RFID IMPROVES SUPPLY CHAIN OPERATIONS

Supply chains are increasingly dynamic, customer-centric and demand-driven. Maximizing efficiency at each node of the supply network is more important than ever to meet customer expectations and market demands while preserving profitability. Optimizing DC inventory allocation and logistics processes with RFID provides the increased efficiency and data analytics for supply chain leaders to adapt to changing requirements.

FLEXIBLE SUPPLY NETWORKS REQUIRE REAL-TIME VISIBILITY

Consider the costs and risks of not investing (in sensor and automatic identification technology). These technologies can have a positive impact on customer service and loyalty by improving supply chain visibility. Visibility leads to improved fill rates and greater transparency. Companies that fall behind their competitors could find their customer accounts at risk.


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RFID SOURCE TAGGING IS ON THE RISE

As RFID gains momentum in retail, more retailers are working with suppliers to tag and encode merchandise at source manufacturing, to provide more data on inventory movements earlier in the value chain.

RFID RETAILER ADOPTION IS IMPACTING SUPPLIERS

Over 40% of US Apparel Retailers are using RFID in some form – and the number is expected to increase in 2016.

– Dr. Bill Hardgrave, Auburn University
GS1 Connect June 2016

Over 40% of Apparel Brands are Source Tagging with RFID for some categories & retail partners -- it is the new requirement for omni-channel operations.

– GS1 US CEO Bob Carpenter
GS1 Connect June 2016

“RFID-enabled visibility into inventory across the supply chain also can help curb excess buying. Knowing where your inventory is — at the stores, at the DC, in transit — improves overall efficiency. If stores don’t have that inventory accuracy, they’re often over-ordering. If they don’t know where the stock is, they add to their safety stock. To the extent you have visibility into the supply chain, you can avoid that issue, and you can get to that inventory more quickly.”

— Robert Eastman, Research Director, IDC Retail Insights, quoted in Apparel Magazine March 2016.
Many retailers are implementing RFID to improve customer-facing logistics processes such as omni-channel order fulfilment speed and accuracy in DCs and in flagship stores.

6 WAYS THAT RFID AUTOMATION IMPROVES OMNICHANNEL FULFILLMENT

1. **Improving order accuracy**: Automatically verify each item as it is picked for an order and do not pick or reserve the item unless it is an exact match.

2. **Improving fulfillment speed**: Provide the exact location for each item (including RFID-tagged items that may be in the back room, fitting room or promotional display) along with an image and description.

3. **Leveraging in-store mobile devices and task management**: Turn pick and pack activities from less of a scheduled chore into a mobile “game” where they can receive credit for a completed task, using tools they are already familiar with.

4. **Increasing visibility for all merchandise in the store, including items with barcodes**: Provide general location and reserves lower-velocity or specialized items which may not carry RFID tags.

5. **Reduced training**: Deploy solutions that are easily used by new store associates, temporary and seasonal help during peak selling times.

6. **Improving operational efficiency**: Less time spent on logistical tasks frees up sales associates to spend more time assisting shoppers.

“RFID technology can be integrated with workforce task management tools to guide employees down the most efficient path for picking an omni-channel order. This applies to teams in stores as well as central distribution centers (DCs). “If you deploy RFID in the DC, it means you’re picking orders faster, and you’re picking them more accurately”

— Robert Eastman, Research Director, IDC Retail Insights, quoted in Apparel Magazine March 2016.
Automating a distribution center can be time and capital intensive. Many organizations are looking at making existing DC infrastructure “smarter” with the use of sensors. The following diagram illustrates key work processes that can benefit from IoT sensor data.
One of the most obvious applications for RFID is to confirm that the physical contents of a shipment match the information on the shipping manifest or Advanced Shipping Notice (ASN). Ensuring that inbound shipments are correct (and that exceptions are flagged and resolved promptly) can significantly reduce inventory and compliance errors downstream. According to a 2011 Auburn study, 5.8% of ASNs have errors.

"Achieving 100% ASN accuracy is essential but has proven to be elusive for suppliers. The structure of the ASN must conform to the specific information requirements of individual retailers. Also, the data must correctly depict the actual contents of the shipment."

– Facilitating Supply Chain Visibility & Accuracy
An Analysis of ASN Benchmarks and Best Practices – Auburn University 2011
RFID IN THE RETAIL SUPPLY CHAIN

The most common use of the Internet of Things in the retail supply chain is RFID and RTLS sensors. According to a 2015 ChainLink Research Study, the most common applications in store and in the supply chain are linked to store remodels (where RFID-EAS infrastructure is installed at point of sale and point of exit), inventory management, Omni-channel operations (where RFID is used to speed order fulfillment), On-shelf availability and Customer Service. In the supply chain, RFID is increasingly being used for electronic proof of delivery and for tracking merchandise from point of manufacture.

“Armed with more accurate (RFID) inventory visibility, some retailers are holding back 30 percent to 50 percent of seasonal merchandise at their DCs, waiting to see what sizes are selling in which locations before they fully execute their allocation plan. When you have more accurate inventory numbers, then you can do a better job of positioning inventory where it’s needed and do markdowns at the right pace to optimize profit,”

– Bill McBeath, Chief Research Officer
ChainLink Research.
RFID handheld scanning is 25 times faster than barcode scanning. New developments in RFID hardware, software and labels are enabling accurate high-speed scanning methods that meet the needs of high volume DCs.

“Item-level RFID implementation breaks through traditional manual procedures to get product into the hands of consumers faster. Aside from cost savings due to efficiency, inventory visibility via item level RFID has the potential to significantly boost sales.”

– Melanie Nuce, Vice President of Apparel and General Merchandise

GS1 US
As RFID technology becomes more prevalent in the supply chain and higher volumes of tags are in circulation, standards are emerging, tag costs are decreasing, and tag selection is becoming faster and simpler. Here are a few considerations when evaluating RFID tags.

### CONSIDERATIONS FOR RFID TAG SELECTION

#### What’s Being Tagged?

- Consider “off the shelf” tags that are already tested for use on specific materials (e.g., GS1 Category M tags which are certified for a wide range of apparel and footwear)
- Does it have a barcode or loss prevention device? How is it attached? Can it serve a dual purpose?

#### Where is it Being Tracked?

- Densely-packed merchandise (e.g. Accessories or Cosmetics on peg hooks) may require short read ranges
- Cartons in DCs may require long read ranges – transport containers may require weatherproof tags

#### How are You Tagging and Encoding Items?

- High Volumes of items in DCs or Source Manufacturing may be tagged in bulk, using conveyor tunnels, commissioning tables
- Printers and Handhelds may be used for low volume applications
- Consider pre-encoded tags or tagging services to outsource the process
- Use Enterprise Number Management to prevent data errors

#### How Much Do Tags Cost?

- Passive RFID tags cost less than 10 cents at high volumes
- RTLS (always on) tags can cost $30 or more – generally used for high theft applications
- Consider combining RFID/Barcode/LP tags to free up RFID budget for training, systems integration, professional services that will save money in the long run

#### How to Decide on the Right Tag?

- Narrow down short list based on business case and pre-certified tags by product category
- Consider standardizing on a few tags to simplify sourcing and testing
- Deciding on a standard provides more flexibility than selecting a specific tag, and mitigates the risk of using a single vendor
ABOUT CHECKPOINT SYSTEMS

Checkpoint Systems is the global RFID deployment leader, with the most supply chain and retail deployments across formats, functions and geographies.

Checkpoint provides source-to-shopper automation solutions enabling retailers to increase on-shelf availability, streamline omni-channel operations, improve asset protection and gain new insights on inventory movements and shopper behavior. Checkpoint is a division of CCL Industries Inc. (TSX: CCL.A, CCL.B), with global operations on six continents and over 19,000 employees.

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