

RTG Newsletter

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FROM THE PRINCIPAL'S OFFICE

Jim Garity, an RTG associate, wrote this issue's article on RFID. Jim has been a consultant in the retail industry since 1989. He has done extensive work in the supermarket segment. Among Jim's strengths are his understanding and articulating of business needs and requirements.

Bob Amster



Principal

AN RFID PRIMER – WHERE ARE YOU?

Most of us have seen the IBM advertisement that shows what appears to be a shoplifter loading up his overcoat with groceries. As he heads out of the store a security guard tracks him down only to hand him a receipt for the goods tucked under his jacket.

That vision is becoming a reality thanks to a technology known as Radio Frequency Identification (RFID).

RFID tags are tiny electronic transmitters that allow an item to be electronically identified without the use of a line-of-sight scanner, but using strategically placed "readers." In order for the above scenario to work, each item has an RFID tag embedded in the item itself or in the packaging, which contains a unique identifier, and which is used to track the item as it is distributed across the supply chain. Combine this with a technology similar to what Exxon/Mobil is using to provide a *Speedpass*TM (which is a big part of the overall vision for RFID), and the customer's credit card is automatically billed as he passes through an RFID reader.

After a quick analysis of the ad, we see several areas where RFID will have an immediate impact:

1. The security guard is there for dramatic reasons. In reality the customer could have walked in to the store, filled his pockets with groceries and walked out of the store without the help of a single

employee ("0 human intervention operations" or OHIO is the term coined by CHEP pallets).

2. No checkout, no lines – more convenient than a convenience store?
3. Shrink – if our customer had intended to get a free lunch, what a surprise it would have been when he got handed the bill.

The above scenario illustrates how RFID can be used at the *final* link of the supply chain - customer convenience. In reality, this would probably be the last phase of an RFID implementation due to the relatively current high cost of the chip for low-price items and due to concerns over privacy. RFID will provide advantages throughout the retail supply chain. Let's take a look at some of the biggest potential rewards.

RFID advantages

In store marketing

The potential here is huge. As we stroll through a store and fill our shopping baskets, store systems will know what we are preparing to buy before we reach the checkout line. Interactive monitors can provide customers with additional items in which they may be interested based on what they have already chosen.

Inventory control

Throughout the supply chain, RFID will offer more efficient control over inventory by tracking movement, receipts and returns. Warehouse operations from physical inventories to receiving to shipping will be quicker and less costly. Store-level perpetual inventory accuracy will improve, as will be in-stock position through automated taking of physical inventories often and triggering alerts when stock levels fall below specified thresholds. Out-of-Stock situations can be identified immediately in stores and warehouses, and the replenishment systems alerted. Misplaced product can be located and properly stored or displayed.

Customer Returns

Customer returns could be tracked to the original purchase, without a receipt, in those stores that can retrieve historical sales data. And store associates could readily identify the merchandise down to the SKU level without the need of hang tags or visual scrutiny.

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Counterfeit/Illegal diversion reductions

More and more counterfeit and stolen items are making their way into genuine stock inventories. Merchandise that can be easily copied (DVD's, CD's, and Videos) can now be fitted with an RFID tag that will be used to verify authenticity and find stolen merchandise. Similarly, illegally diverted merchandise can be spotted, the original purchaser identified from the RFID tags (back to shipping documents) and appropriate action taken.

Supply chain efficiencies

RFID allows an item to be tracked from production to purchase by the consumer. Smart labels will provide many areas for cost and speed advantages in managing and tracking inventory throughout the supply chain. For instance, during a typical distribution process, barcodes are printed multiple times for the same item at different phases of the supply chain. RFID tags can be changed instantly at any point to meet a retailer's requirement.

Ready for Implementation?

So, for what are we waiting? We'll touch on some of the issues that need to be considered when contemplating an RFID implementation.

System integration and data requirements

RFID requires an electronic product code. If we use the example, with which we began, as our shady looking customer walks out the door; the RFID reader picks up the EPC of the items he has stashed on his person. That code is cross-referenced to the PLU number to provide price information. This will require keys and index changes/updates. The same goes for any store-level inventory information being recorded. Again, this is just the end of the supply chain. Analysis is required to determine the total amount of system changes required throughout your enterprise. In addition, if every item is being tracked individually at each phase of the supply chain, we need to be prepared for the *volume* of information that will be captured.

ERP software vendors are preparing for RFID integration. You may need to upgrade to the latest release of the software to take advantage of any enhancements being made for RFID purposes.

Check with your software provider to see where they stand in regard to RFID.

Privacy Issues

One of the emerging obstacles against the use of RFID in apparel is the concern over privacy issues. Just imagine the scene from the movie *Minority Report* in which Tom Cruise, the main protagonist, walks through a mall and is bombarded with targeted advertising at every store front he approaches by cameras that recognize his retinal imprint. This is great CRM but, how would you like the FBI to know where you have been and where you are based on these readers placed on sidewalks picking up a signal from your sweater and tying your whereabouts back your name from the retailers' sales records?

There are proposals to institute deactivation of the ePC at the time of the sale to circumvent the privacy concerns, and that would diminish the usefulness of the RFID chip to identify customer returns.

Hardware costs

The price of an RFID tag is currently relatively high for many product categories. Therefore, RFID will find early acceptance at the pallet and case level for supply chain applications – such as shipping, tracking, receiving and returns – and at the item level in the case of high-end merchandise. After it is widely embraced by the larger retailers, the price of RFID tags will come down to where it will no longer prohibit most retailers from applying tags at the item level. Installing RFID scanners, on the other hand, will require that fewer scanners be required per square foot, and that their price come down in addition a combination of defining business requirements and developing engineering and network specifications (systems and electrical).

POS systems will need to be upgraded to be able to scan both RFID and non-RFID enabled items. Depending on the type of retailer and the number of stores, the cost for this upgrade can be substantial.

New software applications

New software applications will be written to use the real-time, and frequent, data provided by such RFID networks. Retailers will be able to generate real-time shipping manifests with exact case and pallet contents. Retailers will be able to schedule

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cyclical physical inventories with the added ability to compare results against predetermined inventory levels by item, and trigger automatic, appropriate alerts to replenishment systems (or ignore them if the system detects that merchandise is already in transit).

When integrated with space management tools (plan-o-grams), RFID-centric applications will be able to detect all merchandise that has not been properly located or has been inadvertently moved from its intended location and alert store associates to rectify the situation.

Labor

Implementing RFID type systems will have a dramatic effect on your current staffing requirements. Major reassignments, training and rewriting of business practices will be required. This is especially true for anyone dealing with unionized staff.

Business partner collaboration

To fully realize the true benefits of RFID requires collaboration among business partners. This is a major project in itself. Although this may not be a prerequisite for the first phase, collaboration among partners is a must.

Mixed Merchandise

Several materials have been identified as non-RFID friendly because of the interference with communication they cause between an RFID tag and the reader. Liquids, foils and metals all fall into this category. For most retailers this will not be an issue but for those involved with these types of materials separate procedures will need to be created.

What Next?

We've barely covered the tip of the iceberg as far as the ramifications of RFID. The fact is that RFID has arrived as a viable solution and has the potential to turn the retail world on its head. Although initial costs may be high, the *potential* ROI appears to be more than adequate. RFID can provide a major competitive advantage in the next 3-5 years. Then it, too will become a commodity, at commodity prices. Business cases are being presented in boardrooms of retail corporations around the globe. Although most do not plan on

beginning the implementation immediately, visionaries are putting plans together.

It's not a question of whether you will be implementing RFID, but when. We can conclude there are prerequisites to RFID implementation projects. If a retailer is already prepared for implementation, it is months ahead of those who are 'looking into it'. Where do you stand?

Who does what?

Here is a brief capsule of manufacturers, suppliers, and retailers already involved in RFID.

Company Name	Product
Oatsystems	Senseware
Philips Smiconductors	chips
Alien Technologies	chips
EM Microelectronic	chips
Fairchild Semiconductor	chips
Skyetek	chips and hardware
Matrics	data collection technologies
Zebra	RFID printers
Intermec Technologies	RFID Readers
Feig Electronic	RFID Readers
Omron	Antenna, reader, writer, tags
Texas Instruments	transponder, reader, antenna
Psion Teklogix	future RFID-equipped Hand Held
Symbol Technologies	future RFID-equipped Hand Held
Procter & Gamble	CG mfg.
Gillette	CG mfg.
Meadwestvaco	CG pkg. Mfg., end-to-end solution
Unilever	CG Mfg., pilots with Safeway
Michelin Tires	Tire mfg.
CVS	retailer, piloting
Gap	retailer, piloted
Benetton	retailer, piloted
Marks & Spencer	retailer, largest roll-out
Prada	mfg., retailer
Wal Mart	retailer experimenting

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What's New

Town Fair Tire Centers

This successful regional dealer of tires and wheels has brought us back to assist them with the evaluation of Loss Prevention solutions for their chain of over 60 stores. TFTC has been a client of many years and we continue to enjoy the relationship.

Named to the Board

Frank Dell has been named to the board of directors of Perekriostok, Moscow, Russia. Frank has been consulting to this supermarket chain with 47 stores and hypermarkets in Moscow and St. Petersburg.

Belk's

Retail Systems and Services (RS&S) has supported Belk Inc. (a Department Store chain - Charlotte, NC) in several key areas within Merchandise Planning. RS&S has led the development and documentation of a short and long term planning

and allocation process as well as the selection of an automated planning solution for the long term. RS&S is also supporting the redefinition of the Merchandise Hierarchy and the development of Allocation and Store Planning methodologies. In the next phase of effort RS&S will be supporting the implementation of a new planning process coordinated with the new automated tools.

CVS

RS&S is currently supporting CVS Corp (Drug/Specialty chain - Woonsocket, RI) in the selections of a new automated planning system as well as the development of the new planning process and planning methodology. RS&S has provided guidance and advice on planning procedures as well as the systems techniques and tools that should be implemented to support the future planning process.

AIS

RS&S is currently working with AIS (an advanced training software development firm – Niwot, CO) as they develop Advanced Training techniques for Planning and Allocation. RS&S is assisting with the definition of generic and specific Allocation processes and system support as the basis for the advanced training techniques.

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