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Food Marketing in an Electronic Age:

Implications For Agricultural Producers

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Food Marketing in an Electronic Age: Implications For Agricultural Producers

Abstract

The most efficient food delivery system in the world is becoming even more so with new electronic information gathered at the checkout counter and quickly transmitted to food distributors and manufacturers. In order to meet new competition in the retail market for food and food services, traditional grocery stores and their suppliers are redesigning how they present, order and distribute products. This effort is called Efficient Consumer Response (ECR). It is a system whereby consumer preferences, expressed through their purchases, are revealed to food manufacturers and then back to producers. Commodities with special characteristics for preferred types of food are pulled out of the food and agricultural system as opposed to being pushed out in bulk with the hope that someone will buy them.

The implications for agriculture are that farmers will increasingly be producing commodities with specific attributes called for by food processors who are responding to retail demand. Traditional patterns of farming will change; more product will be produced for niche markets and for international tastes. More value will be added to the raw commodity closer to the land through genetics, breeding, and special attention to production techniques. There will be higher pay-off for the entrepreneur on the farm, but the risks will increase as well as the pace of change.

Food Marketing in an Electronic Age: Implications For Agricultural Producers

OUTLINE

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   New Competition

   New Lifestyles

   New Technology - electronics

2. Efficient Consumer Response

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   Inventory Control

   Category Management - processors

   Streamlined Information Flow

3. Implications for Agricultural Producers

   Contract Farming

   Risk Management

   New Opportunities

   - new generation cooperatives

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EFFICIENT FOOD SYSTEMS: TRADITIONS AND CHANGES

The efficient delivery of food from farmers to consumers in the Western World is an economic success story. Through agricultural productivity and efficiencies in distribution and transportation, the real cost of food to U.S. households has fallen about one-third since 1960. The proportion of U.S. households' annual expenditures going to food, from all sources, had fallen to 11.3 percent by 1994, compared to 25 percent in 1960. The latest survey of consumer trends found that weekly grocery expenditures are $82 per household in the United States ($123,000 lire) (FMI, 1996). The proportion of the food dollar spent in grocery stores has continued to trend downward and will soon be less than one-half. A relatively low percent of income needed to purchase food has long been a sign of a developed and affluent country and an efficient food system. For example, the U.S. Department of Agriculture reports the percent of household expenditures that goes to food eaten at home is only 8.6 percent in the United States, 10.8 percent in the United Kingdom, 17.9 percent in Italy and 19.5 percent in Germany. Another way to look at this is to examine the number of hours a worker making the average wage must work to purchase a standardized market

basket of food. In 1993, this is reported to be 2 hours and 35 minutes in the United States and about the same in Germany; Italy and Japan were similar with about 4 hours and 50 minutes while in Mexico it was 7 hours and 19 minutes. Clearly, the less one spends for food the more remains for the consumption of other goods and services including food services.

The grocery store remains one of the most frequented public establishments outside of work and school, but it is undergoing tremendous change as it responds to new competition, new consumer preferences, and new electronic technology. It is getting bigger, handling more diverse products, and looking more like fast-food restaurants and delicatessens, providing more services at the high end and lower prices at the low end. To see how food marketing has changed at the retail level see Charts 1 and 2.[1] Chart 1 illustrates the change in the distribution of store types in the United States between 1980 and 1993. In 1980, there were about 137,000 food stores; 22 percent were conventional supermarkets, 25 percent were convenience stores, half were classified as "other" types of stores -- small independently owned stores of various types and big discounters were not in the picture. By 1993, the number of conventional stores decreased to 9.3 percent of the then 165,000 stores; convenience stores grew to over half of all stores and big discounters appear as one percent. In terms of the volume of food sold, however, Chart 2 shows that these big discounters had captured 15 percent of the market, convenience stores picked up another 5 percent and conventional stores share of total volume fell from 55 to 26 percent. Superstores had also

[1] Data for Charts 1 and 2 are from Blattberg, 1996.

grown in importance, almost doubling their share of the market. The picture that emerges is that stores are growing both bigger and more specialized. The conventional store that served a mass market is being taken over by those who specialize in either large volume and low prices or by those who specialize in niches where convenience, ambiance, service or special types of food count more than price.

The most famous and threatening of the big discounters is Wal Mart, not because they sold groceries at the start, but because they arrived on the scene with a new electronically driven distribution system and a new way to deal with suppliers. They quickly developed market power sufficient to change the way product was purchased, warehoused, and distributed. They cut the distribution costs through purchasing large quantities at everyday low prices, resisting special deals that would fill their warehouses with excess inventory. They specialized in keeping inventory moving, reducing operating costs from the almost 22 percent now spent by most grocery retailers to 17.5 percent. This enabled them to offer consumers lower prices and a variety of goods in 1,995 locations around the country and 223 stores in other countries by 1996.

Grocery stores have lost non-food sales to Wal Mart and the other general merchandise discounters in categories such as household cleaning supplies and paper products. Sales have also been lost to category killers which focus on and discount a single product category, such as pet food and supplies. Now the traditional supermarkets perceive their greatest threat to be the supercenters which Wal Mart and other general discount chains

are opening. A supercenter carries both general merchandise and food. They average about 150,000 square feet in size with 40 percent of the space going to grocery items.

Traditionally, restocking supermarket shelves relied on the retail grocer surveying the shelves in the store and ordering those products low in stock from a wholesaler. The wholesaler would pick those products off their warehouse shelves and deliver them to the store. Some suppliers (food manufacturers) would come to the store and stock their own section of the retail shelf with fresh product. Often they would bargain with the retailer for an end of aisle display or better visibility for a special fee, generally known as a slotting fee. Or, they would offer a special deal on large quantities which the retailer or wholesaler would hold in inventory and sell later, at a higher price. This practice lead to the anomaly of "making more money on buying product than on selling it." It also led to higher costs of distribution since someone in the distribution chain (wholesaler or retailer) was bearing the capital and physical costs of holding excess inventory.

Two phenomena put these long standing practices in jeopardy. One was the streamlined distribution system developed by the likes of Wal Mart and the second was the end of high inflation. Without inflation to justify raising prices on products purchased earlier, and with increased price competition at the retail end, stocking up strategies no longer paid off. A new way of doing business was called for and the industry's response was to organize a nationwide committee of suppliers and retailers who began in 1992 to reengineer the distribution system under the name of Efficient Consumer Response (ECR).

Before exploring what ECR is attempting to accomplish, there are two related phenomena that bear mention. One is the change in consumer preferences for food that is ready to eat, healthy and nutritious, and provided in enormous variety. This has led to new competition in retail food. Supermarkets are losing sales in delicatessen and prepared foods, especially for foods taken out to eat elsewhere, and they are losing sales to restaurants, particularly to fast food places. A recent consumer survey shows that 48 percent of those who use take out food obtain it from a fast food place, 25 percent from a restaurant and only 12 percent from a grocery store (FMI, 1996). Boston Market is the best example of a new food retailing concept referred to as "home meal replacement" or "home ready meals." A customer can purchase a hot chicken, turkey, ham or meat loaf dinner with a choice of several side dishes and have it packaged up so it is still warm when they get home, all for about $5.00. Just as the supercenters are competing with traditional supermarkets for the price-conscious customer, places like Boston Market are competing for those who want the convenience of a prepared, ready to eat meal..

EFFICIENT CONSUMER RESPONSE

The food industry was actually the first to use electronic scanning of price and product at the point of sale. In 1972 they worked with the Uniform Code Council to develop Uniform Product Codes and were among the first to develop Electronic Data Information (EDI) systems. They set the industry wide standards for point of sale information (scanners) and adopted it early on as a way to speedup checkout and eliminate the need to put a price tag on every item. This provided some gains in efficiency to individual stores. Meanwhile other

retail industries adopted it as a way to streamline the entire distribution chain. It is called a "quick response" system in the general merchandise trade.

The food industry is just now catching up to this use of scanner data for inventory management and sophisticated electronic exchange. Computers and software programs allow these data to be transmitted directly to distributors and even back to manufacturers in real time. This makes it possible for distributors to replenish fast moving items automatically and allows manufacturers to adjust production lines to the items in highest demand. Charts 3 and 4 illustrate the old and the new way of transmitting information through the food chain. In Chart 3 information circulates in closed circles, between consumers and retailers, between retailers and wholesalers, and then between wholesalers and food manufacturers and between manufacturers and farmers. Keep in mind that manufacturers like to produce the same product for a long time since it costs money to start up and shut down a production line. This leads to pushing large batches of product out to wholesalers on special discounted deals causing inventory buildup in the warehouse. The wholesaler, likewise, would like to push a large quantity of product out to retailers using special promotional discounts. Then, the retailer has excess inventory of some products that must be promoted and sold to consumers by discounting the price or providing coupons. In this system supply was pushed out towards the consumer.

In the new efficient consumer response system, product is pulled out of the system by consumer demand. Scanner data fed back to processors tells them when to switch production and allows them to produce smaller batches of product and to concentrate on what is selling

rather than on what they might like to produce. Chart 4 illustrates this continuous flow of information which facilitates the management of categories of products between supplier and retailer. Category management, which is part of ECR, is an attempt to rationalize the variety of products produced and carried in any given category such as pasta or bottled water. By analyzing data on what sells, when, and to whom, products which rarely sell can be culled from the shelves, and may be discarded from the production line. In some cases, varieties may even be added to meet consumer demand but each category is monitored to increase profitability and managed to reduce excess inventory and the costs associated with it. Data on consumer purchase behavior is paramount in this system since it drives the decisions up and down the supply chain.

Scanner data are now being linked to the characteristics of the consumer who made the purchases through frequent shopper programs which provide identification numbers and cards. What do these scanner data tell us about consumers? They are increasingly diverse and the retail grocery stores are dividing along the lines of high service, high price, and low service, low price. To meet the needs of the low price shoppers, the deep discounters and the supercenters (Wal Marts) have arrived. They may still provide a large variety of product, but the store's ambiance is that of an efficient, no frills operation. On the other end, there are the upscale stores, a pleasant ambiance and food courts, natural and organic food, home delivery, and personal information about food preparation or selection. A sort of bifurcation of the grocery industry along these lines leaves a lot of room for niche markets which serve the needs of particular consumers for certain products or in specific neighborhoods.

IMPLICATIONS FOR AGRICULTURAL PRODUCERS

As food manufactures fine tune their production lines, they will fine turn what they purchase from farmers. The timing of deliveries will depend more on consumer demand and less on the season when foods are produced or grown as sourcing becomes international. Farmers will increase the number of crops they grow under contract, crops with special characteristics that are needed to manufacture foods most in demand. The crops they produce will depend less on traditional farming patterns and more on what they can contract to sell to manufacturers. In many cases, these manufacturer/buyers will be in the food service business such as McDonalds or Kentucky Fried Chicken.

In regions where specialty crops are grown and there is an obvious consumer demand (or one that can be cultivated), farmers are forming new cooperatives and other business centers to add value to their commodity and realize the value-added profits themselves. Examples of these are wheat producers with pasta plants, goat farmers producing specialty goat cheeses, and corn producers with ethanol and fructose plants. These are not unlike the traditional cheese and wine makers in special regions of Italy and the rest of Europe. Specialty products sell in niches of the total market and feed the upscale market where there seems to be no end to the appetite for new food experiences.

The increased use of contract farming tends to decrease the price risks in the short run, but can increase the risks of finding a market over the long run. A buyer like Pillsbury or Nestle or McDonalds has no reason to be loyal to a particular farmer and can and will switch producer suppliers whenever they need to meet new needs down the food chain.

Farmers who sell on the open market may end up having few interested buyers in their area. As consumer preferences shift, farmers become vulnerable to having to shift their production to a new commodity or a new method. Some small farmers with a unique product can make a decent profit in this market, but the trend is toward larger and larger farming operations as the industrialization of farming proceeds.

To the extent that particular consumer preferences extend to production processes such as avoiding the use of chemicals or antibiotics or hormones, farmers will find themselves altering production practices to be able to sell their product, perhaps at a premium price. Quality certification by third parties is increasing. For example, some specialty meat (buffalo) imported into Germany is certified by the ISO9000 process. Organic farming certification groups are springing up all over the United States. These expensive quality and safety precautions are growing, however, because affluent consumers demand such assurances of quality and are willing to pay for it.

SUMMARY

In summary, the technology that allows data on consumers and their purchases to be relayed regularly to the distributors and food manufacturers has set the food industry on its head. It is no longer a system where the supply is pushed off the farm and consumers buy what is in season or on what the store negotiates for a special promotional deal. It is a system responding to consumer demand in as quick a fashion as possible. Inventories are getting leaner, and distribution costs are declining. The way business is conducted is being revised. Discounts on large quantities of product are being exchanged for delivering only the amount needed to fill demand in the short run.

Over the past several years, it was recognized that in the food chain, retailers had garnered most of the power. Why? Because they were the closest to the consumer. They had the best information about what products were selling. Since they did not have to share this information with their suppliers in a systematic way, the suppliers were still operating on the basis of pushing product out in large quantities relying on volume sales to generate profits. ECR will allow the instantaneous sharing of information and will undoubtably shift some of the power back towards the manufacturers. The stated goal of the ECR process 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." (ECR, 1993)

Perhaps some of the most telling differences between the old and the new distribution system is in the performance measures used to measure success. There is a shift away from success being measured only on the basis of volume, such as gross revenue or gross margin, sales per unit of labor or square foot of selling space. New measures concentrate on five things that affect profit or return on assets rather than gross volume. These five measures address: 1) customer satisfaction; 2) cycle times (manufacturers line to table); 3) yield (percent of product wasted, sold at full price, or percent of orders entered correctly); 4) reliability (accuracy of forecasts and items delivered "just in time"), and 5) financial measures based on return on assets (ECR, 1993) .

This type of change is not unique to the food industry. As population growth slows and total sales stop growing, many companies have switched from basing their success on larger and larger sales to increasing profitability by reducing costs and by adding value. It is part of the recent downsizing frenzy and productivity focus. This change in culture does not stop with food retailers, wholesalers and manufacturers, but extends to farmers as well. For better or worse, the industrialization of agriculture is being accelerated by the electronic marketing of food and information about its customers.

CHART 1

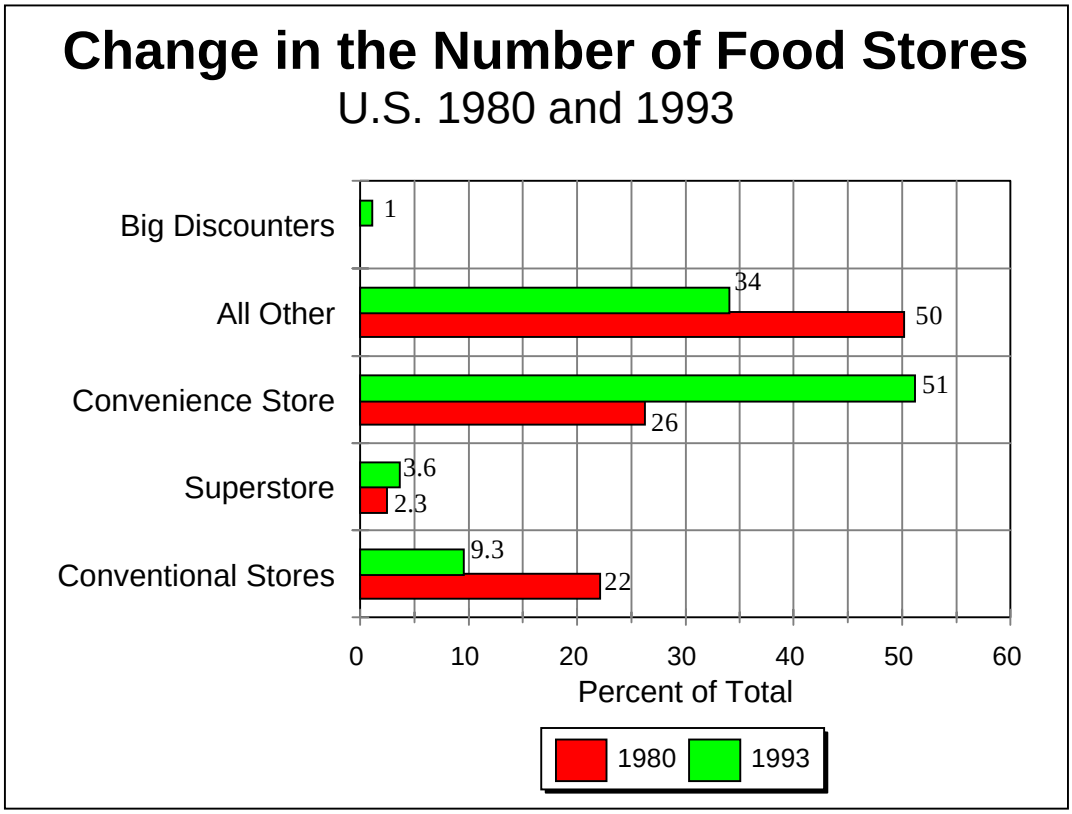

Change in the Number of Food Stores
U.S. 1980 and 1993
Big Discounters
All Other
Convenience Store
Superstore
Conventional Stores
1
34
50
51
26
3.6
2.3
9.3
22
0
10
20
30
40
50
60
Percent of Total
1980
1993

CHART 2

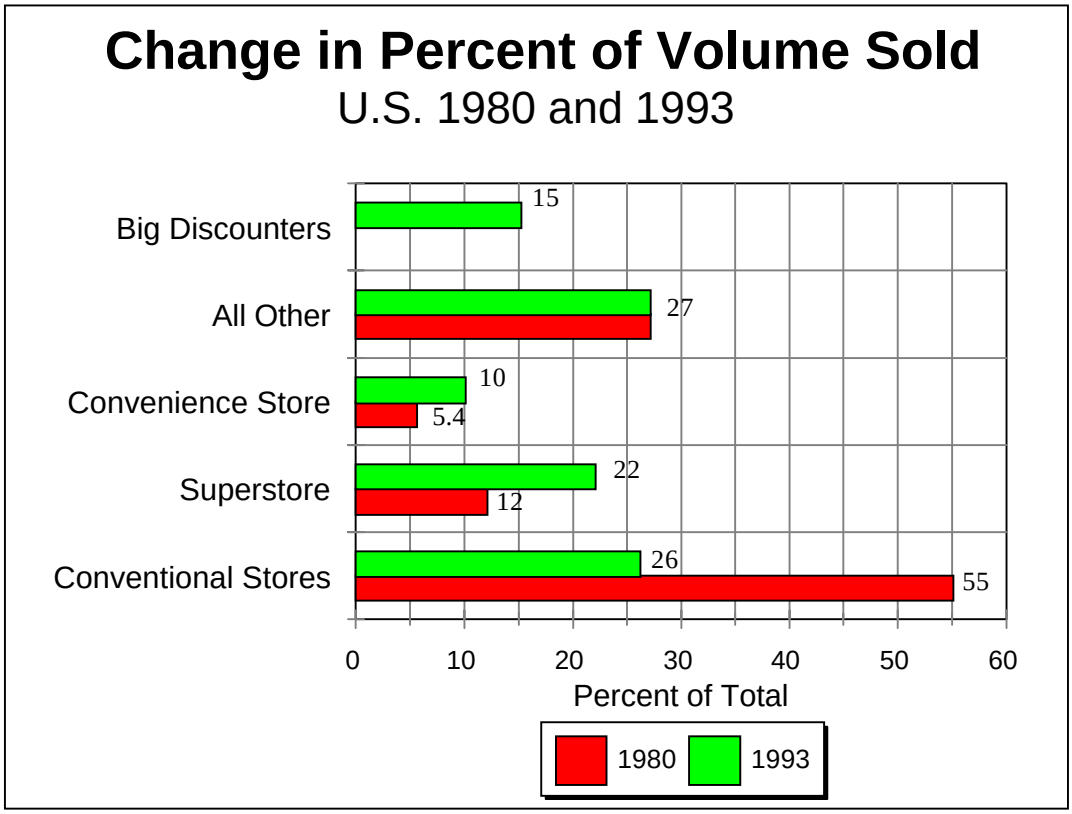

Change in Percent of Volume Sold
U.S. 1980 and 1993
Big Discounters
All Other
Convenience Store
Superstore
Conventional Stores
15
27
10
5.4
22
12
26
55
0
10
20
30
40
50
60
Percent of Total
1980
1993

CHART 3

Current Food Supply Chain
Unlinked Information Flow

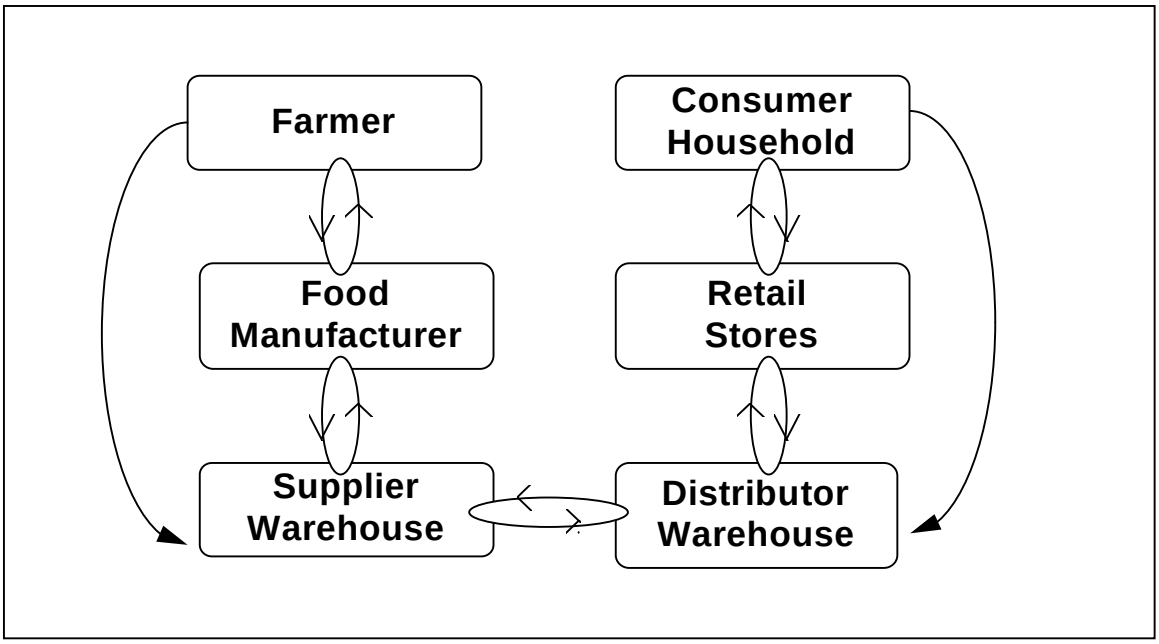
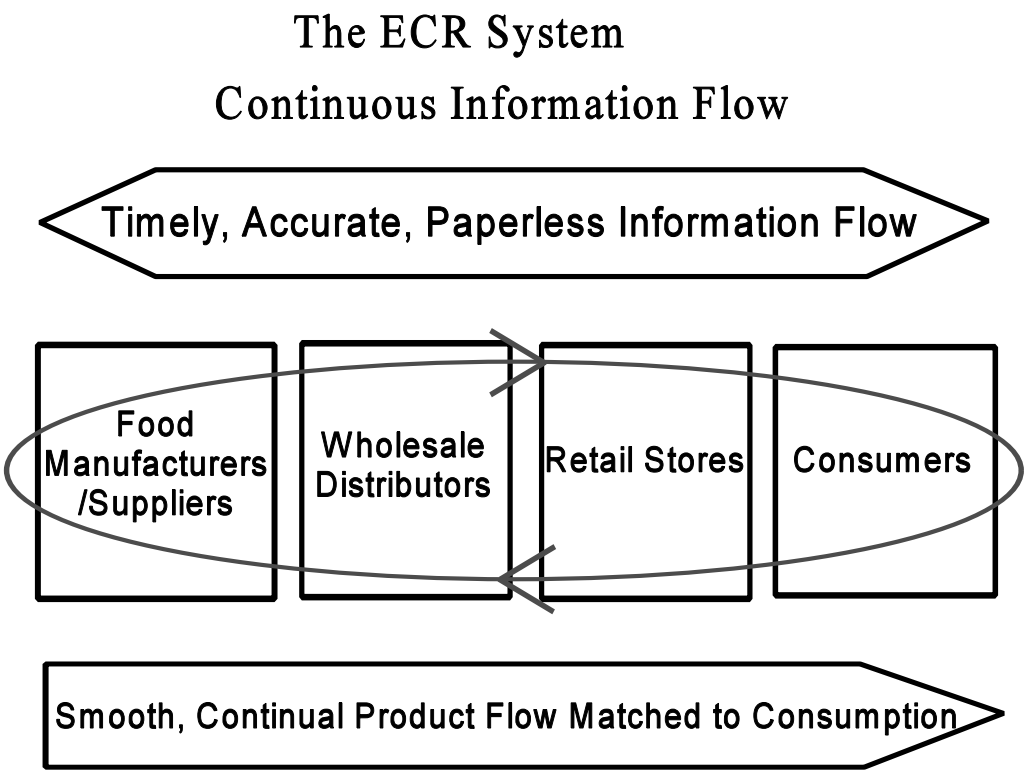


CHART 4


The ECR System
Continuous Information Flow
Timely, Accurate, Paperless Information Flow
Food Manufacturers /Suppliers
Wholesale Distributors
Retail Stores
Consumers
Smooth, Continual Product Flow Matched to Consumption

REFERENCES

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

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

"Trends in the United States: Consumer Attitudes and The Supermarket, 1996." Food Marketing Institute. Washington D.C. 1996.