



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Food Marketing in an Electronic Age

Implications for Agriculture

by
Jean Kinsey
and Ben
Senauer

Efficient consumer response (ECR) is a hot topic in the food industry. ECR strategy calls for grocery retailers, wholesale distributors, and manufacturer suppliers to be linked together electronically and cooperate closely in order to improve the efficiency of the entire food delivery system. The key report by Kurt Salmon Associates on *Efficient Consumer Response* in 1993 estimated that ECR can reduce dry grocery inventories by 41 percent and potentially cut total distribution costs by \$30 billion while improving consumer satisfaction with product quality and freshness. According to the Salmon report,

The ultimate goal of ECR is a responsive, consumer-driven system in which distributors and suppliers work together as business allies to maximize consumer satisfaction and minimize cost. Accurate information and high-quality products flow through a paperless system between manufacturing line and check-out counter with minimum degradation or interruption both within and between trading partners (p. 1).

The vision of ECR, as shown in figure 1, is a timely, accurate, paperless flow of information that facilitates a smooth, continuous flow of product which matches consumer purchases. Computers and software programs allow data to be transmitted directly to distributors and even back to manufacturers in real time. This flow of information allows fast-moving items to be replenished automatically and makes it possible for manufacturers to adjust production lines in response to consumer demand. Traditionally, information circulated much more slowly and only in closed circles, between consumers and retailers, between retailers and wholesale distributors, and between wholesalers and food manufacturers and other suppliers.

As figure 1 indicates, agricultural producers are not conceptually part of ECR and not incorporated into the information flow. However, ECR affects agricultural producers because it promotes agricultural industrialization, the trend toward vertical coordination, and consolidation in agriculture. This article provides an overview of ECR and how it might affect agricultural production.

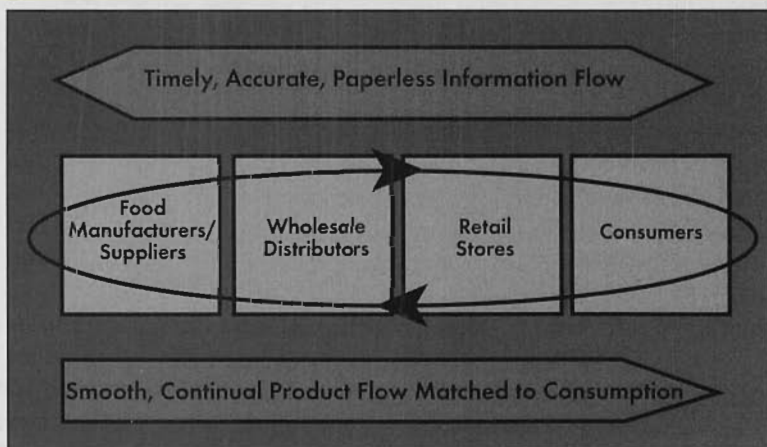


Figure 1. The ECR system

ECR beginnings

Traditionally, trade promotions played an important role in the food distribution chain. Manufacturers produced large quantities of the same item using long production runs to avoid the costs of production-line changes. Manufacturers then pushed large batches of product to wholesalers with special discounts or promotional deals. Receiving and holding "excess inventory" was profitable in an era of high inflation because companies could more than cover storage costs by marking up the price of old inventory to match new, inflated prices when it was later sold. However, wholesalers still used volume discounts to push batches of product to retail-

ers. Retailers then promoted the "excess inventory" by discounting the (marked up) price to consumers or by providing coupons.

However, low inflation and the growth of WalMart, now the world's largest retailer, changed this environment. WalMart's impact was felt, not so much because it initially sold food, but because it used an electronically driven distribution system and dealt with suppliers in a different way. Rather than promotional deals from suppliers, WalMart wanted the lowest price possible on all its purchases, and it would determine the quantities and delivery schedule. WalMart then based retail prices on an "everyday low price" approach. WalMart became the leader at distributional efficiency. Inventory was kept moving and excess supply in the system was avoided. It quickly developed sufficient market power to alter the way product was pur-

in efficiency for grocery stores.

Supermarkets, however, fell behind other retailers in the use of POS scanner information and electronic data interchange for supply chain management. Leading general retailers adopted Quick Response, a marketing strategy based on the lean-inventory management or just-in-time delivery practices in widespread use by U.S. automobile manufacturers and other industrial companies. The origins of lean-inventory management/just-in-time delivery can be traced to Toyota, the Japanese automobile company. Interestingly, Toyota management gave substantial credit for their innovation to the efficiency they observed and admired in the U.S. supermarket industry at that time. With ECR, the food industry hopes to catch up in the use of point-of-sale scanner data and sophisticated electronic exchange for inventory control and supply chain management.



chased, warehoused, and distributed.

Traditional supermarkets developed ECR to help meet the competition that discount mass merchandisers, and especially WalMart, brought to food retailing as they opened supercenters. A WalMart or K-Mart supercenter averages about 150,000 square feet with about 40 percent of the space devoted to food. Estimates are that there will be 1,200 supercenters nationwide by 1999, up from 380 in 1994. According to Blattberg, WalMart's operating costs were only 17.5 percent of sales, compared to 21.8 percent for grocery retailers, on average. Even if ECR is fully implemented, grocery retail operating costs will still be 19.3 percent of sales (Blattberg). The traditional technologies, labor force, and culture cannot change enough to lower costs more.

Supermarkets were actually the first retailers to use electronic scanning at the point of sale (POS). In 1972 they worked with the Uniform Code Council to develop Uniform Product Codes (bar codes). The food industry was also among the first to develop Electronic Data Interchange (EDI) which directly transfers information from one computer to another. Supermarkets set the industry-wide standards for point-of-sale information (scanners) and adopted it early as a way to speed checkout and eliminate the need to put a price tag on every item, thus reducing labor costs. This provided some gains

Objectives and components of ECR

In the new ECR system, with "continuous replenishment," consumers will directly elicit supply. POS scanner data fed back to processors indicates when to switch production and produce smaller or larger batches to more closely match production to sales. With "direct store delivery," some products are delivered directly from the manufacturer to the supermarket without the use of warehouses or intermediate distributors. The continuous flow of information facilitates the management of categories of products between supplier and retailer. "Category management," which is part of ECR, rationalizes the variety of products produced and carried in any given category, such as pasta or bottled water. By analyzing data on what sells and when, slow-moving products can be culled from the shelves and discarded from the production line. In some cases, varieties may be added to meet consumer demand. Each category is monitored to increase profitability and managed to reduce excess inventory and the costs associated with it. The vendor may retain ownership of the product until it is scanned and sold to a consumer. Data on consumer purchase behavior is paramount in this system since it drives the decisions up and down the supply chain.

Although not formally part of ECR, individual

household demographic data are now being linked to point-of-sale scanner data. To attract voluntary consumer participants, retailers offer various promotional benefits. Consumer volunteers then provide basic household demographic data and are given a customer identification number and card. The linkage of scanner data to consumer purchases and demographic information opens the door to sophisticated database marketing programs.

Electronic food marketing also offers a new high-tech version of home delivery and pickup of assembled orders, referred to as "consumer direct." In many areas of the country, groceries can be ordered by phone, fax, or e-mail for home delivery. Peapod, a home delivery service operating in Chicago and San Francisco, provides its customers with software and access to an internet Web site. The shopper can browse an electronic supermarket and, for example, visit a virtual breakfast cereal aisle showing products and prices. For a monthly fee and a delivery charge, Peapod employees will fill the order at participating supermarkets. Customers can even stipulate the number of green and ripe bananas desired.

Home delivery and pickup currently garners only a small share of the grocery market and its potential is uncertain. Its share may increase because it provides convenience for time-scarce consumers. However, food is a sensory good which shoppers like to see, touch, and smell, and many shoppers purchase on impulse. Some predict home delivery may account for as much as 15 percent of the market within five years, which would certainly have a major impact on the number and configuration of grocery stores (Food Institute Report).

Given the complexity of ECR and its demands on technology and management, how widely it is

fully implemented remains to be seen. Some companies such as H.E. Butt, a supermarket chain in Texas, are well advanced in implementing ECR. In addition, the foodservice (restaurant) side of the retail food industry is organizing similar strategies under the acronym of EFR (efficient foodservice response). Clearly, the fundamental goal of achieving cost-cutting efficiencies through improved supply chain management is a top priority for the food industry, regardless of the name given the strategy.

Implications for agriculture

The food system has become consumer driven. The system is being designed to respond to consumer demand as quickly as possible. Inventories are getting leaner and distribution is becoming more efficient. The most successful products are those that respond to consumers' wants and needs. Power in the system has shifted toward the retailers because they directly receive information about consumers' preferences. With ECR, this information will be increasingly shared in real time with wholesale distributors and with manufacturers. Although not part of the direct information loop, ECR has important implications for agricultural producers.

Although not the only force, ECR encourages the industrialization of agriculture with its increased vertical coordination and consolidation. As consumer-product manufacturers fine tune their production in response to ECR, they will increase demands on their suppliers, primary processors, and agricultural producers. The timing of deliveries will depend more on consumer demand and less on seasonal production patterns as sourcing becomes international. Crops grown under contract and under strict quality specifications will increase. Manufacturers will require, often through contracts, raw



or semiprocessed commodities of a consistent, uniform quality to improve processing efficiency. The crops farmers produce will depend less on traditional production patterns and more on what they can contract to sell. As consumer preferences shift, farmers must shift their production to remain competitive.

The increase in production under contract decreases the price risk faced by farmers in the short run, but may increase the risk of finding a market over the long run. Some farmers may face a virtual monopsony situation with only a single potential buyer in their area. Farmers will find new incentives to form cooperatives or networks to offset the imbalance of power or to add value to their products. North Dakota wheat producers, for example, now produce and market their own pasta.

Because of the diversity of consumer demand, and the ability of ECR to transmit this demand through the distribution channel, niche markets may grow and garner premium prices. Consumer preferences will affect production practices, including, for example, the use (or nonuse) of chemicals, antibiotics, or hormones. The natural/organic market has grown about 20 percent each year since 1990, according to the *New York Times*. Quality control throughout the food system will become more important. Quality certification by third parties has already increased. For example, a U.S. buffalo producer was able to significantly increase exports to Germany after ISO 9000 certification, an international quality-control process widely recognized in Europe. These expensive quality and safety precautions are growing because affluent consumers demand such assurances and are willing to pay for them.

Finally, ECR and the verticle integration of agriculture will affect the information available to and needed by farmers. Under the old system, many public and private entities provided price information to farmers. However, with both greater concentration and more contract production, processors do not publicly reveal negotiated prices and other terms. This diminishes the quality of information provided by reporting services and the knowledge of agricultural producers. With contractual arrangements rather than open markets, information is likely to be unequally available. Furthermore, producers in an ECR/industrialized food and agricultural system will need different types of information than under a commodity market system. In particular, they require information to evaluate alternative contract terms,

manage risks, and plan future production as market demand shifts.

Although we do not know how many businesses will adopt ECR, or how completely, information technology and new management strategies are clearly reshaping supply chain management and distribution channels in the food industry. In turn, these changes will have a major impact on agricultural production. ■

■ For more information

Blattberg, R.C. "Changing Store Image through Category Revitalization." Presentation at Food Marketing Institute Conference, Chicago, 7 May 1996.



Food Marketing Institute. *Food Institute Report*. Washington DC, 28 October 1996, p. 6.

—. "Trends in the United States: Consumer Attitudes and the Supermarket, 1996." Washington DC, 1996.

Kurt Salmon Associates. "Efficient Consumer Response, 1993: Enhancing Consumer Value in the Grocery Industry." Food Marketing Institute, Washington DC, January 1993.

New York Times. 26 October 1996, p. 21.

The authors wish to thank the reviewers of this article whose comments were particularly helpful.

The authors are professors in the Department of Applied Economics and, respectively, director of The Retail Food Industry Center and the Center for International Food and Agricultural Policy at the University of Minnesota.