

# Companies Use Active RFID Cards to Improve Customer Service

With the goal of helping retailers and other companies to offer personalized service, the Novitaz system includes a plastic card containing an active RFID tag that lets business identify their patrons and learn more about their preferences.

By Claire Swedberg

Sept. 23, 2008—Westport, Conn., startup company [Novitaz](#) has developed an application that uses active RFID tags to help stores, restaurants or banks improve customer service. A bank in India and a Canadian restaurant chain, both of which have asked to remain unnamed, are now testing the system. In the case of the Canadian restaurant, customers are carrying loyalty cards with an embedded RFID chip linked to customer data in the restaurant's back-end system. When diners arrive at the restaurant, the business utilizes data about them to provide more personalized service. In the same way the Indian bank can track those entering its facility, and provide more personalized service based on each customer's RFID-embedded card.

With the system, businesses can access information necessary to target a card-carrying individual with a specific service or advertisement, as well as to analyze how successfully items are displayed in a store based on how long shoppers stop to look at them, and whether they then chose to buy those items.

Novitaz's CEO, Suni Munshani, says the company was founded in 2003 on a fundamental question: How do stores acquire the kind of data that [Amazon.com](#) and other online vendors gain from their consumers? For instance, how long do customers view specific items, what draws their interest and do they then buy the products they were evaluating?

While online stores know the answers to these questions, physical stores simply do not have that kind of visibility regarding their customers' behaviors. Unless there is a staff presence on the store aisle, Munshani says, retailers have no knowledge of who is in the store, or the items that interest that particular shopper. In fact, the only knowledge they can gain is during an item's purchase. Only then can the store identify a customer, Munshani says. "They can look at your credit card at the time of purchase," he says, "but they have no meaningful way to support you as a shopper except to say, thank you."

However, Munshani says, with improved and more timely data, stores could target the right ads for each customer, just as online vendors do, such as suggesting other products that might go well with those the consumer is considering buying.

To offer a solution, Novitaz reviewed existing technologies, including contactless cards and other types of passive RFID systems, and determined that an active RFID solution would be necessary to properly track consumers' cards. The company's engineers then fabricated the chips, designed the circuitry and antennas, and created all of the hardware to be small enough to fit into a plastic card the size of credit card. The resulting system responds to a low-frequency (125 kHz) wake-up signal from a reader and transmits at 433 MHz using a proprietary air-interface protocol.

In October, the company plans to release the second generation of this technology, known as Novitaz Edge. This second-generation card is smaller than its predecessor, Munshani says—as thin as a credit card. Both the Indian bank and Canadian restaurant are employing the second generation of this technology.

The active RFID transmission enables readers—VHS tape-size devices provided by Novitaz—to capture unique ID numbers on tags as they approach what Munshani describes as a "hot spot" where the business wishes to track activity. Novitaz software allows the interrogators to capture the ID number transmitted by the tag, then forward that number wirelessly to a back-end system hosted by the business, and track how long the specific customer remains in a given location—as well as providing the identity of that shopper in the back-end system, based on a link between the unique ID number and that shopper.

The company can then conduct its own business analytics to track, for example, whether the shopper actually purchased the item he or she was examining. It can also display specific advertising on screens as the consumer approaches a location elsewhere in the store, or mail coupons to that shopper he or she leaves, specific to products in the hot spot where that individual was located.

In restaurants, Munshani says, a participating cardholder's unique ID number could be read by interrogators as that person arrives at the parking lot, and again as he or she enters the dining room. With this data, restaurants could inform a hostess or other staff member who the arriving individual is, how that patron prefers to be served and the food and beverages he or she typically orders. Based on this more personalized service, Munshani says, the restaurant could then draw diners back to the restaurant more often.

The Novitaz cards will be available in card format for use as a loyalty card or credit card, or they could be provided by banks with options to be utilized in numerous businesses. The cardholder, in the latter case, would then visit Novitaz's Web site and log into the system online, using the serial ID number printed on the card, and input the information that person would be willing to share—and with which businesses. The serial number, as well as the customer's shopping history and other data, would then be linked to the card's RFID number.

No matter how a cardholder chooses to employ the card, Munshani says, it would transmit only its unique tag ID number, and that would link to specific data the consumer chooses to share—and only with the businesses it selects. "The metrics related to that ID number don't travel with you," Munshani says. Other businesses would be unable to access information related to that ID number, even if they had readers capable of capturing that ID number.

The cost of the system is based on the number of cards a particular business uses. A Novitaz customer would receive the readers, software and integration free of charge, then pay an annual fee for the cards based on the number being used.

Munshani declines to describe how the existing unnamed customers are using the system—at those clients' requests—but says he is discussing the system with several major companies, including marketing information firm Nielsen, which could utilize the system as part of its in-store marketing project, known as P.R.I.S.M. (Pioneering Research for an In-Store Metric), to more easily track consumer activities. At this point, however, Nielsen has not used the Novitaz system, though it has been in conversations with the company about it, he notes.

Thus far, says William Dupre, VP of operations for Nielsen's In-Store division, Nielsen has trialed passive RFID, as well as other technologies, and is a member and sponsor of the RFID Research Center at the University of Arkansas.

RELATED\_ARTICLES The company has conducted testing of RFID for tracking people, carts and baskets in stores as part of the P.R.I.S.M. system, Dupre says. However, he adds, "we discovered, through testing, that there are many points of interference in retail stores, including metal cans and several products containing water and other fluids."

Still, Munshani reports, any interference problems would be resolved by Novitaz's active RFID system, which would not be affected by the presence of metal or water in a store or other business.

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