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Earthbound Farm Gets a Fresh Solution For Its Perishables Supply Chain

By Jean V. Murphy

Earthbound Farm grew from humble beginnings to become the nation's largest grower and shipper of organic produce. Getting its highly perishable products from West Coast farms to stores across the country presents a daunting logistics challenge.

Salad-in-a-bag is one of those great ideas that makes so much sense you wonder why no one thought of it before. Make the salad inside beautiful, delicious and organic and you have a combination that perfectly meets the needs of millions of time-starved, health-conscious Americans.

The company behind the bagged-salad concept is Earthbound Farm and behind the company are its two unlikely founders, Drew and Myra Goodman. The Goodmans both grew up in Manhattan and were city kids through and through, with no knowledge of farming. While attending school in California, however, they fell in love with the Carmel Valley and with each other. After completing college in the early 1980s, the couple decided to take a year off and work with their hands before graduate school. They soon fell in love with organic farming as well. Their small, two-and-a-half acre garden produced enough greens to sell locally to specialty markets and restaurants. Then, one day in 1986, faced with a bumper crop of baby lettuce and the loss of a large restaurant customer, the couple bought some plastic bags, filled them with a mix of baby lettuce leaves, and sold the hand-labeled bags to a natural foods market in San Francisco. The rest is history.

Today Earthbound Farms distributes its fresh, organic lettuce mixes, as well as other organic produce, to all 50 states, Canada and Mexico. Its certified organic produce is grown on more than 24,000 acres—land that it owns and that it farms in partnership with other growers, primarily in California, Arizona and Mexico. Revenue for fiscal year 2003 topped $350m, with a 75 percent year-over-year growth rate, which shows no signs of slowing down. Other companies have followed Earthbound Farms' example, making bagged lettuce a staple in most grocery stores, but the company continues to dominate the market in organic salads with more than a 70 percent market share. It processes 22 million salad servings each week at state-of-the art facilities in San Juan Bautista, Calif., and Yuma, Ariz.

As the company's product and geographic range expanded, so did its logistical challenges. The tender baby greens that form the basis of its core products must be picked, washed, packaged and shipped within a matter of days in order to ensure that they arrive at a customer's location while still fresh. Maintaining the proper temperature is critical as well as ensuring that the bags do not get crushed along the way.

"HighJump allowed us to increase our efficiency without increasing the cost to our customers."
— Annake Leigh of Earthbound Farm

"Product quality is really key to us," says Anneke

Leigh, director of information technology business applications and development at the company. “All of our facilities are completely refrigerated. It is not just that they have to be cold as opposed to hot, but a consistent temperature must be maintained across the entire life of the product.”

The way that Earthbound Farm processes its greens is proprietary and it is not willing to share many details. The company developed most of the production-line technology itself, designing machines that gently clean, spin and mix the greens with a minimum of damage to the leaves. “Each mix has its own recipe or formula,” says Leigh. A bag of Mixed Baby Greens, for example, contains eight different varieties, mixed for just the right combination of taste, texture and color. “The production schedule will call for so many pounds of all these different leaves,” says Leigh. “They are brought into a mixer, which gently turns and mixes the salad in the right portions. Then the mixture goes down the production line and gets put into bags.” The bags are put into boxes and are stored in a refrigerated warehouse or loaded directly onto a customer’s truck. Some product also is sent directly to the forward distribution centers that Earthbound Farm opened this year in Cranbury, N.J., Indianapolis (at a customer’s location) and Atlanta. These centers “allow us to better serve our East Coast and Midwest customers,” says Leigh. “If a store is out of spinach we can do a same-day turnaround rather than a five-day trip across the country.”

With only a 15-day to 21-day shelf life for its products, velocity and visibility are key success factors for Earthbound Farm. “We need to know precisely where our product is at all times and how long it has been since that product was picked,” says Leigh. “We need to make sure we are following FIFO [first in, first out] and FEFO [first expire, first out] processes for getting product out of the warehouse.”

Not surprisingly, these capabilities were at the top of Earthbound Farm’s shopping list when it went looking for a warehouse management system last year. “We looked at many solutions peripherally and at several of them in depth to make sure that they met our needs for inventory tracking and rapid turns,” says Leigh. “We also needed a system that would fit into our existing environment, which is Microsoft PeopleServer, and that we could support in house. Also, we needed a system that was flexible enough to change and grow with us. All of that brought us around to HighJump, which scored very high on flexibility.”

Inventory Tracking

HighJump, a 3M company based in Eden Prairie, Minn., already had a number of customers in the food industry and was experienced in the inventory tracking needs that come with perishable, high-velocity products, as well as the government’s regulatory tracking requirements. “We have seen a lot of growth in this area over the past year,” says Chris Heim, HighJump president. In addition to tracking, Heim notes that HighJump also is highly configurable, which gives it the flexibility that is so important to Earthbound Farm. “We don’t really customize the software, but we do configure it to our customer’s needs,” says Heim. “The difference is time of installation. The Earthbound Farm implementation was very fast and we could not have gone live so quickly if we were customizing code.” The initial installation at Earthbound Farm was facilitated by a long-time HighJump partner, ViTech Business Group, Bellingham, Wash. When Earthbound Farm implemented the system at its auxiliary warehouses in New Jersey and Atlanta, however, it did all the work itself. “It was important to us to not be perpetually dependent on our vendor,” says Leigh.

One of the initial configurations that was important to Earthbound Farm was the ability to sequence products for direct shipment off the production line, with no putaway. “Doing direct ship can take as much as a day out of our cycle time, which is the same as adding a day to the life of the product,” says Leigh. “We try to have as much product as possible in and out the same day, but we do rack a fair amount.”

For that product, HighJump manages the putaway process. Using logic based on such factors as frequency of demand and relationship to other products, the system determines the best location for the product and directs the worker to that location. “The quickest moving pallets are placed in

forward locations in the warehouse," says Leigh. "We want to minimize travel time for picking those items."

The picking process begins when an order is dropped into the system. Items are prioritized for the most efficient picking and directions are sent to the picker's scanner. Importantly, the software also applies constraints based on expiration dates to ensure that products with the earliest dates are picked first. "Before putaway, each pallet is assigned a pallet tag with the lot number and aging dates, as well as the stock number," says Leigh. "So when a picker gets an order for 10 cases of spring mix, for example, the system already has determined where the oldest cases in the warehouse are located and that is where it directs the picker. The picker doesn't have to do any thinking at all. He simply goes to the location, picks and scans the pallet. Now, if he chooses the wrong pallet, the system alerts him to that, so we have validation all the way through, which eliminates errors."

Automating and optimizing the picking process has shaved precious minutes off order picking time, adds Leigh. "Initially, we cut our order pick time by 10 to 15 minutes, but I think we have significantly improved on that number, now that our employees are completely comfortable with the system. Even 10 to 15 minutes is significant when you project it over 200-plus orders per day," she says.

Another configuration crucial to Earthbound Farm are rules about which products can and cannot be packed together on the same pallet, even when they are part of a single order. "Our customers don't just order bagged salads from us," says Leigh. "They order from our entire product line, which includes other produce, such as broccoli, cauliflower, onions, potatoes, apples and citrus. These have to be stacked in specific ways on the pallet so that one product doesn't harm another. For example, citrus puts out a gas that can be harmful to other products so we don't put those on the same pallet. We want to maintain the highest quality during transportation and HighJump allowed us to put in the logic necessary to correctly palletize our products to meet our particular transportation needs."

HighJump also optimizes the loading and scheduling of trucks. With the HighJump truck scheduling software, a trucker can get an appointment over the internet, by e-mail or by phone. Then the system coordinates the scheduling of orders for picking, or directs the sequencing of orders that are loaded straight from production, so that driver wait time is kept to a minimum. "Before, Earthbound Farm had trucks just showing up and waiting to get loaded," says Heim. "Now, they get the truck there when they want to pick for that order. And then, because the system is so efficient, whether live-loading off the end of the production line or directing the worker to pick an order, they can complete the task very quickly and get drivers on their way."

This is especially important at this time, he adds, given the hours-of-service requirements for drivers and fuel surcharges. "It is really important to keep those trucks moving and workers productive," he says.

"This solution gives us a really clear view, not only of how long product sits in our warehouse, but also of how fast we turn an order and how quickly we get that truck back on the road," says Leigh.

Earthbound Farm has never had to recall product, but it is, of necessity, concerned about its ability to do so quickly should the need ever occur. "Like any food company, there are tracking and quality requirements from the Food and Drug Administration that we have to meet, but our internal standards are higher than anything the government requires," says Leigh. A part of those standards are regular recall practices, she notes. Since implementing HighJump, the time it takes for Earthbound Farm's quality group to track a given product back to its source during these practices has dropped below 15 minutes, compared with a couple of hours before. "The system does this for us very, very quickly," she says.

This ability will be further enhanced as Earthbound Farm begins to implement HighJump for

receiving raw materials as well as for tracking goods through production and distribution. That activity was set to start around the end of September. “We will be getting the information into HighJump at raw receiving,” so the tracking will start from there, says Leigh. Raw lettuce arrives in bins and totes, having been cooled on the way from the field. After receiving, it is moved into another cold room for a very short time, before it moves to the production line for cleaning, mixing and bagging. “Now we will know when each lot is in raw receiving, when it is in the cold room and when it goes into production. So we will know, down to the minute, how long that particular product has been in our facility,” she says.

After a couple of months, the company plans to move the receiving activity to the field. “Then we will know how long it has been since each lot was picked,” Leigh says.

The company also is planning to extend the use of HighJump to cover non-perishable inventory, such as packaging and machine parts, she says. And there are plans to implement HighJump’s cube and route optimization solution.

“The produce industry is not a high margin business so the cost effectiveness of this solution was very important to us,” says Leigh. “HighJump allowed us to increase our efficiency without increasing the cost to our customers.” In fact, she adds, the system significantly improved worker productivity.