substantial Benefits Are Available Now

For many retail categories RFID offers the potential for significant ROI now. Uplift on both revenue and gross margin, combined with reductions in operating expenses delivers financial benefits that can easily justify the investment.

Additionally, inventory accuracy enabled by RFID is critical to building the omni-channel capability required to compete online.

Retailers carrying high-potential categories should immediately perform the analysis to prioritize RFID on their IT investment portfolio. Retailers with other categories should start the process of investigating the potential benefits and partnering with technology vendors to learn more. Retailers who implement RFID sooner will discover a competitive advantage.





*Sponsored by Tyco Retail Solutions*



#### **About ChainLink Research**

ChainLink Research, Inc. is a Supply Chain research organization dedicated to helping executives improve business performance and competitiveness through an understanding of real-world implications, obstacles and results for supply-chain policies, practices, processes, and technologies. The ChainLink 3Pe Model is the basis for our research: a unique, multidimensional framework for managing and improving the links between supply chain partners.

For more information, contact ChainLink Research at:

719 Washington Street, Suite 144, Newton, MA 02458.

Tel: (617) 762-4040. Email: [info@clresearch.com](mailto:info@clresearch.com) Website: [www.clresearch.com](http://www.clresearch.com)