PLAYING NEXT-GEN TAG

Levi Strauss takes on wayward inventory with RFID trial

by M.V. GREENE

Associates at the Levi Strauss & Co.'s Levi's Plaza headquarters store in San Francisco are on the hunt. The targets of the search are wayward items of merchandise — maybe a pair of jeans discarded in a dressing room or a jacket misplaced on a rack of graphic tees.

While some apparel departments and specialty stores can be a ball of confusion during peak times with product everywhere, Levi Strauss is tapping into the next generation of a stalwart retail technology to keep things in place. After all, customers can't buy what they can't find.

Keeping tabs on inventory is essential for a good customer experience, says Stacey Shulman, Levi Strauss vice president of global technologies. Shoppers "invested their time to walk into our store, and we just simply don't want to let them down."

This could take the form of a shopper wanting to purchase a sweater — say, an XL in navy blue — but his size is scattered somewhere around the store rather than on the correct rack or table.

Levi's solution is to try to know where everything is, all the time.

To assure that kind of item-level visibility, the company recently teamed with Intel Corp. on an ambitious proof-of-concept program. Every item in the Levi's Plaza store and two others in the San Francisco area have radio frequency identification tags — literally thousands of items of inventory.

REAL-TIME KNOWLEDGE

Retailers have used RFID to track inventory over many generations and product cycles, but it has had its ups and downs. RFID processes have been enhanced, and observers believe it has the potential to be more effective for tracking items because of its ability to generate and quickly analyze data.

The Levi Strauss RFID initiative, which launched last September, leverages Intel's Internet of Things Gateways platform to produce cloud-based analytics in near real-time, allowing store associates and managers to know precisely what is on store shelves at any given time.

Daniel Gutwein, Intel director of retail analytics and the IoT group, says RFID can solve a lot of store inventory issues, but few retailers push the limits of the technology to address specific solutions like on-shelf product availability.

U.K. market research and business intel-

For associates and managers at the three test stores, data from the RFID system creates sets of actions and prioritizes tasks. "The idea is that we will be pushing actions to the associate," Shulman says. "An example of that is an item that is out of place. It can show it's been out of place for the last 30 minutes, and there isn't a like item over on the shelf."

In this case, the system alerts an associate to retrieve the item and put it back where it belongs; the 30-minute threshold takes into account that a customer might be walking around with the item before purchase.

Shulman says in the few months since the pilot launched, stores have achieved near 100-percent accuracy in locating items. She is particularly pleased with what she calls the "granular" analytics data that is being generated, which leads to specific prioritization of tasks.

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MOVEMENT DETECTION

Traditionally retailers have performed inventory with handheld RFID-enabled devices such as wands or hand readers; Intel's approach is designed as an Ethernet-based plug-and-play device connected to the Intel Gateway, which essentially is a computer processor that manages the sensors.

Leveraging its roots as a chipmaker, Intel sought to solve cost, installation, transmission and calibration issues associated with RFID deployments. The company expects to announce enhancements to its IoT Gateways platform, including the use of a video component for generating store analytics data, at NRF's BIG Show this month.

A sensor-based system of deploying RFID has an inherent advantage because it is always on, rather than being used during specified intervals for cycle counting. Unlike wands,

ligence firm IDTechEx puts the value of the RFID market at $10.1 billion, up nearly 15 percent from 2013. It includes RFID tags, readers and software/services in its forecast, and expects the market's value to reach $13.2 billion in 2020.

PRIORITIZING TASKS

Within the Levi Strauss pilot, always-on, ultra-high frequency antenna-equipped RFID readers constantly scan the stores for tagged products, gathering and disseminating item-level data via the Intel sensors.

sensors also can detect the movement of items.

"These sensors are always reading and always broadcasting," Gutwein says. "You get very good read rates when you turn the system on. Any time something moves throughout the store you see it. Any time something leaves the store you see it. … It builds very quickly close to 100 percent inventory accuracy, and it maintains that."

Gutwein says the system can be designed to make inventory analytics data available in milliseconds at what he calls the "edge" of the network, giving stores the ability to make immediate decisions. Data not needed right away is stored in cloud networks.

The RFID system can enhance the replenishment process by ensuring that retailers have the appropriate product runs in the store and providing greater insight into the broader supply chain.

"The data is there," Gutwein says. "It's just a matter of taking that data and writing an application that provides you the insights you want to see."

FAVORABLE ROI

Shulman says Levi Strauss will undertake a formalized review of the concept this month and determine shortly thereafter "how to harden the solution and take it forward to other stores."

"Hardening the solution" refers to measuring how return-on-investment scenarios line up. ROI must show more than incremental revenue, says Chris Rommel, executive vice president of IoT and embedded technologies at VDC Research; it has historically has been an impediment to RFID scaling because companies could not justify the economics of the required infrastructure deployments.

"The promise of improved consumer engagement alone isn't going to make most retailers move," Rommel says. "It's too much of a pie-in-the-sky idea to drive near-term adoption and investment."

What is favorable about Levi Strauss's RFID program is that driving inventory improvements are considered a "cost savings calculus" in retail, he says.

"That use case has a lot more potential for actually driving investment, simply because having an optimized inventory and ensuring things are there when they need to be ultimately can be beneficial."

Rommel says retailers should view IoT-based RFID as a subset of a broader system within the context of a connected retail experience that may include emerging machine-to-machine technologies such as video analytics and Bluetooth tracking. "Ultimately, you have to look for where there is greater, clear-cut ROI." **STORES**

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