Innovation by Food Companies Key to Growth and Profitability

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Consumers today are demanding an increasingly wide variety of foods, retail formats, and restaurant concepts. Food manufacturers, distributors, retailers, and foodservice operators face additional demands as they strive to profitably supply the large variety of goods and services on time and in the correct quantity.

The task facing the food industry is neither easy nor cost-free. Some food firms are responding to the challenge by making innovative operational changes, reshaping how they work together with other members of the food supply chain and how they organize themselves as individual companies. Most notably, many food retailers are working more closely with distributors and manufacturers to best serve the consumer. Also, many individual firms at each stage of the supply chain are adjusting the size and scope of their operations.

Collaboration and Information Technology Satisfy Retail Demand

Wal-Mart was among the first firms to realize that traditional methods of doing business are not always suited for today's marketplace. Formed as a single-store operation in 1962, the firm grew rapidly based on the principles of its founder, Sam Walton. These principles placed value in linking across the supply chain and using information technology to respond more promptly to the marketplace (see box on Wal-Mart). In the 1990s, Wal-Mart became the Nation's largest retailer and was also applying its knowledge of retail distribution to the food industry. In 2001, Wal-Mart became the Nation's number one food retailer, ahead of traditional food retailers like Kroger and Safeway.

In 1992, grocery retailers and industry trade associations responded to Wal-Mart's success by launching Efficient Consumer Response (ECR). The goals of this initiative include improving operational efficiency to better serve consumers and holding down costs on the supply chain. Early stages of ECR focused on industry-wide activities and studies. Today, individual companies have internal programs to implement techniques derived from the ECR initiative along with their suppliers and their buyers.

One objective of ECR is to effectively manage the mix of products on retail store shelves to increase sales and product turnover. Consumer demand for variety may require a typical supermarket to stock several dozen products in some food categories, such as cereals and salad dressings. Within each category, each product is not a different type of food; rather, each product represents a different combination of product characteristics, such as flavor, type of packaging, package size, and brand. The goal of retailers is to choose the right number and mix of products for each store. However, because a supermarket might carry 40,000 individual products, store managers may not manage all categories and products optimally. Stocking too many products could impede stock turnover and increase spoilage. Stocking too few products or the wrong products could prevent consumers from finding their desired goods.

Some retailers are managing product assortment through a procedure known as category management, which involves cooperative efforts between retailers and suppliers. Food store suppliers, such as Procter & Gamble, act as "category captains" by making product-related recommendations, in some cases suggesting retail prices and allocation of shelf space.

A second objective of ECR involves replenishing store shelves when products have been sold. Time-pressed consumers may become frustrated if they cannot find the goods they want when shopping. As such, out-of-stocks are major concerns for retailers. Out-of-stocks are also common. For example, a 1998 study by the National Pork Producers Council found that retailers averaged 29 percent out-of-stocks for pork during peak shopping hours. Reducing out-of-stocks may require retailers to inform suppliers as soon as goods leave a store. In turn, suppliers can then use this information to help manage retailers' inventories. Some retailers use scanners to relay information to suppliers when goods are sold at a retail checkout counter. This instant messaging system enables suppliers to more promptly replenish goods. According to viaLink, the provider of a scanner-based inventory replen-

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ishment system, participants in a recent pilot project increased their sales to retailers 3 to 4 percent on average and reported error-free invoicing and payments.

A third objective of ECR is to reduce inefficiencies associated with transactions between supply chain partners. For example, when food manufacturers have excess inventories, they commonly discount overstocked products. These "sales" may help manufacturers move excess inventories but can also increase distributor costs for managing larger and fluctuating inventories. In turn, these costs may be passed to consumers and further increase price volatility. Such inefficient trade promotions can also fill store shelves with slow-moving, less-desirable goods. For example, a manufacturer of a seasonal product might overestimate demand. The company is then left with excess inventories after the demand for its product has peaked. Using price discounts to encourage retailers to carry out-of-season products could force these retailers to sacrifice shelf space for goods that can otherwise command top dollar.

ECR techniques could minimize the frequency of problems leading to inefficient trade promotions. If food supply chain partners work together to forecast consumer demand, agree upon retail prices, manage product assortment, and replenish inventories, consumer demand will be more predictable for all members of the supply chain. As a result, consumer prices may be kept lower, plant scheduling can be optimized, and inventory fluctuations can be reduced to the level associated with just-in-time inventory replenishment.

A fourth objective of ECR is to increase the success rate of new products. Manufacturers introduce thousands of new food products each year; however, only a limited number of new products are successful (see "Food Product Introductions Continue to Decline in 2000" elsewhere in this issue). Frequent new product failures are expensive to manufacturers and probably inflate consumer prices. With a focus on meeting consumer demand, co-development and testing of products by all members of the supply chain should improve the success rate of new products.

Foodservice Customers Also Better Served

In 1996, the foodservice industry launched its own initiative, the Efficient Foodservice Response (EFR). Like ECR, EFR relies heavily on information technology, but EFR is more narrowly focused on removing fundamental supply chain inefficiencies.

The most widely publicized EFR objective is promoting the use of standard product identification codes, especially in the form of bar codes—a practice common in food retailing. According to the International Foodservice Distributors Association, many manufacturers, distributors, and foodservice operators use their own internal numbering schemes for identifying products. Other members of the supply chain then have to translate these numbering schemes when placing an order. This process is an inefficient use of resources and is prone to record-keeping errors.

By contrast, bar coding provides a common set of product identification codes, facilitates traceback related to food safety, and reduces errors in a number of activities, such as ordering, shipping, and inventory management. Only 1 of every 3 million scanned entries results in an error, compared with 1 of every 300 manually keyed entries. Errors in supply chain activities can raise consumer prices and cause supply disruptions that inconvenience both producers and consumers. Tyson Foods, the largest chicken producer in the United States, bar codes nearly 100 percent of its 4,000 products to ensure error-free tracking of products from the production line to cold storage to the retailer.

Longrun plans for EFR include the adoption of many ECR-like techniques. At this time, the industry is moving to implement an electronic marketplace to enable more advanced supply chain initiatives, such as efficient inventory replenishment. Currently, companies are proposing platforms for this marketplace. For example, in July 2000, industry leaders, including McDonald's, Sysco, Cargill, and Tyson Foods, launched eFS Network. The goal of eFS Network is to create an Internet-based, industrywide marketplace for foodservice companies. Importantly, eFS Network will facilitate both public transactions and confidential transactions between companies and their supply chain partners.

EFR may appear to be focused on cost-reduction, but the initiative's true objective is growth, a point industry insiders feel is overlooked. "EFR's 'removing inefficiencies' sounds too much like 'downsizing,'" said a foodservice industry supplier. "If EFR can help lower costs, and thereby allow lower menu prices, its biggest benefit will

Consumer demand for variety may require a typical supermarket to stock several dozen products in some food categories, such as salad dressings.

Credit: Ken Hammond, USDA.

Some retailers use checkout scanners equipped with instant messaging systems that automatically inform suppliers about changes in retail stocks.

Credit: Ken Hammond, USDA.

be drawing cost-conscious consumers into restaurants for three or four more meals a week. This could add considerably to everyone's gross sales."

Retailers Merge To Serve

In addition to spurring ECR and EFR, trends in consumer demand are also driving structural change across a number of food markets, such as food retailing. Structural change is measured as changes in the size and number of all firms in an industry, as well as in the market share of the largest firms. For example, to better serve customers and increase profits, a company might explore growth through mergers and acquisitions. The specific organizational changes being made vary by market, by the position of the firm on the supply chain, and even by factors specific to each firm.

In the food retailing sector, many firms are becoming larger in both the size and scope of their operations. Retailers must build physically larger supermarkets to supply more goods and services for today's convenience-minded consumers, but they face challenges in doing so. Most supermarkets today supply increasing amounts of value-added foods, prepared foods, and services, such as foodservice counters with hot or heat-and-serve items. Offering these new goods and services in one place is convenient for consumers and might therefore increase retail sales in an industry with otherwise slow growth. However, these larger stores also have high costs for overhead and labor. To successfully compete with discount retailers, such as Wal-Mart and Costco, food retailers may require organizational adjustments to both provide customers desirable products and hold down the average cost of handling products.

Many grocery retailers have explored mergers and acquisitions as a possible solution to current challenges. Operating more stores might enable retailers to hold down the average cost of handling products. Chain stores with large total sales volumes are more likely to successfully negotiate prices and enter into long-term agreements with suppliers, such as contracts to procure products to resell as proprietary, store-branded goods. Large chains may also be able to achieve lower unit costs, or economies of scale. Large capital investments are required to implement cost-saving techniques. These investments can include company-wide satellite systems, Internet communications, and other technologically advanced equipment. Chains can spread the costs of these investments over more products and more stores, reducing the average cost of the investment per store and per product.

Mergers and acquisitions in the retail grocery industry have resulted in larger chain stores that command a greater share of total industry sales. The nationwide market share of the four largest grocery chains reached 27.4 percent in 2000, compared with 17.0 percent in 1987. Grocery retailing remains relatively less consolidated on the national level than many other sectors of the economy. The situation is less clear in some regional and local markets. A study by USDA's Economic Research Service (ERS) found that the market share of the four largest food retailers in the Nation's 100 largest cities averaged 68.6 percent in 1992 and 72.3 percent in 1998.

Some Distributors Also Consolidating

Trends in consumer demand are also changing the role of food distributors in today's marketplace. Distributors have traditionally purchased goods from manufacturers, stocked these goods, and resold and shipped the goods to retailers. However, distributors are now being asked to supply additional services, stock a wider variety of goods, and deliver these goods to a wider variety of retailers and restaurants.

In the foodservice industry, the role of a distributor has depended on the relationship between the restaurant and the food processor, as well as on the type of product being traded. For example, broadline distributors are the most comprehensive type of distributor and tend to serve single-unit restaurants and some small chains. A broadline distributor purchases a variety of food products from numerous processors, stocks the goods in a warehouse, and delivers the ordered products to the restaurants. Other types of distributors have more restricted operations. Specialty distributors handle only a narrow range of products, such as meats or produce. Systems distributors serve mostly chain restaurants that centralize purchasing.

The increasing diversity of restaurant types and menus demanded by today's consumers creates challenges for distributors, especially broadline distributors. These distributors serve a range of restaurant concepts with a nearly complete array of products for each restaurant client. Moreover, these clients tend to offer a wider variety of menu selections and change menu items frequently. Working with restaurant operators to grow their businesses and procure the desired goods on time, in the right quantities, and at profitable prices is an increasingly hands-on, high-tech job for distributors. The largest broadline distributor, Sysco, operates nationwide and maintains several proprietary product lines, such as Buckhead Beef and Newport Pride (beef products) and Sysco Natural and FreshPoint (produce). Notably, FreshPoint operations include facilities to ripen sea-

sonal fruits and tomatoes so that Sysco can offer these items to its clients on a year-round basis. Sysco also invests in information technology and other equipment to keep down costs, as well as expand the range of services offered. Clients can order products from Sysco over the Internet (about $1.5 billion in annual sales). Sysco also provides a service that helps restaurant operators offer customers such amenities as electronic gift certificates and customized birthday cards.

As with grocery retailers, distributors of all sizes may not be equally suited to the challenge of better serving their customers and remaining profitable. Large distributors tend to be more successful at negotiating with suppliers, and economies of scale may exist in offering the wide range of goods and services now demanded by clients. Consequently, some firms are becoming larger in both size and scope. Most notably, major broadline distributors are expanding the size of their broadline operations as well as adding specialty and systems operations. For example, Sysco is expanding its systems operation, SYGMA Network. The company secured an agreement to serve 264 Applebee's restaurants in 2000. Also, in 2000, Sysco purchased custom-cutting meat companies and a supplier to the hospitality and lodging industry.

Like consolidation in grocery retailing, overall consolidation in foodservice distribution remains uneven. McKinsey & Company, a private consulting firm, estimates that the market share of the 10 largest foodservice distributors increased from 17 percent in 1990 to 28 percent in 2000. However, this figure understates the extent of consolidation among broadline distributors. Broadline distributors accounted for almost 50 percent of all foodservice distributor sales in 2000, and the top four firms—Sysco, U.S. Foodservice, Alliant, and Performance Food Group—accounted for almost 50 percent of these sales. Moreover, trends toward consolidation are not likely to abate. The owner of U.S. Foodservice (Ahold) acquired Alliant Foodservice in November 2001.

The role of food distributors has changed in grocery retailing as well, as has the rate of consolidation. However, the nature of these trends in retailing differs from that in the foodservice industry (see box on changing relationships).

Food Processors Lower Costs and Increase Variety

Food processors are also adjusting their organizations in response to trends in consumer demand. For instance, an ERS study shows that poultry plants are using economies of scale to dramatically lower production costs. Between 1972 and 1992, the average plant quadrupled its production. As a result, average costs per bird slaughtered fell about 13 percent below the same figure for a plant with a capacity level typical of plants in 1972. In addition to lowering production costs, poultry plants have added operations to process their expanded production volumes into new products such as turkey cutlets, chicken nuggets, and other further processed products.

U.S. per capita poultry consumption increased from 27.8 pounds in 1960 to 78.8 pounds in 1999. Without this increase, the rapid growth of output per processing plant might have led to a significant decrease in the total number of plants and firms. Still, the four largest firms in poultry slaughter account for less than half of industry sales on a value basis. In the beef industry, processing plant sizes have also increased, but per capita consumption has not kept pace with rising productivity. Indeed, per capita beef consumption has shrunk approximately 30 percent since 1977. Consequently, the four largest beef processors now supply about 70 percent of the beef market on a value basis, compared with 26 percent in 1967.

Information, Precision, and Supply Chain Interdependence: Wal-Mart Sets the Trend

"The secret of successful retailing is to give your customers what they want. And really, if you think about it from your point of view as a customer, you want everything: a wide assortment of good quality merchandise; the lowest possible prices; guaranteed satisfaction with what you buy; friendly, knowledgeable service; convenient hours; free parking; a pleasant shopping experience."

Wal-Mart founder Sam Walton (1918-1992)

In 1962, Sam Walton opened a small store in Rogers, Arkansas. By putting together linkages throughout the supply chain and using information to respond to change and cut expenses, Wal-Mart has since grown into the Nation's largest retailer of general merchandise. It has also been a leader in developing technologies and procedures to ensure that wide assortments of products are stocked on shelves at all times at economical prices. This industry leadership is demonstrated by Wal-Mart's use of scan-based trading and electronic funds transfer. Wal-Mart does not pay manufacturers for merchandise at the time a product is delivered. Instead, Wal-Mart pays the manufacturer when a product is scanned across the cash register at the point of sale. The manufacturer then receives an electronic message indicating both payment for the product and information about the change in retail stocks.

According to company literature, Wal-Mart also provides its suppliers with sales and other proprietary data to evaluate customer-buying patterns by store and region. Wal-Mart purchases goods from manufacturers based on the best-selling items at each store. Manufacturers and retailers separately forecast sales, share the forecasts, and then tailor order and deliveries.

Wal-Mart has brought its knowledge of general merchandise retailing to the food industry. The company operates "supercenters" that combine general merchandise departments with supermarket departments. These stores provide a large selection of foods to meet consumer preferences for economically priced, fresh, high-quality bakery items, meat, and produce. Quick product turnover is a key element to marketing fresh foods. Wal-Mart's automated order/delivery methods help ensure fresh product stocks and improve merchandise flow.

Sam Walton applied business principles that made use of supply chain linkages and information technology to help guide Wal-Mart from a single store operation to the Nation's number one food retailer.

Changing Relationships Between Food Distributors and Retailers

Food distributors and retailers are changing the way they interact with each other. Traditionally, distributors bought food from many manufacturers, organized and loaded the food onto trucks, and delivered the food to retailers. Today, an increasing number of food manufacturers deliver their own products directly to individual retail stores and arrange it on the shelves. Food products delivered directly by manufacturers tend to be beverages, sweets and salty snacks, bread, and ice cream.

Direct delivery programs are often complemented with ECR-based techniques, such as scan-based inventory management. Manufacturers that deliver directly to stores tend to favor scan-based trading because the system allows them to monitor store stocks and replenish diminishing stock in a timely manner. Retailers may also favor direct delivery and scan-based trading programs because they reduce instances of retail out-of-stocks. Delayed payment for goods offers retailers a further incentive to implement direct delivery programs. In such cases, retailers do not pay for products until they are sold and money is not tied up in slow-moving inventory.

Simultaneously, many retail chains now operate their own distribution centers. In 1999, 47 of the largest 50 food retailers, including Kroger, Wal-Mart, and Safeway, operated distribution centers. Products not delivered directly to individual retail stores are received at these companies' distribution centers and held as inventory. For example, Safeway operates a distribution center in Arizona that serves 103 Safeway stores in Arizona and 1 Safeway store in New Mexico. When the distribution center receives an order from one of these stores, it uses existing inventory to fill the order. Consolidated orders are filled and delivered to the stores in one of the center's own trucks. Orders placed by Safeway stores prior to 5 a.m. are filled by 10 p.m. on the same day.

While self-distributing food retailers may manage inventories more efficiently in some instances, traditional wholesalers still have a role in the industry. In addition to serving smaller retailers, traditional distributors could provide specialty foods to niche retailers. For example, Unified Western Grocers, the Nation's ninth largest food wholesaler, acquired a specialty wholesaler that caters to the growing Asian and Hispanic communities in California.

Structural Changes Raise Policy Questions

Structural change is occurring along the food supply chain as companies individually and jointly move to answer consumer demand. These changes enable companies to profit as they provide consumers with the products they desire. Nonetheless, structural change often raises issues among policymakers: some have asked whether the evolving relationship between retailers, manufacturers, and distributors increases or hinders competitive behavior.

One key issue is whether the changing structure of food markets will lead to higher consumer prices, lower farm prices, or both. Markets with a large number of buyers and sellers are often believed to be the most competitive. In competitive markets, prices are kept as low as possible by the ability of buyers and sellers to trade with other multiple buyers and sellers.

By contrast, in imperfectly competitive markets, a seller may be able to exercise "market power" if it can raise its prices above the competitive level by restricting sales. For example, in highly consolidated retail markets, some have questioned whether grocery retailers might be able to exercise market power over consumers. Similarly, a buyer is said to have market power if it can influence prices paid for inputs by restricting its purchases of these inputs. For example, as meat processors have consolidated, some have asked whether processing plants might be able to reduce prices paid to ranchers and feedlots for cattle.

Researchers have found little empirical evidence of significant market power in most food markets. Nonetheless, as the food supply chain continues to evolve in response to consumer demand, this issue and other policy issues are not likely to disappear.

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