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**Fresh and Fresher**

***How web monitoring keeps perishables from perishing too soon***

By Mary Wagner

If freshness isn't everything it takes to move perishable goods at retail, its absence is, at least, a deal-breaker. Shoppers don't line up to buy brown bananas, stale bread, or limp lettuce. With perishable products arriving at grocery distribution centers and stores from increasingly far-flung points of origin--even overseas--it's more challenging than ever to transport and handle them so as to minimize product deterioration. But now, the Internet is helping grocers and their perishables supply chain to manage the process, making big strides in reducing inventory shrink.

Time and the rigors of travel are why some perishable goods don't pass inspection when they arrive at the grocer's dock; too much or too little humidity is another culprit. Another problem is goods that just don't measure up even before they get on the truck, and that's one reason Tony Stallone, vice president of perishables at web grocer Peapod.com, says he's been using digital photographs sent over the Internet to assess the quality of fruit at growers before agreeing to buy it.

The photo connection

Currently, for example, Stallone says he's receiving calls from growers in California looking to sell clementines, an increasingly popular small, sweet orange historically sourced overseas. "They used to all come from Spain and Morocco, but now there are California growers who want to take advantage of the market. So if you're dubious about quality, they are able to send digital photos so you have more confidence in buying," he says.

Stallone adds that digital photos sent via the web also help retail buyers such as Peapod to gauge fruit size by including in the picture other products for purposes of comparison. Judging fruit quality remotely still is challenging even with digital photos on the web, notes Stallone. "But it's a great leap from where we were five years ago," he says.

Peapod's perishables and other products are principally secured through the purchasing operations of parent company Royal Ahold, says Stallone, where digital photography attached to products is part of a complex, web-enabled perishables procurement platform.

Temperature conditions have a major effect on freshness and product quality. Transport storage temperatures above or below a narrow optimum range for a perishable item can shave hours or days off a product's shelf life. Bananas, for example, are particularly susceptible to fluctuations in temperature and ideally travel at 56-58 degrees, ripening at 60-65 degrees. Lettuce must travel at 34-36 degrees.

Who's responsible?

In some cases, freezer injury isn't apparent until after produce is delivered and warms up, which could trap grocers into taking delivery on inventory consumers won't buy. So now, technology that continuously monitors container temperatures travels with shipments from growers and producers to retailers. Feeding the data into a web-based database for sharing and analysis can pinpoint exactly where in transport the container

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temperatures went above or below agreed-on standards by even as little as a degree. Steve Dirubio, vice president and general manager for food at cold chain system monitoring provider Sensitech Inc., says that's useful in determining responsibility when grocers receive a shipment that's not up to standard. It doesn't help in fixing temperature problems on the fly, however, because it makes little sense to halt a truck and get the problem repaired, which could take longer than it would take to get the produce to the destination.

But more than protecting retailers from paying for perishables deemed below standard, Dirubio says web analytics that grocers can run on the temperature data with systems such as Sensitech's can help them do better planning, which reduces inventory shrink from spoilage. Inventory shrink among perishable products has been estimated at 5% to 10%. "For a very large U.S. grocer, that could be \$100 million to \$150 million in perishables product shrink," he says. About 50% of that can be attributed to poor cold chain management, resulting in spoilage or products in condition too poor to stock on store shelves, he adds.

#### Prioritizing improvements

The web-based database and analytics can reveal, for example, if temperatures for produce delivered to a particular region show greater variance in transport than is the case in other regions. That would allow the grocer to review the trucking vendor used in that region, leading to the discovery, for example, that the vendor's refrigerator fleet is a few years older than average, or that the fleet's condition or maintenance is poor. The grocer could then either stop using that vendor, or put the vendor on notice that improvements would need to occur, Dirubio says.

The analytics give a picture of the relative performance of participants in cold chain management, region to region, supplier to supplier, and compares different times of year, says Dirubio. "It allows grocers to prioritize improvements," he says. "Especially if you are a large grocer spread across many states, attacking something as complicated as your perishables logistics system is an expensive proposition. So it's important to know solving which problem first will give you the biggest bang for your buck."

The Internet is helping to ensure bagels sold at at the retail stores of New World Restaurant Group are in top condition. New World, which operates more than 800 bagel bakeries and cafes under regionally-based brands Einstein Brothers, Noah's New York Bagels, Manhattan Bagel and Chesapeake Bagel Bakery, contracts with third-party manufacturers to produce bagel dough. Manufacturers freeze and ship the dough to regional distribution centers, where it's forwarded to the individual stores and baked into bagels.

New World uses Sensitech technology from the manufacturer all the way to the store operation. Frozen bagel dough is as temperature-sensitive as ice cream, and temperature-recording units from Sensitech travel in boxes of the frozen product to determine that the transport temperature has stayed below zero degrees. Kim Knutson, New World's quality assurance director, says web analytics of the temperature data can flag any variance with that standard at point in the supply chain, which allows her to communicate that information back to the appropriate place so as to correct the problem.

#### Time-saver

"It's a huge time-saver just from the data entry perspective. You can pull up historical information, or data on specific points or carriers as you need to," she says. "You can compare data on the web in a couple of clicks versus posting 17 sheets of paper on a bulletin board and saying, 'What happened?'" Knutson didn't disclose what New World pays for the technology but estimates the investment has now paid for itself.

Food isn't the only perishable product benefiting from the introduction of the Internet into the supply chain. Provide Commerce Inc.'s flagship floral

web site, Proflowers.com, has built a business on the promise of flowers that are one to three days out of the ground upon delivery, versus more than a week, which is typical under traditional cut flower distribution methods. Proflowers meets the shorter window with web-based technology that makes the whole supply chain more efficient, including proprietary software it installs at flower-growing farms.

At the domestic flower growers with which it has contracts to ship product directly to customers--representing about one-third of the flowers shipped by Proflowers--the company has installed a file server/PC attached to a series of printers. For each order to be filled, the system generates a packing slip, greeting card message and shipping label all on the same perforated form.

No more collating

Under traditional models, those three pieces of information are pulled from three different systems. "But this way, the growers don't have to collate it themselves to make sure that the right shipping label goes with the right packing slip and the right greeting card message," says CEO Bill Strauss.

Proflowers' model transfers to flower growers many of the tasks formerly handled by middlemen, putting them in the business of packaging and shipping as well as supplying product. In the process it's propelled some of those growers forward in e-commerce by sparking the spread of high-speed Internet access in some remote areas that still didn't have it. "When we started this six years ago, we actually installed fax machines at the growers, and we had fax servers here that sent the orders," says Strauss. "But over time, growers have installed high-speed Internet access on their own as they've seen their business with us grow. It's been that profitable for them."

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