RESEARCH REPORTS

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A Forecast for the Grocery Industry in the 1990s

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Change has long been the watchword in the food industry. In recent years, however, many indicators point to an acceleration in the rate of change. Since 1980, food industry mergers and acquisitions, both at manufacturer and distributor levels, have proceeded at unprecedented rates (Marion, 1986). Advertising expenditures and new product introductions by food manufacturers are at historic highs (Dancer, Fitzgerald, and Sample, 1986). Over the past decade, too, the traditional concept of the "supermarket" has increasingly been replaced by a proliferation of alternate retail formats, from limited assortment stores to super warehouse stores and specialty boutiques. These new formats, broadly redefining the nature of food industry competition, have been one retailer response to what is arguably the category of greatest change: consumer demand. The abrupt, rather than evolutionary, entry of women into the labor force, for example, represents a demographic shift without precedent that is having profound effects on the entire spectrum of the food industry: the types of products developed, how they are promoted, and where they are sold.

Although attempting to forecast the future is not a new requisite of successful business planning, the rapidly changing conditions in the contemporary food industry make this process more critical and difficult today. Yet these same changing conditions also create significant opportunities for those firms best prepared to respond. The days are gone when food industry firms could survive by simply reacting to new developments as they occurred. Such behavior results in sub-optimal resource allocation and leaves firms vulnerable to better

positioned competitors. Today, planning is a necessity; and planning requires forecasting.

Methodology

A wide variety of qualitative and quantitative approaches are available for forecasting the future. Several comparisons of forecasting techniques have concluded that, although specific models have different strengths, no one technique demonstrates superior performance under all conditions (Brandt and Bessler, 1981; Linstone and Turoff, 1975). Expert opinion forecasts, for example, have outperformed quantitative projections in many instances. In this study, a Delphi method, where successive iterations of a questionnaire related to a specific area of inquiry, was employed with a representative group of executives from the food industry. The group was composed of 52 middle and upper level managers from the 1986 Cornell Food Executive Program, including 17 manufacturers, 24 retailers, and 11 wholesalers. The specific Delphi process followed is illustrated in Figure 1. An excellent review of this technique and results of past grocery industry forecasts is found in Brock (1980).

Figure 1

Modified Delphi Method Employed
For Grocery Industry Forecast

Phase I	Forecast Literature & Executives Identify Broad Themes
Phase II	Executives Make Series of Forecasts for Each Theme
Phase III	Executives Respond to 71 Forecast Scenarios in a Consolidated Questionnaire
Phase IV	Executives Meet to Discuss Interpretation & Implications of Collective Forecasts

Principal Findings

In total, about half of the seventy-one events from the Delphi survey instrument are included in the analysis and discussion which follows. For the purposes of this paper the events are organized into three general categories; Technological Developments, Structural Developments, and Operational Developments. Within each of these categories the most significant events within each sub-category are presented in tabular form and discussed in detail.

Technological Developments

The installation of scanners in U.S. supermarkets began in 1974. At the end of 1985, 11,660 supermarkets were equipped with scanners, or 38 percent of U.S. supermarkets (A. C. Nielsen, 1986). The executives in this study forecast this growth to continue. Combining the first two categories of Table 1, 83 percent of the executives estimated that within ten years scanners would be used in three quarters of U.S. supermarkets. The rate of scanning installations over the past ten years has been about 97 stores per month, over the past five years about 150 stores per month. Assuming that the number of supermarkets in the United States remains constant over the next decade, this forecast suggests that the rate of scanning installations would be about 94 stores per month, slightly lower than the rate of the last ten years and much lower than the more rapid rate of the last five years. This projected slowdown in scanner adoption may be reasonable given the already near complete penetration of scanners in today's larger stores.

Executives seemed optimistic about the prospects for coupon scanning, with 39 percent predicting that half of manufacturers' coupons would be scanned within four years and 88 percent forecasting the change by 1995. Explaining the forecast, executives pointed to the great potential for reduced handling costs and fewer misredemptions while capturing new marketing data on coupon users and the cost effectiveness of various couponing strategies, by product, market, and consumer demographics.

Utilizing scanning data for shelf allocation and buying decisions are two of the so-called "intangible" applications currently being developed from scanning technology. Eighty-three percent of the executives believed that within ten years scanning data would be used for such decisions. With workable Direct Product Profitability (DPP) models apparently not far in the future, it is likely that shelf allocation and buying decisions will be two of the most dramatically changed areas of food retailing in the next decade.

At least two food retailers in the United States are currently experimenting with systems which allow customers to scan their own purchases at checkout (*Supermarket News*, 1986). Thus far, both retailer and consumer reaction has been mixed. Similarly, the executives surveyed were not very confident about the feasibility and true cost savings of such consumer self-scanning. In fact, one-third said that self-scanning would never be a reality. Another 45 percent thought that self-scanning was a possibility but did not expect it to materialize within the next ten years.

The Universal Communication System (UCS) developed from a crude concept involving direct retailer-to-manufacturer communications in the late 1960s, to a pilot group of thirteen retailers, wholesalers, and manufacturers in 1982, to a fully operational system involving 148 companies by May, 1986. In addition, over 100 companies are in various stages of getting started using UCS (Hite, 1986). These UCS companies are placing orders, receiving invoices, paying bills, and performing most other normal procurement functions via electronic transmissions. Almost two-thirds of executives estimated that 75 percent of all purchase orders would be executed via UCS within ten years (Table 2). The potential for system-wide savings is enormous if this technology develops to its projected potential.

Table 2 also presents several ramifications of this shift to UCS. Within ten years nearly all orders will be generated by store-level computers, according to 73 percent of the executives. Additionally, 93 percent estimated that within ten years computerized ordering would allow store-level delivery 24 hours after order placement with the warehouse. Finally, 84 percent of the respondents estimated that within ten years portable computers would be used by manufacturers' sales representatives to relay store level data to their sales offices. Interestingly, with only one minor exception, there was consensus among executives that all of the technological scenarios in Table 2 would come to pass (e.g., low level of "never" response), they only disagreed over how soon.

Approximately three quarters of respondents felt that within ten years merchandise will be checked in and verified on electronic equipment at the time of store delivery and that within ten years individual item pricing will virtually be eliminated by electronic (or other) shelf pricing systems (Table 3). Many stated that earlier consumer resistance to removing item prices has nearly vanished as confidence in scanner reliability has grown. Both of these innovations have the potential to reduce dramatically labor costs and improve both efficiency and control at store level.

Respondents were less positive about the prospects of warehouse orders being assembled without touching human hands; only 27 percent predicted that this would occur in the next ten years. Although 85 percent of all respondents felt that warehouse automation would increase, over half felt that it would not take place until after 1995.

The growth of satellite communications capabilities makes possible the transmission of a host of new types of sales presentations from manufacturer to retailer. Many current sales presentations made to retail buyers, for example, would be well suited to video formats. Executives were not as positive about the prospects for this application of new technology as they were for most of the others. In fact, 29 percent of respondents predicted that 30 percent of sales presentations would never be transmitted via satellite. Over half predicted that the 30 percent level would be reached but not until after 1995.

Despite many failed efforts in the recent past, 83 percent of the executives estimated

Table 1

Technological Developments: Scanning

	By 1990	By 1995	After 1995	Never
	- - - % of all responses - - -			
Scanners will be used in 75% of all supermarkets (now 35%)	25	56	17	0
Fifty percent of manufacturers' coupons will be scanned at the checkout stand.	39	49	11	0
Scanning data will be the basis for all shelf allocation and buying decisions.	29	54	13	2
Customers will scan their own items before purchase.	4	15	45	33

Table 2

Technological Developments: Computers and UCS

	By 1990	By 1995	After 1995	Never
	- - - % of all responses - - -			
Seventy-five percent of purchase orders will be executed via UCS.	15	50	25	0
Nearly all orders will be generated by store level computers.	17	56	23	0
Computerized re-ordering will allow delivery 24 hours after order placement.	52	41	2	4
Hand-held computers will be used by sales reps to relay data from stores to office.	41	43	15	0

Table 3

Technological Developments: Automation & Communications

	By 1990	By 1995	After 1995	Never
	- - - % of all responses - - -			
Almost all direct-store-delivered items will be checked in on electronic equipment at time of store delivery.	29	49	17	4
Individual item pricing will be eliminated by electronic (or other) shelf pricing systems.	21	52	19	6
Most warehouse orders will be picked, checked, and loaded on trucks without touching human hands.	2	25	58	13
Thirty percent of sales presentations will be made via satellite transmission.	0	15	52	29
Ten percent of supermarket sales will be comprised of telephone or computer orders from consumers' homes.	8	25	50	13

Table 4

Structural Developments: Mergers and Acquisitions

	By 1990	By 1995	After 1995	Never
	- - - % of all responses - - -			
The current favorable governmental attitude toward mergers and acquisitions will be reversed.	39	41	2	13
As mergers and acquisitions continue government intervention in anti-trust and price-fixing cases will increase dramatically.	49	27	10	10
The top 10 food chains will account for 50 percent of total sales (36% today).	17	47	15	19
As mergers and acquisitions result in fewer but larger retail chains, after-tax profits will average around 2 percent of sales (now about 1%).	6	33	21	39

that, at some future data, 10 percent of supermarket sales would consist of telephone or computer orders from consumers' homes either for delivery or pickup.

Structural Developments and Channel Relationships

Respondents generally expect the climate for mergers and acquisitions to deteriorate over the next ten years: 80 percent predict that the favorable governmental attitude toward mergers and acquisitions will be reversed (Table 4). Also, 76 percent forecast a dramatic increase in government intervention in anti-trust and price-fixing cases over the same period.

Despite this expected increase in government surveillance, almost two-thirds of respondents predicted that the top ten retail food chains would increase their share of total retail food sales from the current level of around 36 percent to about 50 percent within ten years. However, only 39 percent forecast average after-tax profits to increase from their current level of about one percent of sales to two percent within the next ten years. In fact, the same proportion, 39 percent, predicted that after-tax profits would never reach the two percent level.

The locus of power and control in distribution channels is rooted in both economic and behavioral theory. In practice, its evolution is of acute concern to all channel members as it establishes the overall terms of trade and determines who performs which functions. For years, conventional wisdom and much empirical evidence suggested that, in the food industry, the vast resources and marketing prowess of manufacturers permitted them to dictate most terms to distributors. Recently, however, there may be a shift in the dominance of this relationship in favor of the distributors as they become more adept at utilizing scanning and related technologies for shelf allocation, buying, and merchandising decisions. In this survey, 68 percent of the respondents predicted that retailers would begin to dominate this relationship within ten years and 41 percent said this shift would occur by 1990 (Table 5).

One way in which retailers might exercise greater control is by stocking more brands but carrying less inventory of each; although 58 percent of respondents predicted this would be the case within the next ten years, 29 percent said this practice would never occur.

Despite frequent criticism and intra-industry rhetoric regarding wasted resources, almost half of the respondents felt that manufacturers would never shift away from the current emphasis on advertising activity and deals to lower prices. Finally, 81 percent of the executives predict that within ten years the role of brokers in the food system will shift from its historical status as sales agent to local marketing specialist. Executives explained that they expected the role of brokers to grow in importance despite the increasing prominence of electronic and direct communication technologies that threaten the tradition bound brokerage industry. In fact, many expressed the opinion that more sophisticated technologies would relieve brokers of many tedious administrative tasks and improve their efficiency as marketers.

Operational Developments

In the past decade new store formats have proliferated as retailers attempt to position themselves to meet the needs of rapidly changing and diverse consumer segments. Three of the most rapidly growing formats are convenience stores, super warehouse stores, and wholesale membership clubs. Each of these appeals to a somewhat different consumer need: convenience stores offer quick access to a limited assortment of popular products, super warehouse stores offer complete, one-stop shopping, and wholesale clubs offer deep discounts on a restricted assortment of staples and non-foods.

When asked to forecast the fates of each of these formats, 60 percent predicted that convenience store sales would reach 10 percent of total retail food sales in the next decade, up from 7 percent today (Table 6). Only 44 percent felt that wholesale membership clubs would reach the same level within the next ten years, while a third felt that clubs would never account for 10 percent of food

Table 5

Structural Developments: Suppliers, Brokers, Distributors

	By 1990	By 1995	After 1995	Never
	- - - % of all responses - - -			
Retailers will be increasingly able to dominate the retailer/manufacturer interface by utilizing DPP and scanning data.	41	27	19	11
Retailers will stock more brands but less inventory of each brand.	31	27	8	29
Manufacturers will shift from emphasis on advertising activity and deals to emphasis on lower prices.	15	21	13	49
The nature and role of brokers in the food system will change from sales agents to marketing specialists.	27	54	4	13

Table 6

Operational Developments: Channels and Formats

	By 1990	By 1995	After 1995	Never
	- - - % of all responses - - -			
Convenience stores will account for 10 percent of retail food sales (7% today).	37	23	19	19
"Wholesale membership clubs" will account for 10 percent of sales.	11	33	13	33
Super warehouse type stores will double their present share of total sales.	21	49	13	13
Average supermarket size will be 40,000 square feet (about 28,000 sq. ft. today).	11	49	35	2

sales. Seventy percent of the executives felt that in the next ten years super warehouse stores' share of retail food sales would double. Additionally, according to 60 percent of the respondents, the average size supermarket will increase from today's 28,000 square feet to about 40,000 square feet by 1995.

One of the largest changes in food advertising has been the expansion in the use of cable television, seriously hampering the effectiveness of advertising on national networks. Accordingly, 56 percent of the executives forecast that over the next ten years manufacturers will shift primary advertising emphasis from national campaigns to local and regional cable television.

Related to the decline of network television has been the trend toward more in-store, point-of-purchase advertising. To retailers this trend often means increased revenue from advertising and space rental payments from manufacturers. Surprisingly, 63 percent of the executives estimated that the magnitude of these revenues might one day represent 10 percent of retailer operating profits (Table 3). However, only 44 percent expected that level to be reached within the next ten years.

Two other trends that have characterized food marketing over the past decade have been the steady rise in the number of manufacturer coupons issued (A. C. Nielsen, 1986) and the number of new products introduced (Dancer, Fitzgerald, and Sample, 1986). Just over half of the executives predicted that the number of manufacturer coupons will decline significantly within ten years. Similarly, over 60 percent of the executives forecast that over the next ten years the number of new product introductions will level off. In both cases executives reasoned that saturation levels were being reached and further increases would soon become uneconomic.

Productivity has long been a key issue in food distribution where labor costs typically average more than 60 percent of total operating expenses. Many of the advantages of technological progress are based on the assumption that either labor costs will be reduced or that labor productivity will be increased. In this regard, 86 percent of the executives predicted that output per man-hour in grocery distribution centers would improve by 10 percent over the next decade (Table 8).

Although organized labor has made many concessions to food industry management in the 1980s with respect to both wages and benefits, only 39 percent of the executives predicted that labor's power base would continue to erode over the next decade to the point where most retail chains would be non-unionized (Table 8). In fact, the current shortage of part-time labor due to a stronger economy and decline in the number of high school aged youths prompted 86 percent of respondents to forecast that within ten years wages for such entry level employees will move significantly above minimum wage.

Other operational trends have resulted from shifts in American demographics and lifestyles which have, in turn, led to dramatic shifts in consumer purchase patterns. Reflecting these shifts, over half the executives predicted that the fresh produce share of supermarket sales will double over the next decade to nearly 17 percent of sales. Conversely, executives forecast that in the next decade fresh meat sales will decline from about 20 percent of total sales to under 15 percent, and that the largest component of fresh meat sales will be poultry, not beef (64 percent and 78 percent of executives, respectively). In fact, almost half the executives predict the latter development to occur within five years.

Implications for Food Distribution

The food industry executives felt strongly that the most significant changes in the 1990s were likely to occur in technological areas. Electronic technologies are forecast to alter the shape of the food industry from communications and sales to distribution and merchandising. The new information resulting from these technologies is almost certain to tighten coordination among food industry firms and to improve lagging food industry productivity at all levels. Such productivity gains should lead to improved profitability for food industry firms, lower prices for consumers, or, likely,

Table 7

Operational Developments: Advertising, Promotion, Branding

	By 1990	By 1995	After 1995	Never
	- - - % of all responses - - -			
Manufacturers will shift primary emphasis in advertising from national TV to local cable TV.	21	35	23	15
In-store advertising revenues from manufacturers will account for 10 percent of retailers' operating profits.	15	29	19	31
The number of manufacturers' coupons distributed will decline significantly.	27	25	15	29
New product introductions will level off.	39	23	17	17

Table 8

Operational Developments: Labor and Sales Distribution

	By 1990	By 1995	After 1995	Never
	- - - % of all responses - - -			
Output per man-hour in grocery distribution centers will increase by 10%.	39	47	11	2
The power base of organized labor will continue to erode so that most chains will be non-unionized.	8	31	23	33
Wages for entry level part-time employees will move significantly higher than minimum wage level.	45	41	4	8
Fresh produce's share of sales will double (now about 8.4%).	25	31	17	21
Total fresh meat sales (now about 20 % of sales) will drop below 15% of sales.	33	31	11	21
Fresh poultry will have the highest share of fresh meat sales.	49	29	13	8

both. To understand and make most effective use of the new information, however, food industry firms will require an increased commitment to education and training. Food retailing firms, in particular, will need to look beyond the store ranks as their traditional source of senior managers. College educations will become increasingly critical.

Technological forces also underlie many of the key changes that executives forecast for food industry structure and operations. The great retailer dominance, predicted by many executives, in overall manufacturer-retailer relations was attributed principally to improved retail scanner technologies for data gathering and analysis. Such marketing and merchandising information was once primarily in the domain of the manufacturer. There was a strong plea from executives, however, for assistance in interpreting the enormous quantities of data already being generated by today's electronic technologies. In the future, "data overload" is likely to worsen. There will be greater roles for academics, private research firms and governmental agencies to provide the necessary interpretation, both public and private, of these new information sources.

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