SupplyChainDigest™

Your First Stop for Supply Chain Information

RFID News: Second Item-Level Retail Apparel Tagging Study Again Finds Substantial Improvements in Inventory Accuracy

Will Item-Level Tagging in this Space be the Catalyst for Case and Pallet RFID?

SCDigest Editorial Staff

The Information Technology Research Institute at the University of Arkansas, under the leadership of **Dr. Bill Hardgrave**, has just released another research paper on the impact of item-level RFID tagging in the apparel retail sector. This time, the study was based on work at Bloomingdale's department store, a division of Macy's. This is a follow up in a sense to a very similar study the Institute performed earlier this year at Dillard's. (See **New University of Arkansas Study on Item-Level Apparel Tagging Interesting, but Cause-Effect Relationships Not Clear**.)

As in the previous study, the researchers first created a baseline by comparing the inventory a store thinks it has, via its perpetual inventory system (PI), to the actual inventory on-hand, which was determined by an outside auditing firm.

For any individual SKU, the actual inventory can be "perfect" – equal to what the PI says, an understock (there is less actual inventory than the PI indicates), or an overstock (there is more inventory that in the PI). Under and overstocks result from a myriad of causes, including shrinkage, POS errors, in-store cycle counting errors, and mis-shipments from the retail DC or a vendor. These errors can have a significant cost in terms of lost sales (understocks) and excess inventories (overstocks).

In the control store, the inventory audits found substantial declines in PI accuracy during the course of the 13-week test period, as shown in the graphic on page 2.

According to the study, the level of "perfect" inventory accuracy in the RFID store increased by 27%, as measured in the simulated system versus the actual PI.
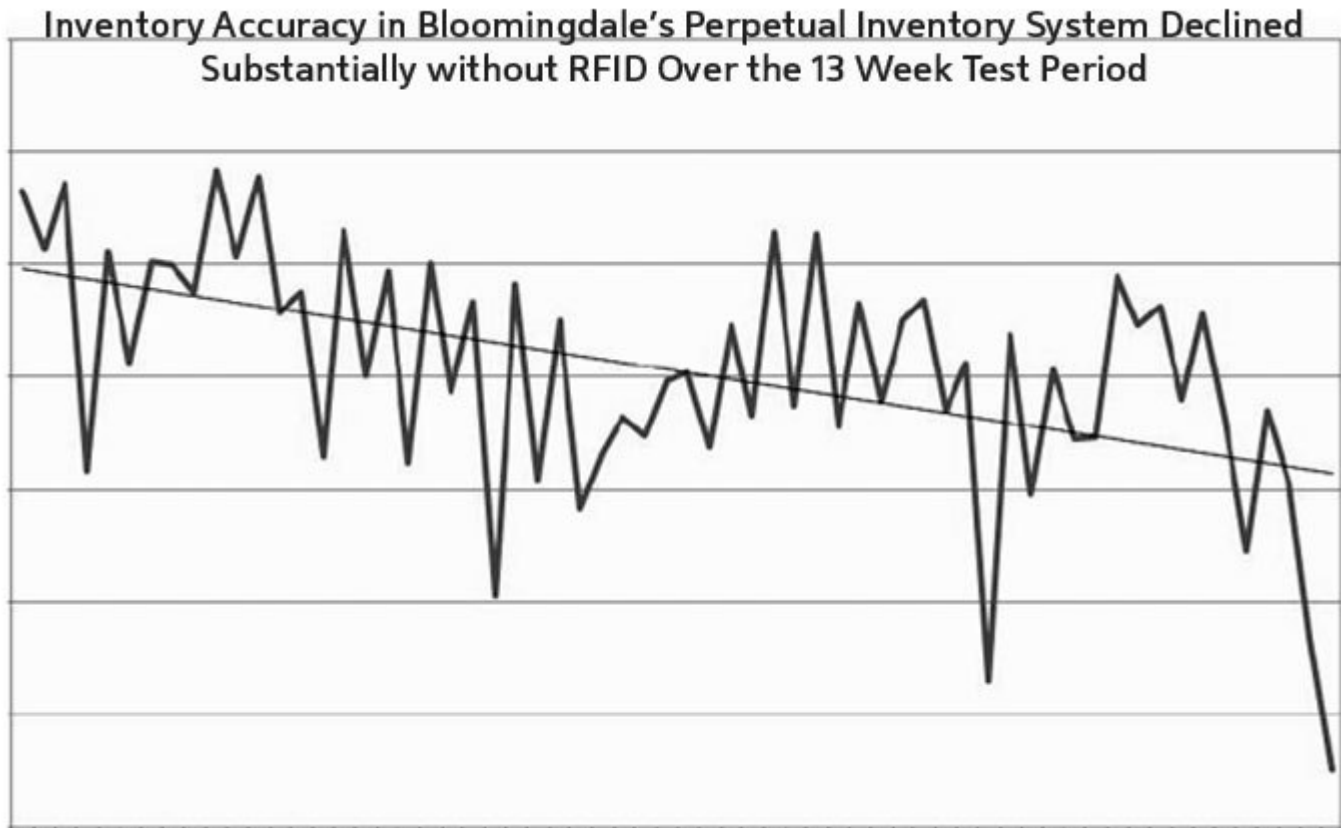
One store was outfitted with RFID readers at several points (receiving, entrance to store from back room, POS). Another control store relied on bar code scanning and/or manual counts and methods.

During the test, the PI in the RFID test store was not actually changed. Rather, the PI was simulated, with the RFID read/transaction data being posted to that simulated system, not the live system at Bloomingdale's.

According to the study, the level of "perfect" inventory accuracy in the RFID store increased by 27%, as measured in the simulated system versus the actual PI. The preponderance (21%) of that improvement came from reducing the number of understocks.

Unfortunately, it appears Bloomingdale's would not allow actual numbers from the study to be published in the public report. Therefore, it is difficult to get a real feel for what this 27% improvement really means, and what the economic value really would have been, though intuitively it seems likely that it would not be trivial.

RFID News: Second Item-Level Retail Apparel Tagging Study Again Finds Substantial Improvements in Inventory Accuracy (Con't)

Inventory Accuracy in Bloomingdale's Perpetual Inventory System Declined Substantially without RFID Over the 13 Week Test Period

Source: University of Arkansas Study

As with the previous study, however, this effort was able to quantify the productivity improvements from RFID-based cycle counting, which was found to be some 96% faster than with bar coding. These efficiency gains would enable a retailer to perform cycle counts much more often (and much more accurately), further improving PI accuracy.

The report notes that for apparel, at least, the presumed progression may be reversed – item-level tagging may actually drive case and pallet level tagging, or even serve as a proxy for tagging at that level, rather than the general expected paradigm that first pallets would be tagged, then cases, then units.

The full report is available here: **Bloomingdale's Item -Level RFID Test**.