

Sterling Services operates self-service convenience stores that replace on-site cafeterias, saving businesses money and satisfying customers.

By Jill Gambon

Feb. 16, 2009—[Sterling Services](#), a food-service management and vending company that has operated in the Detroit area for some 23 years, has employed radio frequency identification technology to transform its business. For the past three years, the company has been running RFID-based self-service convenience stores in office buildings, manufacturing facilities, hospitals, a health club and even a high school.

The RFID-enabled stores, known as Fast Track Convenience, often replace money-losing company cafeterias or vending machines. Operating the Fast Track stores has proven to be more profitable than the vending machine business, says Ray Friedrich, the company's general manager.



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The RFID-based retail system was developed by [Freedom Shopping](#), a privately held, 14-employee firm

in Hickory, N.C. The company's self-service systems are deployed in approximately 30 retail sites in the United States. Resellers can brand the stores with whatever name they choose. The system includes RFID tags and interrogators from a variety of manufacturers, as well as software and a checkout kiosk. "We use the [hardware] brand that's best suited for the circumstances," says Rob Simmons, the company's CEO. Freedom Shopping also maintains a database containing all of the product, inventory and sales information for the self-service stores.

Sterling owns the equipment and operates the convenience stores, while its customers provide space at their facilities. "Companies don't want to subsidize food services," Friedrich says. With the Fast Track stores, businesses can provide workers with an amenity without incurring costs. A business typically spends \$50,000 to \$150,000 operating an on-site cafeteria, Friedrich estimates. At a time when companies and organizations are slashing expenses, there is little taste for supporting food operations that lose money. The Fast Track stores offer far greater choices than vending machines, he notes, while avoiding the labor costs associated with staffing a restaurant or cafeteria.

Friedrich purchased his first retail system from Freedom Shopping in 2007 after seeing it demonstrated at a trade show. He had no customers lined up at the time, but was convinced the self-service stores would win over businesses. "I thought it was brilliant," he says. The first customer he showed it to—an auto parts manufacturer—signed on and built a room on its property for a Fast Track store. Two years ago, Sterling created a separate division, known as Fast Track Convenience, to market the retail systems. The company now has more than a dozen Fast Track Convenience stores in southeastern Michigan, including those at [Garden City Hospital](#), [Ford Motor Co.](#) and the [Franklin Athletic Club](#).

How the System Works

At Sterling's warehouse, an employee manually attaches a passive Gen 2 ultrahigh-frequency tag to each item before it's loaded for delivery to a Fast Track store. The 4-inch tags are encoded at a tagging station (developed by Freedom Shopping) with data including product information, the retail price, Sterling's cost for the item, the expiration date and the store to which it will be delivered. For the many products containing liquid, or that have metal packaging—materials typically unfriendly to RFID—a one-eighth-inch-thick layer of foam is used to elevate the tag from the item's surface, in order to improve readability. Once the items are tagged, a driver loads the truck and delivers the stock to each Fast Track location, filling the shelves and refrigerator cases.

After making their selections, customers bring the items to a kiosk equipped with an RFID reader. The interrogator reads the tags and tallies up the total sale. Customers can then pay with cash or a credit card. They also can establish an account with the store and use the kiosk's touch screen to access it with a personal identification number, a stored thumbprint image or a magnetic stripe card, such as an employee identification badge or Michigan driver's license.



When customers bring their purchases to the kiosk, an interrogator reads the tags and tallies up the total sale. The patrons can then pay with cash or a credit card.

Data from the sale is transmitted to Sterling's database for inventory and order management. To prevent theft, an alarm sounds if items are removed from the store without the tags having been read at the checkout kiosk. Security cameras are also in use at the stores.

Despite the expense of item-level tagging—which costs approximately 13 cents per tag—operating the Fast Track stores has proven to be more profitable than the vending machine business, Friedrich says, noting that average sales at the stores are more than double vending machine sales. Without the constraints on package sizes that come with vending machines, Fast Track can sell larger-size items, offer a wider selection and sell higher-value fresh food.

In addition, Sterling employees no longer need to service each vending machine, which is labor-intensive and time-consuming. Now, one worker can service twice as many Fast Track stores as vending machine sites—and with sales information transmitted to Sterling's database in real time, inventory management is streamlined. "It allows us to cut floor inventory in the warehouse," Friedrich says. "The Fast Track truck leaves the warehouse full and comes back completely empty. We know

exactly what we need to bring to every site."

Customer Satisfaction

At Garden City Hospital, a 302-bed community hospital in Garden City, Mich., the Fast Track convenience store made it possible for staff members working second and third shifts, as well as patients and visitors, to purchase sandwiches, salads and snacks around-the-clock without leaving the hospital grounds. For several years, the only option for buying food after the coffee shop's 7 p.m. closing time was the limited selection in the vending machines.

In June 2007, the hospital replaced the machines with a Fast Track store offering sandwiches, soups, salads, beverages and snacks. The store now maintains an inventory list that runs 12 pages, according to Julie Carrigan, the hospital's director of food and nutrition services. Business has grown steadily since the store opened, she says. Monthly sales have increased from about \$3,000 with the vending machines to \$8,000 at the Fast Track store, with as many as 4,000 transactions processed each month.



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Carrigan had some trepidation regarding the system before its introduction. "I was a little concerned about theft, and another issue was the technology," she states. But with the security that's in place, theft hasn't been a problem. And the technology has been stable, she says—the system has not gone down since the store opened. If customers require help, they push a button at the kiosk and get live support from Sterling. The hospital is using the store to help improve customer service for patients and their families. For instance, the facility issues Fast Track gift cards to patients who must wait a long time before seeing a doctor. "That's gone over very well," she says.

Fast Track Convenience stores have also replaced vending machines at some of Ford Motor Co.'s properties. At the Experimental Vehicle Building, an advanced engineering center located in Dearborn, Mich., a Fast Track store opened last May in 500 square feet of retrofitted space that had formerly housed a cafeteria—discontinued several years ago due to the expense—and, later, vending machines that were infrequently used. Employees who work in the building—primarily engineers and some technicians—were hungry for more food options, says Matt Sehee, property manager with [CB Richard Ellis](#), a real estate firm that oversees several Ford buildings. Nearby restaurants and delis require a car trip, Sehee says, and most employees prefer not to take the time to go off-site. "We have a lot of people—engineers and upper management—who don't have a spare minute in their day," he explains. "For lunch, they just want to grab a sandwich in the building."

With the convenience and selection of food and snacks it offers, Fast Track has been well accepted by the building's 350 employees, Sehee says. The store's sales run between \$300 and \$400 each week—approximately what was projected. "It was minimal work and low-cost for us," he says. "That's what attracted us." Now, he adds, the only recurring expense to Ford is the network connection for the kiosk, which costs less than \$100 per month.

The system hit some bumps, Sehee says, including failed tag reads and problems with the kiosk refusing to accept payment, or failing to dispense change. "With the tag reads, there have been some hiccups," he notes, "but they've mostly got that licked now." One unexpected consequence is that customers remove the RFID tags from the items they purchase and stick them on walls, doors and furniture throughout the building, which can be a hassle for a property manager. "Everyone seems to peel them off," Sehee says. "They're pretty sticky. That's been a big frustration."

At the 5,000-member Franklin Athletic Club, an independent health club in Southfield, Mich., several restaurant operators tried (but failed) to turn a profit over the years. Because the flow of members visiting the club peaks at different times during the day, sometimes during off-hours, there is not a steady enough stream of customers to support a restaurant operation, says Rick Brode, president of International Tennis Corp., which runs the athletic club. After reading about a Fast Track Convenience installation at an area high school, Brode says he was intrigued by the idea of offering club members food without the cost of staffing a cafeteria. "The labor was a major part of the expense," he states. "[Fast Track Convenience] took that whole cost out."



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The health club remodeled some of its space, and Fast Track moved in two years ago, selling juices, salads, sandwiches and snacks from 5:30 a.m. to 10:30 p.m. Initially, Brode says, there was some apprehension among members about using the self-service system, but once people became used to the idea, satisfaction has been high. "The quality and selection are good," he says. "The fact that the store operator can come in and satisfy your members without any cost to you is very attractive." In fact, he adds, the system has run so smoothly that the product line is now being expanded to include baseball caps, swim goggles and T-shirts bearing the club's logo.

Sterling Services currently generates approximately \$12 million in annual sales. Looking ahead, Friedrich expects that RFID-enabled self-service food operations will drive future growth for his company. "We're poised for nice growth because of Fast Track," he says. Sterling has pitched a few potential customers on the idea of a hybrid food service model, in which a chef would work part of the day during peak demand, preparing hot, made-to-order meals and serving the food in containers affixed with RFID tags. Customers would pay at the self-service kiosks, thereby eliminating the need for a cashier. When the chef wasn't on duty, the store could remain open and customers could still purchase

RFID-tagged pre-made sandwiches, salads, drinks and other items. "I call it 'Fast Track on steroids'," Friedrich says.

Friedrich does not expect the demand for vending machines to completely dissipate, though he's certain they will continue to become a smaller part of his company's business over time. He says no one is more surprised than he is at how RFID has transformed his company. "Three years ago, this stuff wasn't even on my radar," he says. Now, he envisions the possibility of expanding into inventory management or other services using the technology. "A lot of our clients are wondering what else you can do with RFID."

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