

# RADIO FREQUENCY ID

## FIRST TECHNOLOGY TO HELP CONVERGE THE SUPPLY-AND-DEMAND CHAINS



by John Rossi

**R**adio frequency identification or RFID may have come a long way since it was used as a “friend or foe” beacon during World War II, or when it was used for smart pallets in the warehouse, but it is taking a convergence of events to make it mainstream. With a combination of major players finally driving down the price of the transponders, or tags, some innovative uses and our 30-year-old bar coding system feeling its age, RFID throughout the supply-and-demand chains is finally reaching its potential. Sometimes good things take a long time. Everyone remembers when ISDN meant “I still don’t know” and now we have its cousin offering us high-speed Internet in our homes for \$30 to \$40 a month. RFID is starting to make business and economic sense and its applications are becoming widespread.

Although one-off transponders are still expensive, a few high-profile purchases have been in the 10 cents per tag range. The average purchase now resides around 30 cents per tag. Couple this with sub-\$200 readers and the price is becoming very affordable for early adopters.

### Unique Uses for RFID

A few years ago using bar coding on your uniforms and linens was a tremendous improvement in labor and costs. Now some hotels are replacing those bar codes with RFID. Why? It can be better, faster, cheaper, safer and easier. The premise is that bar coded items require individual counts; flattening the fabric to be read; hopefully the scanner reads the bar code on the first try. The bar codes need replacing every one to two years, well before the garment wears out.

Now with RFID a casino can count everything at once in the bushel, bin or basket. Depending on the reader, they automatically and affordably read the items from 10 centimeters to a few feet. The RFID tags are expected to last at least five years; and by the way, the tags provide near 100 percent accuracy in reading. Initial pilots provided a range from 1 in 5,000 to 1 in 10,000 errors during a typical read. This incredible accuracy requires very little human intervention. During this study, there was a .01 percent discrepancy between cleaning contractor charges and the delivery report on 4,000 to 5,000 garments cleaned daily.

Hard dollar savings is the key. Hotels can save thousands of dollars in labor vs. the time it takes to affix, read and replace bar coded items. In addition, with an industry average of 20 percent garment replacement, a casino saw this reduced to 7 percent. Do the math for your organization.

This can work in retail space as well. Benetton and Prada are piloting RFID for their products from a retailing, loyalty and manufacturing perspective. They are using RFID tags to assist with the authentication of their merchandise. The smart tags embedded in their merchandise reduce the likelihood that counterfeit merchandise is being sold, or more importantly returned. These tagged items can be traced throughout the store, even the dressing rooms, to assist their custom-

ers throughout the retailing experience. Intelligent kiosks strategically placed in the store and dressing rooms will recommend complementary products, product information or alternative colors. Since the items are individually tagged, they can track these items throughout the inventory and order fulfillment processes. This is a great example of using a single technology to assist in the convergence of the supply-and-demand chains.

The Walt Disney Co. will be selling plush toys embedded with RFID. In addition, they will be building an RFID umbrella throughout one of their parks. This is not an ordinary plush doll. This doll will talk and guide its guest throughout the park based upon preferences, requests and probably include a little marketing. Imagine Janie and Jimmy getting these dolls prior to their visit to the park. With the help of their parents, they decide they want to visit some of the newest rides, with of course the longest lines. What if the doll, upon entering the park, informed Janie and Jimmy where these rides were, the waiting time for each ride, alternatives to the ride since the line is long right now, and by the way, the restaurant next door has seating immediately available and it’s only about 25 yards away on your right. (The scenario could continue: The retail shop next door has a special on the latest theme-related products and if you go inside with your plush doll, we will give you special treatment and an express line to the ride.) Scary, or a huge differentiator and moneymaker. Regardless, it’s real life—today.

This plush doll will even help the supply chain and store operations. Whether it is a plush doll, razor or crystal ornament, any device that is RFID tagged will see the following benefits:

- 1** | Leading industry surveys say 3.8 percent to 6 percent of sales are lost due to stock-outs. While it is sitting on the shelf in the store, RFID tagged items and intelligent shelves will assist in reducing stock-outs and warn management when the minimum stock levels have been reached.
- 2** | Receiving can be accomplished by reading the entire order, providing two key benefits – decreasing unloading times and increasing accuracy of accepted shipments.
- 3** | RFID tagged items can be read en masse at the point of sale, significantly reducing check-out times, increasing the productivity of the cashiers and even improving cross-selling and up-selling opportunities.
- 4** | The tagged item has built-in loss prevention capabilities. Store management will be able to tell which items were read at the point of sale, which items may be trying to go out the back door and where a lost or missing item resides in the store. Reducing theft is a great side benefit of RFID tagged items.
- 5** | Accepting returns and the entire reverse logistics process becomes a snap. Since authentication is built in, you and your customers will know it is not a counterfeit. The time it takes to accept the return and process the return throughout your organization will be notably reduced.

**6** | In the theme park example, intelligent advertising can occur throughout the process. If the plush doll and guests' preferences work together with your marketing department, specific advertising can be targeted toward this guest whenever they approach an intelligent display. Your marketing department's promotions can be quantitatively measured for these loyal customers. Most importantly, a simple mathematical equation will provide average shopper times proving how long the shopper shops. Did I mention that you'll be able to measure browsers vs. buyers all with the use of this single RFID tag?

**7** | Physical inventory taking becomes automatic. Perpetual inventories and real-time processing occur simultaneously. Being able to walk down the aisle and have your inventory automatically determined is a reality with RFID enablement.

Taking the scenario to the extreme, a salesperson could proactively walk up to the guest, thank them for their loyalty and congratulate them on their previous plush doll purchase. This will provide them ample opportunities to offer the guest items that complement their previous purchase. It may also allow the salesperson to offer the guest other park, hotel or restaurant services. The day of a salesperson sin-

gularly worrying about items within their own store or restaurant will become ancient history. Your associate may even carry a small device automatically identifying complementary goods and services. Associates will have more opportunities to delight their guest and become a salesperson vs. a cashier.

There are hundreds of real-life hospitality applications in use today. The hospitality industry is in a unique position to truly transform the way we help our guests. The convergence of your supply-and-demand chains can become a reality by beginning to use RFID technology throughout your entire organization.

You need to begin with building your

RFID strategy and assessing your business requirements. You should be able to leverage most of your existing infrastructure. Don't forget to implement in incremental stages to maximize your ROI and take advantage of existing applications. Your data model must support a different level of hierarchies, locations and serial numbers for each item and the existing data needs to be clean. Once all of this is accomplished you can begin your pilot and test its scaling capabilities.

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## Uses of RFID: Yesterday, Today and Tomorrow

### Early Uses

- Building access control
- Parking deck access
- Airline baggage ID
- Auto anti-theft immobilization
- Keyless entry
- Parcel ID
- Ticketing
- Smart pallets

### New Features

- Multiple frequencies
- Reading through liquids
- Privacy & authentication
- Self destructing tags
- Long range
- Talking labels for the blind
- Container security

### Tomorrow's Uses

- Meat and prepared foods
- Embedded in European currency
- Intelligent signs
- Targeted TV ads