Solve Age-Old Inventory-Management Issues
With Intel, SAP, and the IoT

Common Inventory Challenges

- Item consideration
- Item identification
- Item location
- Item movement
- Item replenishment
- Inventory reconciliation
- Path mapping and optimization

Platforms built on Intel® hardware and on the SAP® Dynamic Edge Processing server help relieve long-standing retail headaches

At a worldwide apparel chain, corporate employees and store managers have struggled with inventory management since the first brick-and-mortar store opened its doors almost sixty years ago.[1] The chain prides itself on customer satisfaction and retention, so the company has made a push to modernize its infrastructure through better business intelligence (BI), cloud technologies, and in-memory analytics.

This modernization has helped the retailer generate more innovative ideas and trend-setting products, but there is a large disconnect between its corporate systems and its physical stores. Until recently, technology wasn't sophisticated enough to integrate a store's point-of-sale (POS) systems into the company's IT infrastructure. Thanks to the Internet of Things (IoT), retailers have a chance to finally bridge that gap.

With the Intel® Retail Sensor Platform (Intel® RSP), combined with SAP® Dynamic Edge Processing and the SAP HANA® platform, the global apparel chain can streamline, simplify, and secure the data that passes from stores to the corporate headquarters.

From Core to Edge

By centralizing every channel—web, mobile, and store-side—and integrating the data from those channels, retailers can make their operations smarter, alleviating inventory-based issues and passing the benefits onto the customer. This is accomplished by using a real-time sensor network that tracks goods continuously within the store. Edge processing integrates the inventory, movement, and tracking of these goods continuously, while integration with business processes at the core drives actions that deliver actionable insights.

How It Works

The Intel® technology–based sensors collect data from the radio-frequency identification (RFID) tags that are attached to each in-store item. The Intel® IoT Gateway locates, configures, and interacts with the sensors, funneling the data from the RFID tags into the edge computing platform.

SAP Dynamic Edge Processing provides a secure, managed platform at the edge to bridge Intel's sensor data with SAP's business data. It simplifies common IoT processing patterns such as issuing restock alerts based upon inventory levels. It also extends the digital core to the retail store. This allows retailers to take actions, like goods-receipt-posting, in real time on in-store devices (such as Intel processor–based tablets, smart phones, or wearables) running merchandising apps.

Figure 1. By digitizing inventory data, you can access a wide variety of retail use cases, such as the ones showcased in this Smart Inventory* demonstration dashboard

Data and insights do not stop at the edge. BI insights that are captured at the store are also sent to the digital core, where SAP HANA aggregates all store operations and provides efficient in-memory processing for further in-depth analysis.
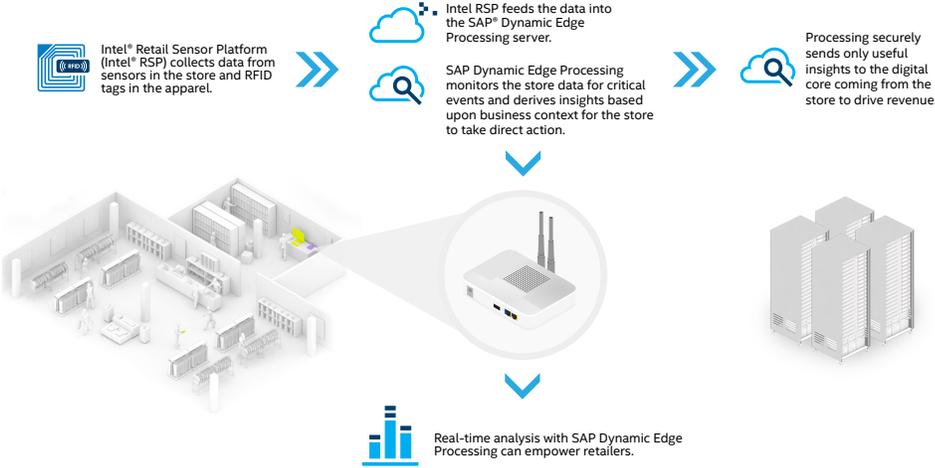
RETAIL PLATFORM COMPONENTS AND COMMUNICATION FLOW

Figure 2. Data is collected at sensors and is then processed at the edge and on the SAP HANA® platform to provide actionable insights in the store

With that information right at their fingertips, retailers can:

- Provide superior customer service by knowing exactly what products are where
- Enhance associate productivity with automated receiving
- Detect item shrink quicker and more accurately than with cycle counting
- Drive real-time requests to restock shelves
- Optimize check-out wait times

How It Helps

Intel RSP is simple to install and easy to manage, and its benefits in conjunction with SAP Dynamic Edge Processing can have a wide-reaching effect on the global apparel chain, especially around customer experience and inventory management.

Total Inventory Insight

Starting as a clerk in a store and working their way up to senior IT manager at corporate headquarters, Parminder has worked at the global apparel chain for a long time.[1] Parminder's career has been plagued with inventory-management problems, no matter the position within the apparel supply chain. The pitfalls of not knowing what's on the floor or in the back, or not having the correct sizes or colors, can easily cost the chain business.

Parminder knows that as Internet sales increase, brick-and-mortar stores need a way to differentiate themselves from online stores. Physical storefronts not only offer customers a more tactile shopping experience, but they also provide instant gratification, versus having to wait for a shipment to arrive.

If Parminder's company had an IoT solution like Intel RSP and the SAP Dynamic Edge Processing platform, Parminder knows that the company would be able to increase sales by up to 11 percent if its brick-and-mortar stores carried the exact items that customers were seeking.[2] By integrating the chain's customer-facing app into the retail platform, customers would be able to see what's in stock and even know where the product is located within the store before they step inside.

Always Stay Stocked

Shiloh, a regional manager, is in charge of which styles and sizes of apparel to keep stocked in the region's brick-and-mortar stores.[1] Shiloh wants more insight into the sales trends to better ensure that stores are stocked with the items that they sell the most.

With visualized inventory trends and stock levels right on the store's computer, Shiloh can keep the right products, in the right sizes and colors, on the shelves. Intel RSP can help reduce the time spent counting and tracking inventory, giving sales associates more time, more information, and more of the right merchandise to give customers the best shopping experience. These insights help Shiloh direct staff to optimize shelf space, avoid stock outages, and give customers a better, more reliable in-store experience.

Better yet, Intel RSP delivers nearly 100-percent inventory accuracy by automating inventory management.[3] When stock levels get low, Intel RSP and SAP Dynamic Edge Processing enable stores to automate reordering and receiving.

No More Hide and Seek

Assistant store manager Ashley works at a local mall and often feels like a detective, hunting down missing inventory.[1] Ashley struggles to account for stock at any given time because staff and customers are constantly moving items around. What's more, Ashley is concerned that some items might be going home with sales-floor associates.

With Intel RSP installed in the store, Ashley can track missing or misplaced merchandise in near real time, right on an Intel processor–based tablet. SAP Dynamic Edge Processing can correlate POS-system data with inventory data, so Ashley gets the tightest control over inventory that the store has ever had.

Read More

Intel® RSP: *intel.com/retail*

SAP solutions for IoT:
sap.com/iot

SAP HANA®: *saphana.com*

Read more about Intel and SAP's IoT: *intel.com/content/www/us/en/big-data/intel-sap-iot-solution-brief.html*

Intel and SAP Do IoT Right

Intel chose to collaborate with SAP on Intel RSP because of SAP's proven leadership in inventory-management and merchandising-management technology. SAP Dynamic Edge Processing draws on Intel's hardware and architectural prowess to turn IoT data from Intel RSP into actionable, cohesive insight for retailers.

With Intel RSP hardware and SAP Dynamic Edge Processing, retailers get a smart, more secure solution for their inventory-management woes; and stores can track the items that keep customers coming back and deliver the best customer experiences.

[1] The company and company employees mentioned in this paper are fictional. Any correlation to a real company or person is coincidental.

[2] Intel, Internet of Business, Beecham Research. "The Future of Retail through the Internet of Things." June 2016. *https://www-ssl.intel.com/content/dam/www/public/us/en/documents/white-papers/future-retail-through-iot-paper.pdf*.

[3] Intel. "Increasing Profitability for Brick-and-Mortar Retailers." December 2015. *https://www-ssl.intel.com/content/www/us/en/retail/solutions/documents/retail-sensor-platform-paper.html*.

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