

Soap Maker Cleans Up with RFID

Canus, a maker of goat's milk soap, is deploying RFID to cut distribution costs, keep products from spoiling in transit and meet Wal-Mart's tagging requirements ahead of schedule.

By Jonathan Collins

Aug. 30, 2004—For André Beauregard, the founder and CEO of [Canus](#), a Canadian manufacturer of skin care products made from goat's milk, the decision to adopt RFID in the company's manufacturing and supply chain operations was a simple one.



"When I heard about the technology about a year ago, I could immediately see the potential advantages and the cost savings for us," says Beauregard. "Anyone who can't see the benefits of this technology isn't from this planet or at least isn't doing business on it."

In partnership with [Ship2Save](#), a software integrator that specializes in transportation and logistics, Canus deployed its first RFID pilot in April as part of a multiphase plan to test, configure and deploy RFID across the company's three Canadian distribution centers and two manufacturing sites.

According to Canus, the impetus for deploying the technology was not to meet specific retailer mandates but to drive savings and improve the performance of its own operations. "RFID will give us an edge in the market, and we don't want to wait. We have to be at the head of the train," says Beauregard. "We have told Wal-Mart we are waiting for them."

Canus is convinced that RFID deployment will drive savings by enabling the company to know exactly where inventory is at its distribution centers and while in transit, and by reducing the manual labor needed to check the status of shipments and deliveries. "We have between a half and three quarters of a million units per SKU in our distribution centers at any one time," says Beauregard, "and that inventory will rotate around 17 times a year."

Canus also plans to extend its RFID system to enable real-time monitoring of the temperature of its products en route to customers. The company sells a range of soaps and fragrances made from plant extracts and oils, but the bulk of its products are derived from fresh goat's milk. Many of these products spoil if they are not kept between minus 4 and 40 degrees Celsius (between 25 and 104 degrees Fahrenheit). In its five years of operation, Canus has only twice lost entire shipments because the temperature in the truck had exceeded that range. But the cost to the company was significant enough to warrant investment in trying to prevent it from happening again.

"Each time it has happened it has cost us around \$60,000 [Canadian]," says Beauregard. "That works out as a charge of \$24,000 for each year we have been in business."

The company also believes that by tracking the temperature of its products, it will learn at what point products may have been spoiled. "Right now, the first we know about a product having spoiled is when we receive a complaint from a

customer," says Beauregard.

Canus is the second-largest soap manufacturer in Canada, and the company is looking to Europe and the United States to expand its sales. Last year, 80 percent of the privately held company's business came from sales in Canada, but Canus believes its U.S. business will grow from 15 percent last year to 30 percent in 2004, fueled, at least in part, by growing sales in Wal-Mart stores.

Ship2Save is funding the trials as part of its efforts to develop its own RFID services and software aimed at small and midsize businesses. "We are trying to do this as R&D to show that medium-size companies can deploy RFID," says Sam Falsafi, director of business development and RFID strategy at Ship2Save, which, like Canus, is based in Quebec. "We have to make sure we can come up with a cost-effective offering for small and medium-size businesses."

Canus's only direct expense has been a \$100,000 investment in upgrading its accounting system to Microsoft Navision business management software to better support Ship2Save RFID middleware.

For the first phase of the RFID deployment, Ship2Save set up two portals at one of Canus's three Montreal distribution centers. The company used two RFID readers at each portal, with each reader supporting two antennas. "We found four antennas were essential in order to ensure pallet tags could be read regardless of where the tag was on the pallet," says Falsafi. The deployment uses UHF readers and EPC Class UHF tags from [Alien Technology](#). Falsafi says that the ability of the latest Alien readers to support four antennas each will dramatically cut the cost of rolling out the portal to all the company's shipping gates in 2005.



Ship2Save had to fine-tune the portals until tagged pallets could be read with 100 percent accuracy; adjustments had to be made to both the software and the hardware. Initially, most tags were being read constantly, which prevented 100 percent accuracy because it slowed down the computer that registered the reads. Setting the readers to only inform the program of tags read at 1-second intervals rectified the problem.

On the hardware side, the Canus docking door allowed only three antennas to be set up, because the portal leads to a narrow loading bay. Adjustments were made to the third antenna in terms of orientation and position relative to the ground and door to provide a greater reading area for the antenna. Although tests have shown 100 percent readability, there are plans to add a fourth antenna to ensure that a tag can be read regardless of its location on the pallet.

Ship2Save developed a local database to record the passing of tagged pallets through the portals. The database is part of Ship2Save's Operation Management System (OMS). Designed for small and midsize businesses that do not have back-end systems, the OMS will be offered as a stand-alone system and as a product that can connect with back-end systems for added functionalities.

To meet Canus's requirements to develop a system independent of any EPC tagging scheme, Ship2Save used the database to create a tag coding scheme. It keeps a record of which Canus distribution center a pallet was shipped from, the name of the customer that ordered the items on that pallet, the customer location where the pallet is going to, a sales or purchase order number, and a pallet number (in case of multiple pallet shipments to the same location and client). Based on this record, an electronic data interchange (EDI) file is automatically created and associated with the unique ID number that's written to the pallet's tag. Finally, Ship2Save created a link between the RFID network and Canus's Microsoft Navision business system.

Roughly 1,500 smart labels incorporating Alien tags are being used for the first phase of Canus's deployment. Based on instructions from the Ship2Save's OMS software, a printer-encoder from [Zebra Technologies](#) encodes an ID number on the RFID tag embedded in each 4-by-6-inch smart label and prints the label with both a bar code and human-readable data. Then a worker manually places the label on the pallet; the exact location of the smart label depends on what products are on the pallet.

According to Ship2Save, it ran into problems with the durability of the tags, which are reused. Half the tags were damaged by impact and needed replacing. "We are developing a specific process that may include a protector for the smart labels," says Falsafi.

Ship2Save also deployed and tested capabilities of the system to provide information on the condition of Canus's products while in transit from its warehouse to its customers. The system uses Ship2Save's Unit In Transit System (UITS) software to identify the pallets on the truck in real time. Using active tags from Intermec and temperature sensors installed in the trailers, Ship2Save's software displays the temperature and inventory of each container load on a computer screen. The tags are activated once the reader is asked to ping the tags. Bell Mobility wireless network enables UITS to transmit the data it collects from anywhere there is cellular service.



According to Ship2Save, a prototype system has already been created, and the testing is returning consistent read rates and ranges. Two trucks from the Canus fleet are currently being monitored using UITS. The UITS is still being refined to optimize RFID reader performance, system security and software efficiency.

Beginning in September, the deployment will be expanded to enable Canus to verify when a customer received a pallet shipment, using the EDI file that's created at shipment and linked to Canus's Microsoft Navision business management software. In this stage, the pilot will also start to tag cartons and boxes. Case tagging will initially concentrate only on products being shipped to Wal-Mart and a few select Canus clients.

According to Ship2Save, work has already been carried out on tagging cases holding several of Canus's 45 products. This work will be expanded to all but 10 products during the pilot's first phase. The remaining products, which consist mostly of liquids or gels, will be left until later in the process.

"We are leaving the tagging of the most difficult products, such as liquid soap and perfume, until last," says Falsafi, because it is a little harder to get 100 percent read rates on these items.

In the final stage, set to begin on January 2005, Ship2Save will use the lessons learned to help the company roll out the RFID system to Canus's two other distribution centers as well as its manufacturing plant.

Canus is aware that much of the RFID infrastructure, including the cost of tagging cases of products, is more expensive now than it will be in a year or two, but the company believes that it should make the investment now rather than later.

"It's more expensive than it should be—we understand these costs are going to come down—but there is a cost for being among the first," says Beauregard. "RFID brings a competitive edge, and we don't want to wait for P&G and Unilever, our biggest competitors, to get that edge first."