

# A Vision for RFID: In-Store Consumer Observational Research

Much interest has been generated within the retail industry over Radio Frequency Identification (RFID), a tiny device with huge potential. RFID is currently being explored by many retail and consumer packaged goods (CPG) companies for its use in supply chain management, compliance and inventory control. One application for RFID that has not been highlighted, or thoroughly investigated, is its use in augmenting in-store consumer observational research. However, it should not be surprising to posit that this technology could represent a major advancement for in-store consumer behavior research.

## **AUGMENTING CURRENT METHODS**

Currently, most leading observational research firms utilize videography and in-store observers as the primary means of collecting customer activity data, which is then entered into statistical software for subsequent analysis. While this approach offers the highest levels of detail and specificity regarding customer demographics and in-store behaviors, it is time consuming, requires trained experts, and relatively expensive to implement.

While RFID cannot, at this point, match the details provided by existing methods, value can be added by RFID when used as a supporting technology to obtain top level customer tracking data. For instance RFID would be well suited to:

- Track customer routes through store
- Track common shopper stopping points
- Determine customer waiting durations
- Indicate customer interactions with specific POP displays
- Record instances of product handling
- Evaluate cross merchandising activities of shoppers

This application of RFID could significantly reduce the time and cost associated with best-of-class in-store research initiatives, which retailers and CPG manufacturers employ to improve sales and customer satisfaction. Eventually, as RFID systems advance, a greater reliance on RFID technology for collecting more detailed shopping behaviors may ensue.

## **ADVANTAGES OVER EMERGING TECHNOLOGIES**

RFID offers advantages over other automated customer-tracking technologies, such as video-based object recognition, which uses computers and sophisticated software to automatically interpret video data. In comparison, RFID is far less prone to error and allows for far greater detail in collected information. While video-based object recognition technologies may offer general route data, stopping points and dwell durations, they cannot cost-effectively offer information about interactions between the customer and specific P.O.P. displays, specific shelves on displays, or the individual products contained within the shelves. RFID offers the possibility of highly accurate data detailing specific purchasing behaviors of shoppers in real time.

The RFID customer tracking approach also holds an advantage over current, cart-based, local positioning systems (LPS), which triangulate the position of a shopping cart relative to fixed in-store transmitters. The advantage of RFID is that every shopper can be tracked as opposed to every cart. It is not hard to imagine that the data from behaviors of individual shoppers is more useful and accurate than data from activity of the shopping cart, which can be abandoned for periods of time while customers shop elsewhere. Further, cart-based systems cannot account for specific behaviors of individuals within multi-member shopping groups.

## **OPTIMIZED DATA INTEGRATION**

RFID observational research applications have the additional advantage in that they are well suited for integration with other data collection technologies currently employed and in continuous development by leading in-store customer research firms. Data collected from RFID systems (such as activity time-stamps, product identification codes, and aisle or category identifiers) can easily be integrated with behavioral data collected from wireless handheld devices, digital videography, and POS data. Further, this information can be stored in a format well suited for transmission via broadband technologies for rapid collection by third party analysts and efficient availability to corporate decision makers.

## **ONE POSSIBILITY...**

A possible prototype RFID observational research system would be relatively simple in design and implementation. One such system may feature an array of transmitters unobtrusively positioned at specific relevant locations throughout the store (fixtures, displays, cash/wraps, etc.). These read RFID tags handed out to incoming shoppers in some easily ported form (pin-on button, paper coupon, courtesy card, etc.). RFID tags could be distributed to individual shoppers based on demographic criteria (gender, age, etc.). The tags could then be redeemed at checkout for reward, then deactivated or reset and reused.

Such a system could be packaged with all necessary hardware and software to provide a do-it-yourself (DIY) solution for retailers or generalist market research firms. A simple setup process could be designed for transmitter placement and calibration of the system to the specific area monitored, followed by distribution of RFID tags. Automated software could integrate the data collected from multiple transmitters and generate highly detailed reports on customer activity. This DIY system could ensure that data is secure and remains internal to the end-user. Data could also be directly sent electronically to third party firms with expertise in observational research analysis for advanced processing and/or reporting.

## **CONCLUSIONS & NEXT STEPS**

RFID is poised to have a critical and lasting impact on in-store consumer research practices. RFID offers substantial improvements in efficiency to current data collection techniques and represents a more powerful alternative to several other emerging customer tracking technologies. RFID is also well suited for inclusion in comprehensive research services and stand-alone research products. RFID development companies should be partnering with consumer behavior research firms in efforts to develop innovative customer-tracking systems facilitating the early adoption of RFID.