

**Using a system involving high-frequency passive RFID tags and readers, a single employee can record a store's entire 10,000-item inventory in an hour.**

By Claire Swedberg

Apr. 14, 2009—Indian jewelry retailer Bhima & Brothers Jewellers (B&BJ) is tracking its high-value inventory and providing customers with immediate information regarding its jewelry, with an RFID system deployed at one of its five stores. The system has reduced the amount of time the store requires to take inventory from 36 man-hours down to one, and has decreased the time necessary to complete a sales transaction from between six and eight minutes, to less than one minute.

Not only does RFID provide the company with faster and more accurate inventory tracking, says Sundaresan Swaminathan, head of consumer industry and retail at IT firm MphasiS, it also helps the retailer improve customer service.



Sundaresan

Swaminathan, MphasiS'  
head of consumer industry  
and retail

B&BJ first met with MphasiS in mid 2008, Swaminathan says, to develop a system that could improve efficiency at its stores. The jeweler wanted 100 percent inventory accuracy, and to be able to provide correct product information to customers, says N. Gopalakrishnan, managing director of B&BJ's store in the city of Mysore. The retailer faced several challenges—typically, each of its two-story, 3,000-square-foot stores conducts inventory at the beginning and the end of every business day. Each store typically stocks approximately 10,000 items, and because of this large quantity, the inventory count was restricted to only the most valuable goods. The store tracked not only those high-priced items, but also an average total net gold weight in the store. "Getting this with a manual operation was quite challenging," Swaminathan states.

In addition, the store management also sought a way to allow salespeople more quality time with customers. Prior to installing the RFID system, when a customer was interested in a piece of jewelry, a salesperson took the item to the store's back room in order to look up details about the jewelry, such as its weight, stone clarity and other information that would assist the consumer in determining whether to purchase it. This process was time-consuming.

B&BJ's Mysore store installed the system in February 2009. The RFID hardware includes 13.56 MHz high-frequency (HF) passive tags from Assa Abloy Identification Technologies (AAITG) that comply with the ISO 15693 standard and offer a read range of 6 centimeters (2.4 inches). The store's deployment also includes two Handheld RFID readers and two PDAs with built-in RFID interrogators, as well as a [Brooks Automation](#) desktop reader installed at each of the store's two point-of-sale terminals, according to Chandrashekar Sanikop, MphasiS India's RFID solution architect. All four handheld devices employ a Bluetooth connection to transmit data to a back-end server.

The handheld readers are used twice to take inventory of a store's stock—at the beginning of each day, and again at the end. Employees sweep the interrogators past every display and capture the unique ID number encoded to each tag. MphasiS RFID middleware then pass that data to the retailer's existing inventory-tracking system, which utilizes Microsoft's Visual Basic 6.0 and Access 2007 database platform. The ID number of each tag is linked to data regarding the corresponding item, including the type of jewelry, along with its weight and size. All of that information resides on B&BJ's inventory-tracking software. The entire system was installed and integrated by e-Xseed Technologies & Devices.

Whenever a customer requests information regarding a particular item, a salesperson can use an PDA to read that item's tag ID number and provide data about it, including its price, based on that day's cost of gold. When the shopper is ready to make a purchase, the desired item is placed on the counter, where the RFID system captures its unique ID number and provides pricing information to the sales terminal, and the item is rung up by a salesperson. The MphasiS software then updates the B&BJ inventory records to show the jewelry has been sold, and the salesperson removes its RFID tag so it can be reused.



*Vijay Maladkar, head of  
MphasiS India's RFID  
practice*

The system took approximately four months to develop before installation, says Vijay Maladkar, head of MphasiS India's RFID practicedelivery. According to Maladkar, the company had already determined, through extensive research, that the MphasiS system should operate within the end user's existing back-end software. "We knew that we would want to develop an agnostic framework," he explains, adding that the goal was to create an RFID solution that would work with a variety of hardware systems, and back-end inventory management and billing systems. "If a customer has an existing inventory management system, for example, we can integrate with it."

The challenge with the B&BJ deployment, Maladkar says, involved finding RFID hardware able to offer a reliable read rate despite the presence of metal within the displays. Working with B&BJ and e-Xseed Technologies, the store was able to deploy the system without the need for changes. "The design is very intuitive from an end-user perspective," Gopalakrishnan says, necessitating no major training for the sales staff."

In the future, B&BJ hopes to include an RFID-enabled loyalty card system that the retailer's frequent customers could use to receive more personalized service and gain discounts based on their transaction history at the store. Eventually, the jeweler intends to install the system at all of its store locations.