



## Industry Week's **RFID Strategy**

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A S S O C I A T E S



### **What does 2005 Hold for RFID?**

*Look for smaller readers and increased automation  
in the tagging process*

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In previous columns I talked about the ratification of the Gen2 RFID standard and some of the challenges that still face the radio frequency identification industry in its quest to gain global acceptance. In this column I thought it would be interesting to talk a little about the evolution of RFID and what will happen in 2005.

The technology itself will continue to evolve and improve based upon the Gen2 specification; we can expect to see initial release of products based on Gen2 standards in the second quarter and production volumes late in the third quarter. For those companies that are considering RFID or facing a looming deadline, be sure the readers and other technology you purchase are guaranteed to be compatible with Gen2 via a firmware upgrade.

The recent announcement of successful production and testing of a reader the size of a dime opens the possibility of "mesh" networks of readers in a facility or within anything mobile in nature. The concept of a mesh network is very similar to a wireless network for handheld bar code scanners - enough RFID readers deployed throughout a facility to maintain constant visibility of each RFID tag at all times. An interim step definitely will be a reduction in the size of handheld readers as a result of this breakthrough.

One of the drawbacks with current readers is that you must take the product (with an RFID label attached) to the reader portal for data capture. However, with a mesh RFID network in a facility (along conveyors, in pallet and cantilever racking, attached to walls and floors at periodic intervals, or even attached to fork lifts and inside trailers), you would immediately eliminate choke points -- specific physical RFID scan tunnels that all tagged product must flow through -- in your process and have "always on" real-time visibility of inventory. By eliminating these physical choke points you have much more flexibility in the placement of processing areas throughout your facility. You can optimize material flow without having to route everything through a scan tunnel to read the RFID tags.

#### **Process Evolution**

Let's talk about how those manufacturing and warehouse processes will evolve in 2005. Just under two-thirds of Wal-Mart suppliers are using a manual "slap-and-ship" method for applying RFID tags on cases bound for Wal-Mart. Slap and ship is simply applying RFID tags (typically Class 0) in conjunction with SSCC (Serialized Shipping Container Code) labels as those Wal-Mart specific cases are prepared for shipment. The balance of suppliers is using some type of conveyor, in-line labeler and automatic palletization for their RFID shipments.

I believe this year we will see these Wal-Mart suppliers and other early adopters begin the

process of looking beyond simple customer compliance and determining how to leverage their RFID investment for internal benefit. As the volume of a company's cases tagged with RFID tags tops 40%, most companies will strongly consider moving to higher levels of automation in their tagging process. This may involve putting an automated labeling line within the warehouse or moving the tagging back upstream to the various manufacturing lines at the time of finished-goods packaging. This move will allow staff reductions as the volume of shipments justifies the investment in automation.

Tag application aside, we'll begin to see more pilots aimed at driving internal efficiencies in manufacturing. Companies will deploy RFID tags to track raw materials and work in process, automate system transactions in manufacturing execution systems and enterprise resource planning systems, and improve customer satisfaction by providing real-time order status. In pharmaceutical manufacturing, we'll see greater deployment of passive tags on product bound for Wal-Mart and the U.S. Department of Defense, as well as throughout the pharmaceutical supply chain, to reduce product diversion to grey market channels.

What we probably won't see in 2005 is a significant decrease in the cost of RFID tags except in very high-volume purchases. I believe the manufacturing yields on Gen2 tags will be lower than expected, which may cause market shortages for companies wanting Gen2 tags near the end of 2005. And finally, we won't see the end of consumer advocacy groups' claims that RFID tags will be used to track our every movement and report back to "big brother."

It will be interesting to watch RFID evolve in 2005. It took bar codes nearly two decades to gain true acceptance; hopefully, we have learned from that process and can get RFID to become a mainstream technology slightly faster.

**\*Chris York's RFID column appears twice monthly in IndustryWeek's RFID Strategy newsletter and on IndustryWeek.com. Click [here](#) to register for the newsletter.**