

RFID and Root-Cause Analysis

Retailers, CPG companies and others are turning to RFID to determine why problems in the supply chain occur, and to use that data to continually improve processes.

By Mark Roberti

Feb. 5, 2007—There has been a lot of talk about how to use data from radio frequency identification systems to improve the way companies do business. Several leading early adopters in the consumer packaged goods industry spent a good deal of time and energy in 2006 looking for the answers, and some of them are very excited by what they've found.

In addition to using RFID data for tracking promotions or electronic proof of delivery, these companies have also realized they can use RFID and other data for root-cause analysis. Essentially, they are analyzing data from radio frequency identification systems, point-of-sale terminals and other sources to determine not just that there was or will be an out-of-stock situation in a store, but *why* the problem did (or will) occur.

The proverbial Holy Grail is to create a Six Sigma supply chain. I wrote about this in my blog back in November (see [The Six Sigma Supply Chain](#)). The Six Sigma philosophy, as advocated by a [Motorola](#) engineer named Bill Smith, calls for reducing defects to less than 3.4 per million units created, as well as for constant analysis and refinement of processes to achieve that lofty goal. Many companies have applied this process in manufacturing, improving their bottom line and customer satisfaction.

You can apply continual process improvement to manufacturing because it's easy to measure how many units a machine kicks out per hour, or how many defective units are produced out of a total number. It's been challenging—until now—to measure how many promotional cases were shipped to the wrong location or not shipped at all, or how many times cases were in the back of the store while the shelves sat empty.

One area that's getting a lot of attention from consumer-packaged goods companies is promotions management. Major CPG manufacturers in the United States spend a small fortune on promotions, and they know they don't always get what they pay for because goods are not in the store when the promotion is running.

RFID systems are now able to provide data that allows companies to measure their efficiency with promotions—and the news isn't always good. I was at [Kimberly-Clark](#) (K-C)'s lab for a case study I'm writing on how the company is managing promotions. Using software from [OATSystems](#), it is able to see that on some promotional items, a retailer's compliance is 99 percent across many stores. With other items, it's substantially lower.

RELATED_ARTICLES K-C has begun to identify problems with promotions, and not all are the result of poor execution by either Kimberly-Clark or its retail partners. The company identified some stores that routinely didn't get promotional items out on time, and when KC investigated, it found the displays were too large for the aisles in some stores. It's now looking at alternative display designs that will work in stores with smaller configurations.

It's not all about RFID data. Other data can often be substituted for RFID data, such as existing store backroom inventory data. But RFID data can be captured automatically and provide a level of certainty that doesn't exist today with bar codes. K-C and other companies are now developing new business processes enabling them to capture data automatically and use it to identify—and fix—problems in the supply chain. And it is those that execute most effectively in terms of fixing problems that will derive the greatest benefit (and most competitive advantage) from RFID.

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