

The solution uses passive HF RFID tags to identify customers entering the store, then send alerts via cell phones, video screens and other devices to inform them about promotions of special interest.

By Claire Swedberg

Feb. 6, 2007—[Consumer Vision](#), a startup in Mumbai, India, is launching an RFID-based system with a local retailer. The system will allow the store to communicate more directly with its customers. First envisioned by [Indian Institute of Technology Bombay](#) (IIT-Bombay) research fellow Rohit Nalwade, the solution involves retailers providing RFID tags (either in a key fob, card or other device) to customers willing to have the technology recognize them as they enter the store. The system automatically alerts the customers to sales or promotions they might find of interest.

Founded by recent college graduates and PhD fellows from IIT, Consumer Vision consists of seven full-time employees, including Nalwade, cofounder Shalender Singh and several college interns. The company is housed in the [Society for Innovation and Entrepreneurship](#) (SINE), a business incubator hosted by IIT-Bombay that provides support for newly developed companies. Nalwade developed the idea of an RFID-based service for the retail sector in 2003. He and Singh organized the company in 2005, then began developing hardware and software after conducting a survey of 1,600 retailers and consumers in India.



Rohit Nalwade

"What we found was that some customers had privacy concerns, and we heard what they said," Nalwade explains. "We went to big cities and towns and collected all the information we could." The company realized that the system would be most marketable in high-end retail environments in which customers agree to participate in the program, allowing the store to collect data about their purchasing history in exchange for details about products and promotions they might find interesting.

An unnamed Mumbai apparel retailer will pilot the system within the next three weeks, Nalwade says. If the pilot goes as planned, it will lead to full-scale deployment, though the dates have not yet been decided.

The system includes passive 13.56 MHz RFID tags, compliant with the ISO 15693 standard. These tags are embedded in cards or key fobs containing the customer's ID number. That ID number can then be associated with the customer's spending history and demographic data stored in the retailer's back-end system.

Upon entering the store, Nalwade explains, customers pass an RFID reader and antenna developed by Consumer Vision and built by an unnamed Indian manufacturer. The interrogator captures the tag ID number, then sends it through a wireless or cabled connection to the store's back-end system or a server. Consumer Vision is supplying the software that allows the data mining that follows.

"A store can have 20,000 or more products," says Nalwade. "The design challenge is, how do you narrow that to maybe 20 promotions or products that would be of interest to a specific consumer?" With the Consumer Vision software, he says, a customer's buying history and demographic data can be compared against thousands of items in the store. The system extracts items deemed most likely to interest that specific customer, then sends information about those items to the customer in a variety of ways. In the case of the Mumbai retailer pilot, messages will be sent to the customer's cell phone. In addition, Nalwade says, video screens in some store locations will display appropriate ads and promotions to passing customers. "The system is agnostic—it can connect to a wide range of devices," Nalwade says.

Thus far, Consumer Vision has tested RFID tags from multiple companies. Its decision to use specific firms will be based on their flexibility. "We're looking at the kind of form factors they could supply us. Our experience has been that for the retail format, there's no one size fits all. Some customers want a PVC card, while others don't want to carry that," he says. The latter might be interested in key fobs or circular inlays they can insert in a cell-phone battery compartment.

Retailers would pay for the RFID tags, readers and software, Nalwade says. He adds that the hardware "is very competitively priced, given that most of the design has been done in-house and manufacturing is locally outsourced." He estimates that "the system can potentially pay for itself in 18 to 24 months."

According to Nalwade, the company has developed partnerships with retail and marketing consultants in several countries, including Dubai, Singapore, the United States and Canada. Although the system's launch is taking place in India, Nalwade claims the company has set its sights on a global market and is seeking partnerships in international locations.

"It makes sense to develop and roll out [the system] close to home first," Nalwade states. He points out that business processes in India are the same as those found in more-developed countries, and that he believes the system could be adopted internationally.

Other companies, including [NCR](#) (see [NCR Promotes RFID Cards to Give Customers the VIP Treatment](#)), are presently offering similar systems in North America. A major difference with the Consumer Vision system, Nalwade notes, is its ability to communicate with a variety of devices, such as cell phones and store displays. Eventually, Consumer Vision expects to market its system to companies in other business sectors besides retail. "Our product supports applications for retail, banks, airlines, hotels and restaurants," he says.