

FamilyMart Demonstrates RFID's Convenience to Customers

At two of the retailer's busiest Tokyo stores, item-level tagging and RFID-enabled payment cards enabled the merchant to double the number of customers it could serve per hour.

By Claire Swedberg

Aug. 2, 2007—FamilyMart, a Japanese retail chain owned by the corporate giant Itochu, has completed a two-phase pilot of an item-level RFID system at two of its busiest Tokyo stores. The project included tagging popular items to demonstrate how item-level tagging could speed the point-of-sale (POS) process and reduce queues during the busy early-morning and lunch rush hours.

FamilyMart operates 11,501 convenience stores in Asia, including more than 6,000 in Japan and 5,000 in such countries as Taiwan, South Korea and Thailand. By 2009, the retailer plans to open 250 stores in the United States. The two Tokyo locations involved in the RFID pilot had been experiencing heavy traffic and long queues at cash registers during busy hours. As part of the pilot, FamilyMart's suppliers hand-applied passive 13.56 MHz RFID tags to 500 of the retailer's most popular items, including bread, sushi rolls and salads. Each tag's unique ID number was associated with item-related data in the stores' back-end system.

The two participating stores were fitted with Toshiba TEC Express POS terminals with RFID interrogators, as well as related Toshiba TEC software able to interpret data from those readers. The Express POS platform employs RFID item-level tagging and contactless payment cards to make checkouts faster at busy convenience stores.

Mike Keane, European manager of Toshiba TEC's bar-code printing division, says FamilyMart tested a variety of RFID tags and readers to see how well item-level tagging worked in the stores. The trial has support from the Japanese Ministry of Economy, Trade and Industry.

Phase 1 commenced in early 2006, and involved testing the hardware at Itochu's offices. "Basically," says Keane, "this was the initial test in 2006, in a controlled environment." Passive tags operating at 13.56 MHz and complying with the ISO 18092 standard were attached to items and tested at sales counters at the two stores. Customers buying products would place their items on the Express POS self-checkout system, which has an integrated RFID interrogator that reads the RFID tags and completes the sales transaction. "The results, overall, showed an extremely positive reception by customers," Keane says. The system was able to ring up all items simultaneously, rather than requiring the individual scanning needed with bar codes.

Additionally, Express POS accepts the Super Urban Intelligent Card (Suica), a rechargeable contactless electronic-cash card that commuters in Tokyo can use to pay for train fare. When a passenger uses a Suica card—which contains an embedded FeliCa 13.56 MHz passive RFID chip, developed by Sony and complying with ISO 18092—to pay for train fare, the payment is subsequently withdrawn from a prepaid balance on the card. The FamilyMart trial enabled Suica cardholders to use the same card to pay for their items as well. After passing purchases over the Express POS reader, Kean explains, a customer passes the card by the interrogator

to complete the transaction. According to Keane, Suica payments are completed in about one second.

Phase 2 started in January 2007 and finished at the end of February 2007. During this second phase, RFID tags were not only applied to individual items to speed up sales transactions but also used to track product shipments throughout the supply chain. Pallets of goods were tagged with EPC Gen 2 UHF RFID tags, and the item tags' ID numbers were linked with those of the pallet tags. A variety of tag types were tested during this phase.

The pallet tags were read at multiple points along the supply chain, Keane states, from the factory to the store. "The results of this test are still being evaluated by the different parties," he notes, "and subject to the final results, a decision will be made if and when Phase 3 should start." The nature of Phase 3's testing has not yet been determined. "We are currently awaiting an official report from the Japanese Ministry of Economy, Trade and Industry, that will be merged with our data."

RELATED_ARTICLES "Phase 1 was extremely well received and served as a catalyst to continue and expand the project," Keane says, adding that an official report from FamilyMart indicates customers experienced a more comfortable checkout process during the pilot. What's more, the report reveals, an increased amount of goods were sold, and goods arriving at the stores were received more effectively.

During the pilot, the two FamilyMart stores succeeded in processing 128 customers in 30 minutes, whereas prior to the pilot, they processed 58 customers every 30 minutes. In 2006, FamilyMart interviewed 75 customers about the use of Express POS, and three-quarters said they considered the checkout experience "speedy." All respondents replied they would use the system again.

Copyright ©2005 RFID Journal, Inc. All Rights Reserved