

# Five Frequently Asked Questions about **RFID**

Adoption of RFID in the apparel industry is on the upswing, but confusion about the technology remains. It's time to set the record straight about RFID reliability, read rates, cost and more.



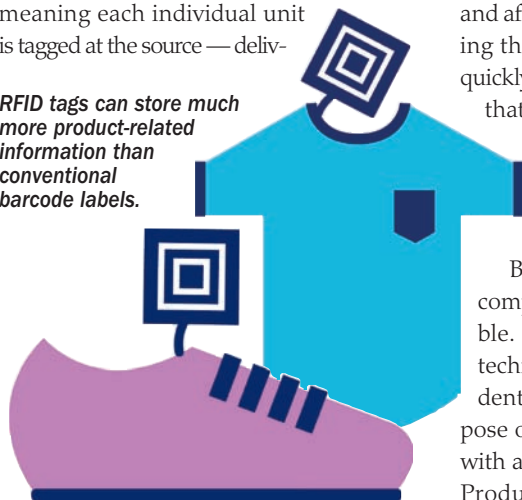
In recent months, there has been an unprecedented amount of positive discussion around the use of Radio Frequency Identification (RFID) in the retail industry. RFID is valuable because it helps retailers understand two inventory essentials for omnichannel success — “what do I have?” and “where is it located?” However, there remain many misconceptions about the technology, its use case feasibility and its return on investment. It's time to set the record straight and provide some definitive answers to the retail industry's most common questions about RFID.

## Is RFID technology reliable?

Yes, and there are a variety of time-tested data and use cases to support its reliability. Some of the first recorded uses of RFID technology date back to World War II, as part of military operations in the 1940s. Over the years, RFID technology has found its way into our daily lives, controlling everything from building access and security, to toll collection, to automotive ignition switches to retail payment options.

In the retail sector, item-level Electronic Product Code (EPC®)-enabled RFID — meaning each individual unit is tagged at the source — deliv-

*RFID tags can store much more product-related information than conventional barcode labels.*



ers substantial benefits to retailers, brand owners, logistics suppliers and other supply chain trading partners. It can be used to automate processes, record item locations, identify objects and provide network-wide inventory visibility and accuracy.

Since 2008, many leading retailers have been strategically deploying item-level RFID, and its effectiveness has been tested and proven in several types of use cases. These RFID deployments were made possible by recent technological advancements that resulted in more powerful, stable and affordable equipment solutions. Finding that the technology can be deployed quickly and reliably, retailers have reported that their pilot programs have resulted in increased inventory accuracy.

## Will RFID replace the barcode?

Barcode and RFID technologies are complementary and can be interoperable. It is not an “either/or” choice. The technology use case for RFID is dependent on its application. The single purpose of a barcode is to provide a product with an identification code — a Universal Product Code (U.P.C), also known as a

Global Trade Item Number® (GTIN®). RFID can do this and more, providing enhanced inventory visibility.

RFID offers physical advantages over barcodes. For example, many RFID tags can be read almost simultaneously, making them a good choice for counting large quantities of items quickly, and with little to no human intervention. RFID tags can also store much more product-related information than conventional barcode labels (e.g. country of origin, production date, materials used). This information is stored in the embedded memory of the RFID tag, which can hold up to 2KB of data. RFID tags can also be programmed and reprogrammed, while barcodes, once printed, cannot be updated when information changes.

RFID puts another set of tools in a company's automatic identification and data capture (AIDC) toolbox and gives them flexibility to choose, based on how the technology is being used. The same GS1 identification and data exchange standards are supported by both technologies, so businesses are free to use what's right for their applications without needing to support separate data systems. ▶

# VENDOR VIEWPOINT

*Sarath Chandershaker, Vice President and General Manager of Merchandise Visibility and RFID, Checkpoint*



**Apparel: What is the biggest myth about the RFID implementations in apparel?**

**CHANDERSHAKER:** That they all have the same business goals. RFID is an enabling technology, and while many of the first RFID implementations in apparel had on-shelf availability or display compliance as the end goal, we're seeing nearly as many different business drivers for RFID as there are apparel business models. For instance, fashion retailers are less concerned with shelf availability than customer experience and speed to market. Every retailer is increasingly concerned about omnichannel operations such as order fulfillment, store-to-store transfers or exposing inventory data to customers through mobile apps. If I can add a second myth to the list, it would be that RFID implementations are about tags, readers and software. They are ultimately about process improvement and operational agility. We spend more time informing business processes with real-time data and fine-tuning those processes to facilitate process improvement than we spend installing hardware, software and implementing source-tagging programs.

**Apparel: Why is RFID critical to support omnichannel programs in terms of distribution, visibility, accuracy and inventory control?**

**CHANDERSHAKER:** There's a great deal of competitive pressure for brick-and-mortar retailers to offer omnichannel services such as ship to store, search in store and no-hassle returns. In practice, it's easier for retailers to launch these services than to set up store operations to deliver them consistently. A customer of ours summed it up nicely at a recent visit: "My store managers are great salespeople — operations people, not so much." Ship-to-store and ship-from-store services basically turn stores into mini DCs, which is difficult to pull off chain-wide. When retailers provide a "search-in-store" function, they are basically setting an expectation that any item can be found anywhere. All of these services require RFID to support real-time inventory accuracy, and to automate fulfillment operations.

But RFID doesn't have to be omnipresent to support omnichannel processes. As more logistics responsibility shifts to stores, we've had success helping retailers shift other responsibilities to DCs, such as source tagging, automated verification of vendor deliveries and automating pick-and-pack processes for store shipments. These processes drive inventory accuracy from the start of the fulfillment process. Automating inventory compliance in store completes the picture, but that topic could fill the contents of an entire article in itself.

**Apparel: Inditex, one of the world's top five specialty apparel retailers, recently announced that Checkpoint was selected for RFID implementations in their distribution centers. What can you tell us about the project?**

**CHANDERSHAKER:** Inditex released details of their RFID implementation in distribution centers in September. Checkpoint is providing the item-level encoding solution of RFID labels at Inditex

distribution centers for garments in boxes, pallets and hanging items at a speed in line with Inditex's logistics needs. The solution also enables Inditex to automate the sending of garments from the distribution centers to the stores (as of September 2014, more than 700 Zara stores in 22 countries), avoiding any possible packing mistakes in quantity, model, size or color.

**Apparel: We are seeing more retailers deploy RFID for DC operations. What does this mean for the broader market?**

**CHANDERSHAKER:** It's certainly a sign that the RFID market is maturing from point solutions to providing source-to-shopper visibility for day-to-day retail operations. What other retailers can take from this is that process improvement from the source, either from source manufacturing or DCs, has a direct impact on enhancing the shopper experience. Making sure that each store has the correct assortment of merchandise available for sale and that each store can easily locate relevant merchandise to fulfill a customer request is much simpler to execute when items are tagged and encoded before they even reach the store.

**Apparel: Moving beyond loss prevention and inventory control, how will RFID be best leveraged by the leaders in the next 12 to 24 months and can smaller retailers and brands adopt similar practices in appropriate scale?**

**CHANDERSHAKER:** Apparel retail is perhaps more personal, and customer-centric, than any other retail format, so it should be no surprise that RFID and related sensors in store (we are device agnostic) will be a key component of enhancing the customer experience. We see it with beacons and interactive fitting rooms today and it will continue to evolve. The other side to sensors, of course, is big data. Sensor data will enable brick-and-mortar retailers to have the same level of data at their fingertips as online retailers do. By integrating customer loyalty data and transaction data with visitor data, location, path and inventory data, brick-and-mortar retailers will have new insight on shopper preferences, buying habits, dwell time, paths to purchase — the possibilities are pretty much endless. So the faster retailers adopt RFID, the more quickly they can start collecting sensor data in stores, and the more real-time information they will have to sense, respond and anticipate customer needs.

Smaller retailers can benefit equally from this data; in fact, smaller retailers are more likely to adopt new technologies because they can test and roll out these innovations on a smaller scale. For one of our fast-growing retail customers, nearly half of their sales come from mobile orders. They continue to innovate in IT as well as operations to serve their millennial and Gen Y customer base. We are also seeing a "trickle-down effect" for brands, which are being asked to tag their merchandise for RFID retail deployments. We are helping them put source-tagging programs in place and leverage the data from RFID-tagged merchandise to learn more about their supply chain and logistics processes.

*Vendor Viewpoint is a regular Apparel advertorial feature.*

## Will I have 100 percent read rates on every item, every time I read my RFID tags?

Read rates are close to 100 percent. Using RFID, read rates can be improved from an average of 63 percent to between 95 percent and 99 percent, according to University of Arkansas studies. This means a retailer is now able to see 33 percent more of its inventory, which was previously invisible!

Why haven't we been able to achieve 100 percent yet? There are many factors that affect RFID tag read rates — the distance between the tag and the reader, the substance the tag is placed on, as well as the tag orientation and design. Good engineering and system design will increase the read rate of tags and some procedures may have to be altered to obtain acceptable read rates. Industry collaboration is also helping retailers and their trading partners better understand implementation challenges and overcome them.

## Is it true that deploying RFID takes a lot of capital?

Not necessarily — the cost to deploy RFID varies depending on the type of solution being deployed. An RFID solution can be as simple as a single standalone handheld reader, or as complex as a fully integrated system with fixed infrastructure at doors and on fixtures. Operationally, a basic RFID system typically includes labels, printer/encoders, interrogators, middleware and software to handle RFID-generated data. Further, technology providers offer RFID solutions as a direct sale, turnkey and/or as third-party hosted solutions, which can be purchased or leased.

From an IT perspective, simple solutions are typically run as standalone implementations, with limited integration into a company's legacy infrastructure. In these deployments, RFID equipment is either part of a standalone or cloud-based server. EPC-enabled RFID IT integration is made simpler by the fact that it uses the same product identifier as a company's point-of-sale (POS), inventory and transactional systems. As that data is already under-



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stood and processed by these incumbent systems, leveraging it and extending it to a company's RFID implementation means that the company's logistics, IT and/or operations teams do not need to start over when adding in an RFID implementation solution.

ROI is delivered in the form of better quality data — reduced handling errors, improved labor productivity and faster inventory counting and higher level of customer satisfaction when you are able to assure the right goods are sent where they should be.

## What is the connection between RFID and omnichannel retailing?

Executives at leading retailers have expressed their support of EPC-enabled RFID technology as the foundation for creating a successful omnichannel strategy. A growing number of retailers have RFID programs in place to help deliver a homogeneous customer experience across all channels.

RFID technology helps retailers and brands forecast trends more accurately, collaborate with global trading partners more efficiently and improve inventory management. A recent Capgemini Consulting and GS1 US omnichannel retail study, "How to Create an Always-On, Always-Open Shopping Experience," revealed retailers' attitudes about EPC-enabled RFID. Executives from leading companies stated RFID is the enabler of the real-time inventory accuracy they need to respond to consumer expectations. Dan Smith, CIO of Hudson's Bay Company, captured the value of RFID to a retailer by saying: "Without RFID, a retailer is able to sell an item online, but, subsequently, [may be] unable to fulfill an order, because it cannot be found in

the store, because either the inventory is inaccurate or [it] is too hard to find the specific item on the floor."

Ultimately, when items are tagged at the point of manufacture or at the earliest point in their lifecycle, companies see benefits throughout the supply chain. From the supplier's side, this saves untold labor hours, reduces overall costs and can even allow for faster payment. From the retailer's perspective, EPC-enabled RFID is simply the foundation for actionable intelligence. If you can't "see" something, you can't measure it. If you can't measure it, you can't control it. If you can't control it, then it's probably costing your business too much money.

Retailers that truly understand the benefits of inventory visibility have the ability to move every last item and at higher margins. In stark contrast to the traditional "everything must go" clearance rack method of moving inventory, item-level visibility helps the retailer make successful matches between their product offerings and consumers, regardless of channel.

The bottom line: it's time to take advantage of the tools available right now to efficiently locate an item and put it into the hands of the consumer. ■



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