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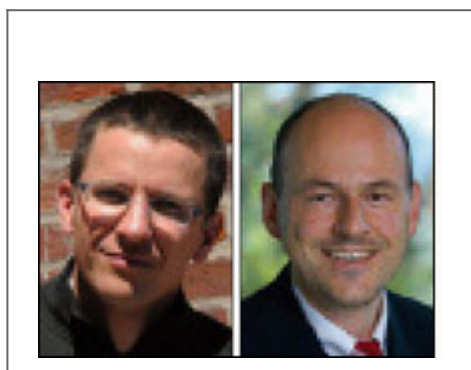
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## RFID's Untapped Potential

Many RFID pilots have proved that the technology can increase supply-chain visibility as well as optimize processes, but few studies have investigated the potential benefits to be derived from analyzing large amounts of RFID data. The Auto-ID Lab St. Gallen, in Zurich, analyzed item-level Electronic Product Code (EPC) data gathered during a retail apparel RFID trial, conducted from September 2007 to December 2008, at a Metro

Group menswear department store in Germany.

During the trial, more than 150,000 tagged items were tracked by 60 RFID readers using 200 antennas installed on the sales floors and in the back rooms, at the escalators and elevators, on several shelves and in all 20 fitting rooms. The EPC RFID data was stored in an EPC Information Services (EPCIS) database.



We combined the EPC RFID data with point-of-sale (POS) data and information, such as item color, size and style, from the store's merchandise-management system. Then we analyzed all the data, which revealed unprecedented insights into the department store's processes and customer behavior, and exemplified the potential benefits retailers could get from such analyses. Here are the highlights of our findings:

**Inventory visibility:** Retailers can better distinguish between actual stockouts and in-stock items that are not available on the shelves.

**Process execution:** Tracking the movement of merchandise throughout the store can reveal unknown inefficiencies.

**Product misplacement:** Retailers can more easily identify merchandise that is located at the wrong display fixtures. The duration of misplacements also can be measured, so retailers can improve sales-floor tidying processes.

**Merchandising:** Retailers can determine how long items stay on the sales floor. Merchandise that isn't selling can be put on

sale and not be reordered. Retailers also can learn which items customers try on together, so they can keep those brands in stock, reducing inventory complexity.

**Store layout:** By identifying the clothing tried on in particular fitting rooms, retailers can optimize product placement, particularly at the front of the store, increasing sales and customer satisfaction.

**Staff allocation:** By comparing the apparel customers try on with subsequent sales, retailers can determine the number of employees needed on the sales floor.

The study has shown that analyzing aggregated retail data could have a big impact on a department store's management. Since preconfigured software packages for retail applications do not exist, our analyses were conducted using standard statistics tools.

While employing RFID to improve processes is important, our research shows the technology's biggest potential lies in data analytics, improving our understanding of the processes themselves.

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