By Mindy Long

Portable readers, lower prices and improved technology have led to increased use of RFID for managing inventory at the item level, tracking goods in the manufacturing process and enhancing the consumer’s experience at retail.

Stephanie Brush, director of Motorola RFID business development for the fashion market, says, “RFID is becoming more mainstream, and it is becoming a work tool. In the last two or three years, people wanted to test the technology and make sure it worked. Now we know it works, so the question is, what problem can it solve for you?”

More and more retailers are relying on item-level tagging to address four key elements of inventory management: reducing out of stocks, improving inventory accuracy, locating product and preventing loss, according to Bill Hardgrave, executive director of the Information Technology Research Institute at the University of Arkansas, Fayetteville, Ark.

Sue Hutchinson, senior director of Lawrenceville, N.J.-based EPCglobal North America, a subsidiary of GS1 US, says she is seeing many more uses of RFID for asset management and for tracking work-in-process inventories than ever before. RFID is being used from raw-material tracking, through the manufacturing process, into the supply chain, and then into distribution centers and the stores themselves.

“One of the largest changes in the industry to make item-level tagging more efficient is the availability of mobile readers that can be taken throughout a store. “A few years ago, you bolted a device to the floor and that is where it stayed,” Hardgrave says.

Last year American Apparel, Los Angeles, began using RFID tags at the item level so employees could use fixed and mobile readers to track inventory on a real-time basis. With the technology, American Apparel’s weekly inventory process was reduced from four people in eight hours to two people in two hours. “In this economy it is important to be efficient,” Schaumburg, Ill.-based Motorola’s Brush says.

Walmart has said Sam’s Club, which sells items in bulk, will require RFID tags on all pallets by October 2009 and at the item level by October 2010. “We don’t think of it in terms of a mandate; we think of it in terms of a supplier requirement,” says John Simley, spokesman for Walmart.

“We are moving from smaller and smaller quantities,
Walmart’s Simley says some suppliers have said “they can’t bear the cost of it,” but at the same time has heard from suppliers who implemented RFID tagging without an issue and wished they had done so earlier.

The economy has divided companies into two distinctive groups — those who say they need to stop all capital expenditures and those who say now is the best time to utilize RFID, Hardgrave says. “We are seeing more companies saying now is a better time than ever to invest in a technology that can help us reduce costs, increase consumer satisfaction and grab market share from our competitors.”

Costs Coming Down
Given the size and significance of Walmart, those interviewed agreed that brands will have to comply. Mark Sapp, vice president of product development for mobile technology company InfoLogix, Hatboro, Pa., says smaller suppliers may not be able to recognize the economies of scale that larger companies will.

“Right now, the biggest challenge for suppliers is the cost and being able to match up an ROI,” he says. “I think you’re going to see a lot of companies entering the marketplace that help these suppliers get integrated, identify the ROI and streamline their business.”

Sue Hutchinson, senior director, EPCglobal North America

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Bill Hardgrave, executive director, Information Technology Research Institute at the University of Arkansas

Hutchinson says many organizations don’t realize how drastically prices have dropped in recent years on both tags and readers. Two years ago, passive tags cost $1 to $2 and today average around 10 cents. Active tags, which use a battery, cost between $5 and $50 depending on the strength of the battery. There is also new technology that allows readers to leverage Wi-Fi to tap into an existing network instead of running new cables, which reduces expenses. “One of the hurdles has been cost. But as we grow, the adoption and the technology becomes a commodity; the cost will go down,” Hardgrave says. Last year Intel released the R1000 chip, which is a substantial portion of the reader functionality of a single chip. That could enable a reader to be $390.” He added that the cost of readers ranges depending on their functionality.

RFID Advances

RFID can be used to track customer traffic, their interaction with displays and to download coupons. “Ideally the customer would have an identifier device, which could be placed in a mobile phone,” InfoLogix’ Sapp says. Brian Kirk, vice president of business development for NetworkIP, Austin, Texas, agrees and predicts 100% of mobile phones sold in 10 years will have RFID functionality.

“RFID is advancing beyond the normal tracking inventory-type solutions and is beginning to appear in advertisements — an RFID device built into a cell phone scans a movie poster and downloads info about the movie — and is being used for couponing — a consumer walks into a store and a store coupon appears on the mobile phone/RFID device,” Kirk says.

Sapp adds that companies are able to streamline business processes and workflows using RFID and several are starting to track employees. “The downside to that and to RFID in general is you have the big brother and privacy concerns. There is a delicate balance there,” he says. “There are ways around that, and a lot boils down to education.”

Both the retailers and brands are able to benefit from RFID and both are capturing information. “The retailer is going to capture as much information as possible for a myriad of things — inventory management and pricing information. There is an avenue whereby the retailer could take the data they have and turn around and sell it to the brands,” Sapp says.

“Most commonly, manufacturers will share data about shipments and inventory with their retail partners and those retail partners share data about the status of a manufacturer’s goods with that manufacturer once the retailer takes custody,” Hutchinson says.

Those interviewed agreed RFID tags will become the norm within the next five to 10 years and may eliminate the need for consumers to check out at a cash register. “I would love to see the time that you’re able to take your purchase and walk on out of the store legally and not have to walk up and stand in the line,” Hardgrave says. “I think that is three to five years away in grocery stores.”

“It is a real solution,” Walmart’s Simley adds. “You’ll be able to put everything in a cart and pass through a portal and walk out of a store. We don’t have a time frame — it means an alteration in the way that a store operates and it takes a lot of work.”

Hutchinson says, “Just like none of us really think about or acknowledge all the places that bar codes are used today, so it will be with RFID. RFID will become just another tool that businesses will use to improve their operations and how they serve their customers.”