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# The Chill is On

The PERISHABLES SUPPLY CHAIN,  
driven by cost efficiencies and  
shifting consumer demands,  
is moving towards centralized  
distribution centers.

**A**n article in the September 1929 issue of *Ladies' Home Journal*,

"A New Food Vision," speculated on what future food stores would look like.

Writing about the introduction of frozen foods—then an unheard-of concept—the article uncannily predicted the demise of the corner grocery store.

In its place, there would arise "not a grocery store, or a meat market, or a fish market or a delicatessen. It will be all four rolled into one... a food store in the broadest sense of the word."

Today that writer could have predicted a similar future for the distribution centers that serve these perishables, where separate facilities for meats, dairy, produce and frozen food have also been "rolled into one."

Increasing demands for cost efficiencies and a heightened awareness on food safety are key influences. Other key influences include shifting consumer demands, such as the growth in "meal solutions"—ready-to-heat and ready-to-eat meals prepared in supermarkets or delivered fully prepared by vendors.

The result is larger, yet more flexible, facilities that allow for adapting a wide range of

refrigeration needs while employing state-of-the-art docking and system wide information technology.

When Jewel Food Stores opened a new 450,000-square-foot perishables distribution center at its headquarters in Melrose Park, IL, a few years ago, it replaced several warehouses, combining separate facilities for frozen food, produce, floral, deli, dairy, meat and poultry into one center.

P&C Food Markets, Syracuse, NY, made a similar move in 1994—combining three different warehouses into a new 230,000-square-foot distribution center that consolidated perishables and employed state-of-the-art technology and storage systems.

Last year, Bozzuto's, a wholesale distributor in Cheshire, CT, opened a new 725,000 square-foot facility, adding to an existing 275,000-square-foot center built in 1995. The expanded space allowed it to add frozen foods to the facility, which had incorporated other perishables many years before.

Also last year, Iowa-based Hy-Vee Food Stores Inc. added 116,000 square feet to its 236,100 square-foot facility in Chariton, IA, which opened in 1993.

Hy-Vee says the growing meal solutions trend influenced the decision to expand. "Part of it was to handle increased purchasing needs in dairy and refrigerated areas for our meal solutions, which are actually made at the store level," says spokeswoman Ruth Mitchell.

"The new addition to the perishables center became our new freezer, and our old freezer became the refrigerated area."

"Handling meal solutions requests requires a new way of thinking on the part of the retailer," says John Vegter, vice president of logistics, Midwest region of Supervalu Inc., Minneapolis.

"We have increased crossdocking activities and moved some operations to pallet in/pallet out."

Supervalu is also making more frequent deliveries to stores in the Minneapolis area, says Vegter, and shuttle runs of fresh product on a single line load servicing multiple stores.

Keith Swiednicki, project director with Montreal-based KOM International, a logistics warehouse consulting firm says he recently visited a facility making "one-stop loads with crossdocking or reverse line picking" to handle its meal solutions demands.

"People pick by line or pick by store, and these products are then merged with the line going out that day," he says.

The growth in meal solutions dovetails with an increase in the number of new chilled products introduced to the market, such as the explosion in chilled fruit juices.

"Our members see this as a new market," says J. William Hudson, president of the International Association of Refrigerated Warehouses, Bethesda, MD. "They're making rooms that are convertible, so they can be chilled or freezer, and flexible enough to handle the diversity of products and the diversity of temperatures from minus 40 to ambient."

Companies with older facilities have a pressing demand to be modernized, he adds.

"PRWs [public refrigerated warehouses] because of their need to demonstrate to customers that they have the proper control and proper information systems have always been on the cutting edge," says Hudson. "They've been pulling the cold chain along."

Customers of PRWs are "turning to us. They've trusted us with frozen, and now they're trusting us with chilled" as the home meal replacement revolution steps up the demand for chilled perishables.

"We have very impressive facilities that are very automated," he says. "We're trying to convince everyone we're not just a cold box."

## **A Global Trend**

Centralized perishable distribution is a global trend, too, as new facilities are opening in Canada and Europe.

Sobeys, a major Canadian grocery distributor, centralized its perishables product in a new distribution center. The facility houses frozen food, fresh meat, deli and a small quantity of fresh fish. A limited dairy selection is distributed through two existing dry grocery facilities with the use of cooler boxes.

Ireland opened its first centralized facilities earlier this year [see sidebar] when SuperValu Centra, a supermarket and convenience store chain, opened new centers in Cork and Dublin.

KOM International was a consulting and engineering partner on the P&C facility in New York and the SuperValu-Centra centers in Ireland.

Swiednicki says retailers and wholesalers in the United States and Europe have their own reasons for centralizing distribution, but there is a common thread visible through the different markets.

"These markets display a concentration of the grocery trade, with a small number of large retail groups developing sophisticated central distribution and retail management systems that incorporate efficient chilled food distribution," says Swiednicki.

"Initially, wholesalers and retailers could not justify the costs associated with the extremely inefficient delivery system provided by suppliers," he says. "The overall supply chain was riddled with

inefficiencies, which drove the cost of distribution to an unacceptably high level."

With centralized distribution centers, wholesalers and retailers—rather than suppliers—now have control over the supply chain. This allows retailers to introduce new products and concepts and to make sure they are available in sufficient quantities to supply their markets.

## Five Year Planning

P&C Food Markets took a look at its distribution costs in the planning process for its new facility, which serves 66 P&C stores, in addition to wholesalers, independents and stores under other banners owned by its parent company, Penn Traffic Co.

Planning officials asked each merchandising department to provide a five-year plan. "We wanted information on their items, volume and movement so we could determine how much room we would need for SKUs," says Ernie Hurlbut, director of warehousing.

The result is a more efficient operation and improved communication among all facets of the supply chain. "We now have better use of MIS for all departments and for our record keeping," says Hurlbut.

There are many other advantages, too. "It's better for rotation, and it's better for purchasing," he says. "The distribution center can be made much more efficient with specialty areas for each type of perishable.

"Different frozen food items require variations in temperature. Ice cream and [packaged] frozen foods require different temperature ranges, while dairy foods have different needs than produce. Lettuce and broccoli require high humidity."

Hy-Vee, which serves 177 stores in a seven-state area, created a special banana ripening operation at its centralized perishables facility.

There are 14 ripening rooms, each with a capacity of 960 cartons. The head perishables foreman can consult a computer in the specially designed perishables control room and call up a wide assortment of detailed information about the

ripening process, the precise ripeness of the bananas in storage and the conditions at any given moment in that section of the center.

All rooms are computer-controlled in terms of room temperature, pulp temperature of the bananas, humidity levels and the ripening gas that is used. Conditions in the room were designed to ripen the bananas as they are received on a pallet.

Bozzuto's new facility allowed it to add frozen foods, says Tom Zatina, executive vice president and chief operating officer. "Before, we had frozen in-house, but we just didn't have enough storage space for the reserve product, which we tended to keep outside of the facility," he says.

Doug Pope, vice president of Seaway Food Town, Maumee, OH, says his company had one facility for meat, dairy and frozen food and another for produce before opening a combined perishables center eight years ago. Similar to Bozzuto's, the facility allowed Seaway to begin handling ice cream and add an ice making plant.

Seaway serves 40 supermarkets and 25 deep discount drugstores in northwestern Ohio and southeastern Michigan. The perishables center moves 130,000 cases per week with just under 35 deliveries to half the stores in the chain each day, says Pope.

Bozzuto's paid special attention to the docking areas in its facility. "People seem to be impressed with the space we've devoted to docks," says Zatina, noting the expansive 80 to 85 feet of dock space from where the racking ends to the doors.

"Most warehouses don't have docks that big," he says. "We decided that to be a true distribution point, most of the activity would be on the dock, and that's where we wanted to give ourselves plenty of space so we could step around, in and out easily without congestion.

We added a lot of state-of-the-art features in terms of refrigeration systems and technical warehouse distribution equipment, such as dock plates. It's just the way we've tried to utilize space," says Zatina.

"We have racking actually over our dock doors in the whole facility, which allows us to use that as storage space for in-and-out items or crossdock items. Our dock plates are a little bit different than other setups they come out of the doors. We're one of the first to implement them."

## Technology Demands

Tracking orders has always been a big task for distribution centers. But now with quality control demands from HACCP and the desire to cut any waste in the cold supply chain, the need for information systems has become more pressing.

"People have been using manual methods for crossdocking and line picking," says Swiednicki, but today's store orders are more complicated. Part may be from a third-party provider, while another may come from pre-picking.

"An order may also include store supplies generally they are outsourced from Bunzl," he says. "Grocery companies will use their services to pick the order in advance. That has to be tied into the regular order, plus there are crossdocking and pick by line items, along with regular picking that's scattered throughout different sections of the warehouse.

"It becomes quite an enormous task to get these items back together again to ship to the customer."

These combination loads put new demands on existing manual systems, says Swiednicki. "Companies may presently have veteran employees who can maintain high productivity levels using manual systems, but when those employees retire, their knowledge and breadth and depth go with them.

"Productivity will take a major dive. They will need to eventually invest in technology just to maintain those levels not to increase them because of the changing workforce."

Many perishables distribution centers have introduced RF technology and are scanning in bar coding on pallets to maintain information on product as it moves through the cold supply chain.

## An Era of Consolidation

Zatina says Bozzuto's, whose sales volume was \$650 million last year, opted to "fast track" its new facility building in just five months.

That kind of fast work is emblematic of the flexibility required of distribution centers as the industry continues to consolidate at a rapid pace. The major players in the supermarket and refrigerated warehouses industries have been

gobbling up their smaller counterparts lately in a merger and acquisition frenzy.

Vornado Trust Realty, Saddle Brook, NJ, and Crescent Real Estate Equities Co., Fort Worth, TX, bought the Carmar Group, Carthage, MO, which operates five public warehouses in Missouri, Arkansas and Georgia.

Just last fall, Vornado and Crescent formed AmeriCold Logistics with the purchase of AmeriCold Corp., Portland, OR, and Atlanta based URS Logistics Inc.

Last month, CS Integrated LLC, Secaucus, NJ, acquired Rosenberger Cold Storage Cos., East Hatfield, PA, the 10th largest refrigerated distribution company in the United States and the 14th largest internationally. CS Integrated (formerly known as Christian Salvesen) had earlier acquired Texas Cold Storage and Continental Freezers.

These consolidations are expanding the geographic reaches of the merged companies and forcing their industry partners to keep up.

"Our members are growing because they are serving larger stores and larger areas," says IARWs Hudson.

Centralized perishables distribution centers play a key role in serving these wider areas. And while it may mean longer distances and higher transportation costs, these are "offset by other savings from reduced labor costs and distribution efficiencies for turn and quality of products," says Hurlbut of P&C.

## Centralizing In Ireland: Two At A Time

When Ireland-based wholesale food distributor SuperValu-Centra Distribution Ltd., a retail division of Musgrave Ltd., set out to upgrade its perishables distribution system, it went about it by building new centralized perishables distribution facilities in Dublin and Cork. Two facilities would seem to defy the purpose of centralizing, but project officials say transportation costs in Ireland are so high-that in the long run-building two facilities is more cost effective than one.

SuperValu-Centra had initially hired Montreal-based KOM International, a logistics warehouse distribution consulting firm, to conduct an 18-month study on centralizing its fresh produce, short- and long-life chilled, meat and frozen foods.

The study outlined several key advantages to centralization: increased competitiveness in the marketplace, lower procurement costs for perishables and lower overall transportation costs.

SuperValu-Centra was convinced. The result was a 70,000-square-foot facility in Dublin and a 50,000-square-foot center in Cork. Construction began on both in February 1997, and they began operating in January 1998.

The Cork center is attached to SuperValu-Centra's dry grocery warehouse, while Dublin is a stand-alone facility.

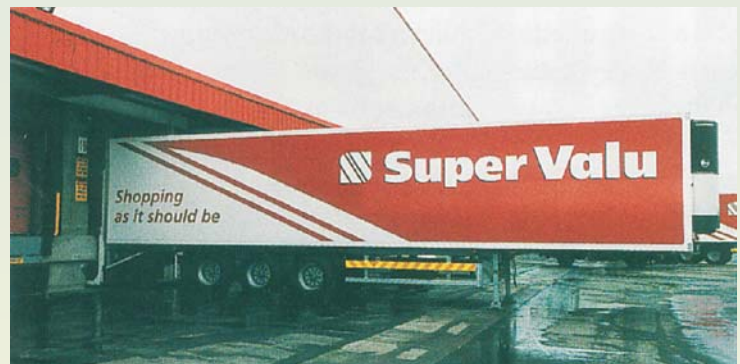
KOM had outlined five different scenarios for SuperValu-Centra involving the existing Cork facility, a center in Galway and a proposed center in Dublin. These options also weighed the advantages and disadvantages of two centers vs. one.

Transportation costs were the mitigating factor, says Keith Swiednicki, KOM's project director. "The road system in Ireland is primarily two-lane highways. It can take four hours to travel from Cork to Dublin, making it an overnight." Even with the additional costs of building and operating two centers, KOM's study showed SuperValu-Centra that the overall reduction of transportation costs from serving 200 customers out of each facility (as opposed to 425 from one), would make the construction of centers in Cork and Dublin more feasible.

Musgrave Ltd. services two chains: SuperValu, a traditional supermarket operator, and Centra, a convenience store chain. The Cork facility services 207 customers in a range of 108 miles, while Dublin handles 218 customers in a 156-mile radius. Cork at present is the busier of the two, shipping 115,000 cases per week; Dublin ships 85,000. Both will be shipping 115,000 by the end of this year.



*READY TO RACK: Curtis (left) and Noel Davern, Ireland's Minister of State at the Department of Agriculture and Food, in SuperValu-Centra's perishable distribution center.*



*LONGER TRIPS: Ireland's road system is primarily two-lane highways. It can take four hours to travel from Cork to Dublin.*

Each facility handles 236 SKUs of fruit and vegetables and roughly the same amount of fresh meats. Each has about 890 other SKUs in their mix.

Centralizing its perishables distribution gives SuperValu-Centra the ability to increase the item count handled in key product lines, thus improving the service level to its stores, says Eric Curtis, project director, SuperValu-Centra. "it further reduces the administrative burden especially at store level by decreased DSD deliveries."

And in the case of the Cork center, it maximizes the use of the existing dry grocery transportation network for comboloading dry with perishable and frozen goods, he adds.

Previously, stores were receiving multiple deliveries each day, and the store managers were required to deal with each supplier to make sure that deliveries were timely enough to maintain a quality product and to prevent out-of-stocks.

"Receiving labor at the shops was hard to schedule and basically inefficient due to the multitude of small deliveries," says Swiednicki.

Each delivery was associated with its own set of documents and a significant administrative load (accounts payable, returns, late deliveries, insufficient order quantities and poor quality).

By centralizing perishables distribution, each store in the SuperValu Centra organization benefits from single-source accountability, according to Curtis. Under the new system, the store places one combined order for all of its perishable needs.

"The delivery contains only product of the quality demanded by the customer and is received at the store in a timely and predictable manner set by the store and the distribution center," he says.

"A single invoice is sent along with the delivery, thus keeping the administrative overhead at a minimum at the store. As an added bonus, the cost of goods has been reduced because of the economies of scale, which can be realized by centralized distribution."

Another advantage with streamlined accounting and fewer deliveries per day is lower shrinkage levels and improved store security. By further maintaining "cold chain" from the time of processing to time of purchase, a higher-quality product will reach the store shelves, resulting in a higher level of customer satisfaction.

With the recent E coli outbreaks in Europe and the United States, food distributors such as SuperValu-Centra are seeking stringent quality control procedures. Its new facilities include safety equipment such as stackable, aerated crates that allow products to "breathe" yet are sturdy and safe enough for transportation and shelf stocking.

"These facilities allow controlled temperatures for each commodity group," says Curtis. "Products can be categorized according to temperature and humidity requirements. Food safety standards are maintained by segregating the departments, such as meat separate from dairy, poultry separate from meat, meat separate from vegetables."

SuperValu-Centra has implemented a "team working concept" so that the necessary steps to insure food safety are taken throughout the distribution chain, he says. "There are still due diligence requirements on all of us to protect our customers. And a safe and efficient distribution system is an essential element of this." -A.R.