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9. ABSTRACT

Consumers purchase food in a variety of methods, methods which are in the process of continual change. The market for food eaten away from home is growing rapidly, and now approximates 20 percent of food sales. Food sold through small "convenience" retail outlets has expanded from almost zero in 1957 to 4 percent today and is expected to double that figure to 10 percent of total food store sales by 1980. Yet it is the supermarket that continues to dominate food sales in the U.S. food distribution system. In 1972 supermarkets for the first time exceeded \$100 billion in sales.

Chain and combination stores accounted for about \$50 billion; independent grocery and combination stores accounted for \$52 billion. Specialty stores sold an additional \$6 billion.

The past 15 years or so have been described as a period in which supermarketing has come of age. During this period retail food distribution has both expanded and consolidated. Sales of food stores has increased: in current dollars, volume grew 120 percent from \$42.9 billion in 1956 to over \$100 billion in 1972. Meanwhile, the number of food outlets declined by 34 percent, from 310,000 to 204,900. Supermarkets continued to capture share of market from smaller stores, accounting for 77 percent of all grocery store sales in 1971.

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CURRENT SITUATION AND EMERGING
TRENDS IN U.S. FOOD MARKETING

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CURRENT SITUATION AND EMERGING TRENDS

IN U.S. FOOD MARKETING

Introduction

Consumers purchase food in a variety of methods, methods which are in the process of continual change. The market for food eaten away from home is growing rapidly, and now approximates 20 percent of food sales. Food sold through small "convenience" retail outlets has expanded from almost zero in 1957 to 4 percent today and is expected to double that figure to 10 percent of total food store sales by 1980. Yet it is the supermarket that continues to dominate food sales in the U.S. food distribution system. In 1972 supermarkets for the first time exceeded \$100 billion in sales.

Chain and combination stores accounted for about \$50 billion; independent grocery and combination stores accounted for \$52 billion. Specialty stores sold an additional \$6 billion.

Trends in Food Retailing

The past 15 years or so have been described as a period in which supermarketing has come of age. During this period retail food distribution has both expanded and consolidated. Sales of food stores has increased: in current dollars, volume grew 120 percent from \$42.9 billion in 1956 to over \$100 billion in 1972. Meanwhile, the number of food outlets declined by 34 percent, from 310,000 to 204,900. Supermarkets continued to capture share of market from smaller stores, accounting for 77 percent of all grocery store sales in 1971.

During this period supermarkets have become larger. In 15 years the median selling area of new supermarkets increased by over 50 percent from 11,700 to 17,700 square feet. New stores are averaging about 30,000 sq. ft. of selling area. Stores have become larger in part to accommodate an increasing array of items marketed by food processors. The typical supermarket in 1971 carried 60 percent more items than did its 1956 counterpart -- 8,000 vs. 4,800 items. This broader assortment included an increasing representation of general merchandise.¹ Supermarket operators generally have welcomed the opportunity to market new products and additional brands. Food processors seek growth above the rate of population increase. They offer, and aggressively promote, to the public an increasing variety of items for which shelf space is required. In addition, many store operators are shifting to full-case shelf stocking, implying greater space requirements for a

1. General merchandise (Non-food items): Percentages of supermarkets carrying selected non-food lines, according to Progressive Grocer: Housewares 88%; School Supplies 86%; Stationery 76%; Toys 65%; Books 43%; Garden Supplies 37%; Records 32%; Fresh Flowers 20%.

given product line. Expense ratios increase faster than margins on foods, and food stores are attempting to supplement food assortments with higher margin, general merchandise items. Retailers are under pressure to increase dollar volume while maintaining margins. Large stores are generally believed the best way of accomplishing this goal. As labor costs increase there is increasing incentive to substitute capital for labor, best accomplished in a larger supermarket.

Operations: Food retailing firms have experienced a period of low profits. For all food chains, operating profit has declined by 53 percent in the last 15 years, from 1.97 percent of sales in 1956 to 0.92 percent in 1971. Average return on net worth showed more resistance to decline, but fell by 38 percent from 14.40 percent in 1956 to 8.88 percent in 1971. Latest available information shows, for instance, that 28 percent of the nation's food retailers in the third quarter of 1972 were operating at a net loss. A study of food chain operations, which include warehousing and store functions, reveal the key elements that combine to cause low profitability (see Table I). Net income after tax in 1971-72 was .83 percent. Earnings as a percent of net worth was 8.93. Both measurements are lower than the average of all U.S. businesses. Intensive price competition caused mainly by rampant inflation and by large numbers of competing stores are the principal reasons for low retail profitability. In this competitive setting retailers have experienced difficulty in passing along to consumers in the form of higher prices increased operating expenses and increases in the prices they have had to pay manufacturers for the food they sell. Table I reflects the increase in the largest single expense item of supermarkets, payroll. It has increased from 10.51 percent of sales in 1967-68 to 11.38 percent in 1971-72. Not all expense items have risen, however. Promotional activities, purchases of services -- both large expense items -- have declined. Costs of construction and repair are increasing.

Profitability varies among different classes and types of food retailing firms -- the chains, independent store operators, convenience stores, stores of varying size and merchandising mixes. Large chains have been the lowest profit earners in recent years, averaging in 1972 0.6 percent of sales, as a result of having engaged in intensive price wars. There are exceptions to this generalization. Some firms, for instance, have emphasized large stores, personal service, a broad variety of items, and consumer-oriented practices including open-dating and unit-pricing of products. They have profited above the average of companies of comparable size. Convenience stores are in general the most profitable, although they represent only 4 percent of total food sales. Independent store operations are more profitable than large chains because they have tended to avoid across-the-board price discounting and have maintained customer promotion, services and other practices that probably have increased sales volume.

The federal government's recent controls over retail profit margins as part of the Economic Stabilization Program have impacted upon profits. But in a survey of retail executives, 62 percent expressed the view that intense competition rather than controls has been a much more important force in causing low profits. Many executives place particular blame for low profits on their attempt to compete against price discounting programs of large

TABLE I

	1967-68	1968-69	1969-70	1970-71	1971-72
GROSS MARGIN	21.46%	21.48%	21.31%	21.39%	21.53%
Expenses					
Payroll	10.51	10.53	10.65	11.09	11.38
Supplies	.88	.90	.92	1.01	.94
Utilities	.75	.73	.71	.74	.78
Communications	.07	.08	.07	.07	.08
Travel	.10	.12	.11	.11	.10
Services Purchased	1.33	1.22	1.36	1.31	1.25
Promotional Activities	1.35	1.49	1.43	1.32	1.20
Professional Services	.05	.05	.05	.10	.07
Donations	.03	.03	.02	.02	.02
Insurance	.46	.51	.55	.60	.64
Taxes and Licenses (except on income)	.87	.92	.94	.92	.90
Property Rentals	1.69	1.58	1.52	1.49	1.46
Equipment Rentals	.09	.10	.10	.12	.12
Depreciation and Amortization	.89	.84	.82	.85	.86
Repairs	.51	.51	.52	.59	.60
Unclassified	.65	.58	.63	.68	.74
Credits and Allowances	—	—	(-.22)	(-.54)	(-.55)
Total Expenses before Interest	20.25%	20.19%	20.18%	20.47%	20.59%
Total Interest	.74%	.70%	.69%	.75%	.70%
Total Expense including Interest	20.97%	20.89%	20.87%	21.20%	21.29%
Net Operating Profit	.49	.59	.45	.19	.24
Other Income or Deductions					
Credit for Imputed Interest	.66	.63	.59	.58	.56
Cash Discounts Earned	.56	.62	.60	.58	.58
Other Revenue, Net (including Profit or Loss on Real Estate)	.16	.19	.22	.38	.19
Total Net Other Income	1.38	1.44	1.41	1.54	1.33
Total Net Earnings before Income Taxes	1.87	2.03	1.86	1.73	1.57
Total Income Taxes	.88	1.01	.94	.87	.74
Total Net Earnings after Income Taxes	.99	1.02	.92	.86	.83
Earnings as a Percentage of Net Worth					
After-Tax Earnings	9.20	9.72	9.34	8.88	8.93
Number of Shares	12,510	12,510	12,510	12,510	12,510

...of 1968-69...
 ...of 1969-70...
 ...of 1970-71...
 ...of 1971-72...
 ...of 1972-73...

retail corporate firms.

Consumers who are questioned concerning their opinions toward profits reflect lack of understanding of food retail companies' performance. Consumers express the view that food retailing profits are excessive, that they are stable and that after-tax net income on sales is about 20 times the actual figure. In fact, retail profits are low, and have been declining for several years. Moreover it may be that profits are too low to attract investment and to generate sufficient retained earnings for the implementation of needed facilities and procedures designed to streamline methods of food distribution in order to lower costs. There may be valid reasons for consumers' dissatisfaction with retail store operations, but profiteering clearly ought not to be one of them. Food retailers have cooperated with the government in its efforts to achieve food price stability, and are supportive of the Economic Stabilization Program when used to reduce inflation by selectively controlling industries and bargaining units that fail to respond to voluntary guidelines. Retailers profit least in periods of rapidly increasing operating costs and wholesale food prices, and they have demonstrated interest in controlling inflation.

With respect to the profitability of retail operations by departments -- grocery, produce, meat and non-foods -- in general, supermarkets earn little if any profits in groceries and meat, modest profits in produce, and hope to improve profitability by earning higher profits in general merchandise.

Trends in Food Wholesaling

Wholesaling represents an important segment of activity in the food industry. All large and most medium-sized supermarket chains operate their own warehouses and have integrated the wholesale and retail function. In 1963 there were 1,977 general line grocery wholesale companies with combined sales of \$11.7 billion. In 1972 there were 1,733 firms producing \$31.3 billions in sales. About 600,000 workers were employed in food wholesaling establishments in 1969.

These firms are the prime source of supply for independent supermarkets, local chains, convenience stores and a growing number of chain stores.

Profitability of wholesalers in 1972 was slightly greater than those of food retailing companies, although traditionally wholesalers have been less profitable than retailers. Avoidance of recent price discounting by affiliated retailers accounts for higher profitability.

Products handled by wholesalers has increased from 2,470 items in 1950 to 7,775 items in 1972. There is a substantial expansion in frozen food facilities. The trend is toward providing retailers with a complete line of products, including meats, health and beauty aids, and general merchandise. A major development is the activities of wholesalers in assisting the independent retail field in the planning, financing, construction and operation of larger supermarkets.

The Trend Toward Convenience Foods and New Products

Food processors in coordination with farmers, assemblers, wholesalers and distributors enable most foods to be available on a year-round basis rather than during the local production season. Much of the food sold is highly processed and can be readied for consumption with little effort. Consumers may choose to no longer shell peas, clean and de-vein shrimp, cut and squeeze oranges, clean and cut up poultry, or perform hundreds of other kitchen tasks. Further, consumers can purchase completely prepared meals which need only be heated and served. An example of the increase in processing is indicated by production trends for frozen foods which have increased over 10 times since the end of World War II.

The number of items carried in the average supermarket continues to increase. About 20 new or modified products are offered retail buyers each day of the year. The varied forms of products offer many different degrees of preparation, color, perishability and use.

Another example of the rise in the marketing of convenience foods is bakery products -- cake, cookie and bread mixes. A typical supermarket now stocks over 100 such items (including flour) compared with less than 20 flour and mix items thirty years ago. Convenience foods contribute to leisure in living and meet the needs of women who work away from home. In 1969 women represented 38 percent of United States Labor Force compared to 31 percent in 1950. An example of the manner in which convenience foods save the homemaker's time is shown in an estimate of the costs and the number of hours in time required to prepare a typical menu for a family of four for one day.

COST OF MEALS FOR A FAMILY OF 4 FOR 1 DAY

	In Money	In Time
Home Prepared	\$4.90	5.5 Hours
Partially Prepared	\$5.80	3.1 Hours
Ready to Serve	\$6.70	1.6 Hours

Food manufacturers, especially the largest, operate under policies of growth and high profit expectations. Retail companies have in a sense responded to initiatives of manufacturers by providing wholesaling and retailing facilities and systems to accommodate new product introductions. The role of retailers in this sense has been passive. In recent years retailers have seemed to view the acceptance of new products as profitable opportunities. Consumers have appeared willing, if not eager, to accept new products that are heavily promoted by manufacturers and offered to both retailers and consumers at low introductory prices. The growth imperative of manufacturers creates a significant force in shaping the present and future form and method of retailing and wholesaling. The role

of the highly developed advertising industry and commercial television are factors of incalculable importance in the growth of the U.S. food system which is characterized by brand proliferation and new product introductions emphasizing added-values.

Consumerism, the public concern about the nature of the U.S. food system, is causing the industry and government to question and challenge many practices thought of as "marketing excesses." Issues relating to advertising, the use of food additives, packaging, labeling, nutritional awareness, product dating, sanitary and wholesome manufacturing and distribution practices are being focused upon by food companies and distributors. Already there have been radical changes made by firms operating in the food system in response to society's changing attitude toward the food industry. The industry is coming to be generally viewed as a quasi public-utility, the nation's feeding mechanism with a responsibility for providing adequate nutrition for all citizens at reasonable prices. The nature of the food system in the next decades will be shaped largely by the forces of consumerism.

The Issue of Productivity

The food industry, as the nation's largest industry, as with the rest of the American economy, is confronted by a problem in improving man-hour output at a rate that will keep ahead of anticipated increases in wages and other costs. During the 1960's productivity in the U.S. private non-farm economy rose at an average of annual rate of about 2.8 percent per annum. Since 1967 the rate of annual improvement has slowed. In 1969 and 1970 the rate of advance was less than one percent per annum.

Improving the rate of productivity advance throughout the economy will be difficult to achieve in the face of several forces: The shift of employment from manufacturing where productivity is relatively high to employment in service and government where productivity is relatively low; the growing disenchantment with science and technology among many elements of society; the decline of the Protestant ethic of work for work's sake; and the policy of incorporating into the work force many of the disadvantaged groups in our society whose skills and productivity may be low.

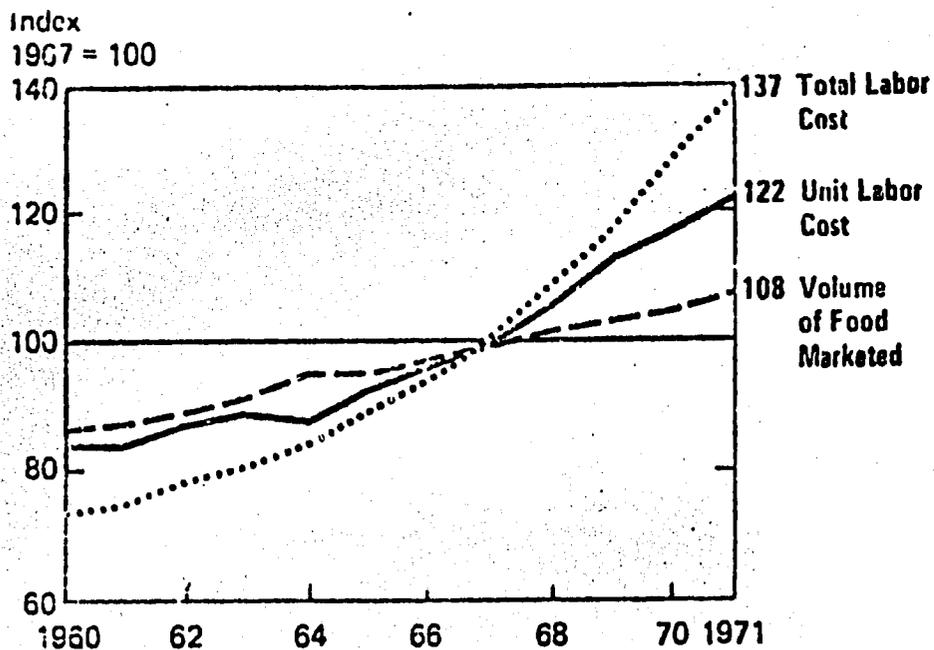
Productivity improvement as a goal of food retail managements is, and must continue to be, balanced against other consumer preferences -- service, product variety, as well as low prices. The addition of a service department in a retail store, will reduce the productivity of store labor on an output per man-hour basis.

The food industry possesses wage-price problems that relate to the productivity problem. Wage rates have been advancing in many sectors from 10 to 30 percent per annum under contracts recently negotiated with unions. Forecasts made by the Bureau of Labor Statistics for the decade ahead indicate that productivity in the food industry will probably rise at a rate between 2.6 and 3.5 percent per annum, lower than improvements in productivity are likely to be.

The divergence between the trend in productivity and wage rates is sufficient by itself to produce a substantial increase in food prices. Add to this the inflationary effect of the possible unionization of farm workers, the impact of consumerist measures which have focused on the food industry, and the effect of environmental controls affecting the use of cans, bottles, and rubbish, and there results a level of cost pressure which will pose a major challenge to the industry -- however valid and beneficial these developments may be.

Rising prices create problems for any industry, but in the food industry they are of special concern to the public, not only because food represents the largest single component of the consumer's budget, but also because the food industry is basically a "pass-through" industry. When costs increase in other industries, rising imports or reduced consumer purchases may moderate the impact of the increase. But when costs rise in the food industry, people still must eat and foreign imports offer no respite. The result is that the American consumer pays for lowered productivity and higher costs in the food industry.

Another way of viewing the impact of labor costs on food industry productivity performance is presented in the chart below:



Reports reflecting warehouse productivity in terms of tons per man-hour reflect recent stable or declining performance. Reasons for low productivity include the increase in food variety and number of food items stocked, change in the nature of product mix adding several products that vary in bulk, weight, handling characteristics, possible reduced employee effort, and a slackening in the rate of technological progress.

In the entire period from 1929 to 1958 when food retailing shifted from service to self-service permitting the most significant improvement

in productivity, the rate of improvement in man-hour output in food wholesaling and retailing averaged only 2.8 percent per annum. The future will require important breakthroughs in organization and technology if there is to be a marked increase in man-hour output.

Potentials for Improved Productivity

There are a number of steps that are being taken by the industry to become more productive. The most significant changes that will be made will come about through greater cooperation between the component parts of the food system -- farmers, processors, wholesalers and retailers. There is a growing recognition by managements throughout the food industry of the need to view the movement of food from farm to table as a single system of interrelated and interconnected parts. Efforts by individual companies or single sectors of the food system will not be able to cope with the problems which impede productivity advance in the industry.

Specific ways productivity can be improved:

Warehousing: Sophisticated automated devices promise improvements in the functions of receiving, storage, selection and replenishment. Because these changes are costly and cannot be built into existing structures, changes of this kind will come slowly.

Meat Processing and Distribution: Moving more rapidly than automated warehouses is the shift of meat processing from the retail store to a central facility operated by a chain, wholesaler or meat packer. About 20 percent of chain organizations have meat distribution centers, and almost all chains are planning for them. Advantages of central meat cutting include:

- * Management control. It is difficult to control numerous meat cutting and packaging operations in back rooms of stores.
- * Better utilization of mechanized equipment.
- * Improved refrigeration and sanitation facilities contribute to longer product shelf-life and lower costs of handling and packaging.
- * More profitable allocation of meat cuts shipped to stores by responding to customers' varying demands.
- * Labor-saving potential. Cost savings estimates vary according to the extent to which meat is centrally fabricated. The centralization of all cutting and packaging functions promises a savings of about 3¢ per pound, compared with the conventional retail cutting operation. It is important to realize that at present

probably less than five percent of all meat is centrally packaged to the ultimate consumer package. Perhaps as much as 30 percent of meat is centrally processed into sub-primal cuts (beef carcass cut into about 20 cuts), with a savings of 1.2¢/lb. compared with the conventional method.

Retailing - Manufacturer Cooperation: An important development that will be implemented during the next five years is the universal product code (UPC) source-marking of food packages by manufacturers. Source-marking will eliminate the need for price marking individual food packages. The symbol will be read by a scanner at the retail checkout which translates a 10-digit UPC number. Code numbers are assigned by the Distribution Number Bank. The first five digits identify the manufacturer and the second five, the item in the product line. The system is expected to greatly increase supermarket productivity by making technically and economically feasible automated checkout systems.

Electronic checkouts in supermarkets are expected to be in general use within the decade of the 1970's. Benefits accruing from the electronic checkout are: speed of checkout, ease of accounting for cash, checks, coupons, and pilferage. When the automated checkout is used in conjunction with the UPC system, store ordering and shelf allocation procedures can be accomplished faster and with greater accuracy.

Distribution Practices: One of the most important goals of the industry should be the unitized shipment of loads from manufacturer to wholesalers and retailers. It requires about four hours to unload a deadload trailer compared to 30 minutes if the shipment is palletized. Data is not available showing the extent of unpalletized shipments and the extent of rehandling due to a utilization of varying sizes of pallets throughout the system, but the inefficiencies are known to be significant.

Standardization of shipping cartons is another opportunity for improved productivity. A study of a large chain's grocery warehouse revealed 2,587 different sizes and shapes of shipping cartons. The same size can was found packed in six or more different sizes of shipping cartons. There are 1,400 different container sizes in use in the fruit and produce industry. Because cartons do not match pallet sizes, present modes of shipping fresh fruits waste as much as 40 percent of total shipping space. Different sizes of cartons is a barrier to the development of automatic warehousing. Needed is a completely modular system in which retail pack, cartons, pallets, railroad cars, and trailers all conform to a basic module designed to ensure maximum efficiency in distribution.

Transportation costs during the 1970's are almost certain to rise faster than prices in general. The industry needs to

experiment with the unit train, to improve car turn around and usage; backhauls must be developed to more fully utilize equipment; and detention time must be reduced by better scheduling.

LaLonde (Ohio State University) and Wayman (Georgia State University) have summarized current problems and probable changes in food distribution, on Page 10.

Projected Characteristics of the U.S. Food System in the Year 1990: Factors Influencing Changes

Economic Growth: Forces which will dominate the business environment are listed below:

1. Economic growth and increasing affluence.
2. Successful efforts to achieve economic stability.
3. Emergence of a post-industrial (knowledge and services) economy.
4. Changing attitudes toward work and leisure.
5. Education - "a learning society".
6. Shifting views on the responsibility of business.

With the increase in the demand for services an increasing percentage of discretionary income will be spent on leisure, travel and improved marketing services. As a family's income increases a small percentage of the total disposable income will be spent for food.

There may be an increase of 1.8 percent per year in employment, 0.5 percent decline in hours worked per year, and a continued rise in output per man-hours of 2.5 percent per year in a projection of 4 percent economic growth per year. Gross national product is projected to double and real income will increase by 50 percent.

Socio-Economic Factors: Demographic projections assume an expansion of the U.S. population to 270 million by 1990. Changes in the total labor force will be largely affected by: reduction of the retirement age to fifty-five, job holdings by retired persons, time spent for education, and a reduction of work hours to 35 or 30 per week.

The percentage of married women gainfully employed is rising rapidly: 4.6 percent in 1890, 32.7 percent in 1960 and 35.4 percent in 1966. By 1990 at least one-half of all married women may be employed. This rising tendency will continue to effect the pattern of food, shopping and consumption, and in particular the product-mix the market will provide. Far wider assortments of foodstuffs will be marketed, especially industrially prepared or semi-prepared

Current Problems and Probable Changes in Major Physical Distribution Functional Areas in the Food Industry During the 1970's	
CURRENT PROBLEMS	PROBABLE CHANGES
<p>TRANSPORTATION</p> <p>Deteriorating service of common carriers: - equipment shortages - erratic pick up and delivery - railroad failure - urban congestion</p> <p>Increasing productivity of labor and equipment in private transport fleets</p> <p>Reducing loading/unloading costs.</p> <p>Tracing & controlling shipments en route.</p>	<p>TRANSPORTATION</p> <p>Increased use by industry leaders of computer applications in: transport scheduling (private & public) tracking of individual shipments</p> <p>Continued efforts to secure dedicated use of transport equipment - ownership, leasing, contract unit-trains, specialized equipment</p> <p>Continued pressures to insure total system compatibility of loading-unloading facilities.</p> <p>Greater standardization of equipment to achieve better use of cube, as well as standardization of packaging, containers and pallets</p>
<p>WAREHOUSING</p> <p>Increasing productivity of labor</p> <p>Increasing utilization of owned facilities and/or reducing investment in owned facilities.</p> <p>Reducing consequences of breakdowns as mechanization and automation increase</p> <p>Increasing response time of product flows to orders.</p>	<p>WAREHOUSING</p> <p>Increased adoption by industry leaders of available technology to mechanize and automate, especially - order picking & consolidation</p> <p>Improved product flow by achieving greater standardization of packaging containers, pallets, transport equipment.</p> <p>Increased efforts to fully implement a universal product identification system to speed product flows in mechanized systems.</p> <p>Modifications in fire regulations, insurance rates, and depreciation rules to permit increase in cube for available area</p> <p>Increased attention to preventive maintenance, responsive repair capability, and contingency planning.</p> <p>General adoption of computer applications for the location and consolidation decisions.</p> <p>Increased use of specialized public distribution center services.</p>
<p>INVENTORY MANAGEMENT</p> <p>Reducing inventory investments while maintaining service levels.</p> <p>Increasing flexibility in location of inventories.</p> <p>Increasing timeliness of product movement information at all levels in system.</p> <p>Improving product profitability information, as products continue to proliferate, and life cycles decrease</p> <p>Evaluating "true" economic benefits of "deals" and "good buys"</p>	<p>INVENTORY MANAGEMENT</p> <p>General adoption of computer applications for forecasting and production scheduling.</p> <p>Greater use of public distribution centers, especially as their range of services increases.</p> <p>Increased availability of public distribution centers dedicated to limited product lines: frozen foods, standardized package items.</p> <p>Adoption by industry leaders of on line, real-time systems to report product movement (manual input) at retail-wholesale-processor levels.</p> <p>Greater success in tying together existing retail-wholesale-processor level inventory control systems</p> <p>General modification of accounting information systems to permit improved planning and control of physical distribution costs related to product movement.</p> <p>General adoption of inventory control systems which shift retail level activities to distribution centers</p> <p>Greater integration of buying and distribution functions.</p>
<p>MATERIALS HANDLING</p> <p>Increasing productivity of capital investment in handling equipment.</p> <p>Increasing utilization of facilities committed to unitization and containerization.</p>	<p>MATERIALS HANDLING</p> <p>Greater standardization of packaging, containers, pallets and transport equipment.</p> <p>General adoption of improvements in individual equipment. lift-trucks conveyors special handling trucks</p> <p>General adoption of improvements for unitization.</p>
<p>COMMUNICATIONS SOFTWARE</p> <p>Reduction of input errors at all points in system.</p> <p>Reduction of complexity in necessary documentation</p> <p>Simplify product identification and control</p> <p>Improve accuracy and timeliness of information for management planning and control</p>	<p>COMMUNICATIONS SOFTWARE</p> <p>Increased experimentation and application by industry leaders of automated system input devices--i.e., optical scanners and other methods.</p> <p>Greater standardization of formats and forms controlling product movements through entire system</p> <p>Increased efforts to fully implement a universal product identification system to speed information flows</p> <p>Greater integration of product movement information, with associated revenue/cost information</p>
<p>COMMUNICATIONS HARDWARE</p> <p>Increasing response times of information flows.</p> <p>Increasing productivity of capital investments</p> <p>Reducing consequences of breakdown as automation increases</p>	<p>COMMUNICATIONS EQUIPMENT</p> <p>Increased use of telecommunications links to tie retail check-out systems to retail-wholesale-processor level inventory control systems.</p> <p>General use of computer capability in management planning and for management information</p> <p>Consolidation and standardization of computer facilities with emphasis on time-sharing modes</p> <p>Increased attention to preventive maintenance, responsive repair capability, redundancy and contingency planning.</p>

foods will provide greater liberty and leisure for consumers.

Formal education through 14 years of school and colleges would have become standard as high school education is now. The combined tendencies will increase the number of institutional kitchens from the current estimated 9 million to about 17 million. The effects may be:

1. Increasing tendency to transfer cooking functions to the food-processing and food-manufacturing industries or to "central kitchens".
2. Substantial quantities of food will bypass retailing channels and move directly to institutional kitchens.
3. Devices to keep food warm and/or cold up to the moment of eating will be developed.
4. Bulk-cooking requiring semi-prepared raw materials for "instant" products, and other prepared foods will be common.
5. Obsolescence of full service kitchens in apartments.

Thus, the general pattern will work toward increasing dependence on food-processing industries.

Juveniles are significant buyers of such products as confectionaries, ice cream products, hamburgers and french fries. By 1990 the juvenile population may account for 25 percent or less of the total population. This age group on the average consumes one-fifth more calories than normal active adults. Similar prognostication can be applied to the aged. By 1990, 35 percent of the population will be over 65. Specific foods and services will be marketed to this age group.

Governmental policies, such as the negative income tax, uniform national health plans and medical and educational benefits may bring forth a more equal distribution of income and reduce poverty. This will elevate many of the poor people we have now to the middle income bracket which will increase the effective demand for high quality food and food analogs. The remaining poor people will also have to be provided for in our highly industrialized food system. Whereas the middle and upper income groups will demand more and more services, the poor will emphasize demand for physical products. The existing social regulations will be modified to allow for more equitable distribution of food and food merchandising services to lower income people.

Industrial enterprises will find it increasingly less advantageous to concentrate their production in large cities notorious for high production costs, pollution problems, and a host of social problems.

The expansion of industries into small rural towns will significantly reduce the past trend of physical outmigration from the rural area into the large cities. Continued expansion of off-farm employment will increase the number of part-time farmers and will provide the basis for larger farm-operations through acquisition or rental.

Expansion and refinement in food marketing and processing will be matched by more efficient organization, management and technology and will result in only modest increases in the number of job holders employed in the food system. Unionization of labor will increase wages paid to job holders in the food system but will have little effect on the relative end-prices of foods due to the higher efficiency of the total process brought about by technological and institutional innovations.

Technology: Patterns of technological changes expected within the next two decades and their effects on the food system in terms of five compulsions are listed as follows:

1. Economic pressure for efficiency implied in new technology.
2. Political pressure requiring greater absolute effectiveness of new technology.
3. Promise of new technology for help in dealing with social problems such as hunger and malnutrition.
4. Spur to action inherent in mere availability of new technology.
5. Using technology to ensure compliance and adoption of new technology.

The concern over "giantism" vis-a-vis "structural manyness" in the organization, manufacturing and merchandising of food products will persist into the future. By 1990, however, the issue will center primarily around efficiency and progressiveness. Thus:

1. There will be fewer but larger and more efficient food production units.
2. Family farms will resort to vertical coordination to improve their competitive positions.
3. The development of food analogs where there is a demonstrable support in terms of the efficiency criterion.
4. There will be unionization of labor in the food system. Increased labor costs will cause the onfarm production units, the processing firms and the distributors to seek more labor-saving improvements.
5. The trend toward large scale economic organization of processing and distribution activities will persist.

The use of efficiency as a doctrine in 1990 will rather redound in the interest of consumers as adequate market rules will have been structured to check unethical practices.

Indications are that by 1990 our major social institutions will have become interdependent - governmental, business, and non-profit; international, national, and state. The government will be in a position to restructure

market rules and develop requisite institutions to guide the application of technology in the food system. Areas of concern would appear to be poverty, malnutrition (both domestic and international). By 1990 the public may become impatient of inaction to deal with these problems and may show more altruism and will want to exploit technology to ameliorate problems of hunger and malnutrition. The long-range effectiveness of most food additives used in food fortification and in food analogs will be known to facilitate a better consumer understanding and use of these chemicals.

Rapid turn-out of new products to suit consumer specification will be the order of the day. Compounds used in food analogs have been discovered and by 1990 they will be used to produce infinite variety of food products. The availability of new products will thus continue to be part of the problem of changing technology. The role of marketing research will emphasize the creation of appropriate institutions to coordinate adjustment to them. Presently we seem to be concerned with the perennial problem of reaping the benefits of the new technology without paying the cost of displacing workers, capital, and other on-farm agricultural resources. On the basis of the present trend, basic agricultural commodities will undergo only minimal displacement as primary sources of food products. Many of the new food products will only be "fortified", "engineered," fabricated foods designed for specific markets.

Food technologists will continue to be able to alter food characteristics. Agricultural crops will continue to be the cheapest source of the base materials.

Sales promotion and advertising will continue to exist, and may even become an increasing amount of the total product cost to consumers. Consumers will become more accepting of advertising if the value of the advertising function increases. Sales practices, such as trading stamps, box top and give-aways are expected to decrease, but will not disappear totally. There will always be some processors and retailers who will try to shift their individual demand curves by these procedures. In general, advertisement in 1990 will take on a different character, but will continue to be important as a source of information about nutrition and the vast array of food products.

Political: The process of scientific industrialization of the food system will closely interact with a changing political structure outside and especially within the system. Past trends of concentration of political and economic influence will continue. Sectors of the system which are not effectively organized at the present will strive for and attain a more satisfying balance of power. Collective bargaining skills will be adopted as one of the main strategies to achieve this goal both at the input and at the output level of all interacting sectors. Governmental arbitration boards will function as the intermediary units and will interpret the rules under which this new form of concentrated exchange of rights and obligations will take place.

Other Social Implications: Computer science will facilitate a periodic compilation of social indicators which will provide indexes of public satisfaction with certain incidence of food products, their characteristics, chemical contents, etc. These indicators will help give social

problems more visibility and thus make possible more informed judgment about priorities affecting such things as consumer protection and consumer education. The issues of consumer protection and economic organization-structure, conduct and performance are inextricably mixed. Manifestly, the growing public intolerance of the manipulative practices of marketing will call forth a more humane restructuring of the rules to regulate market structure, conduct and performance. Businesses will, in the spirit of cooperative endeavor with other institutions, respond to industry-specific social concerns.

International Policies, Development, Trade: In spite of continued international tension and cyclical economic growth abroad the U.S. is expected to account for a large part in the increase in the volume of world trade. New technologies and the establishment of regional markets will change the pattern of trade considerably. Increasing technological development abroad will compete heavily with U.S. production in domestic and foreign markets. The U.S. will be in a leading position in the development of new food products, convenience foods, and food analogs.

Trade projections indicate an increase in net exports of wheat, but above all a very large increase in net exports of feed grains. It appears that the U.S. will reduce its present position as a net exporter of dairy products both in butterfat and in solid-non-fat (S.N.F.) equivalents to a balanced situation. If per capita consumption of dairy products should decline at a slower rate, imports in both fat and S.N.F. could become necessary.

Economic development in the LDC's will expand the effective demand for food and non-food commodities. These countries will on the other hand be effective competitors in traditional U.S. markets at home and abroad. In spite of heavy political pressure against foreign food imports there probably will be no additional deviation from the principles of GATT, since further trade restrictions on part of the U.S. would reduce the chances for U.S. exports.

Demand - Supply Conditions in 1990: Further consumption per person increases for most products will not be great: poultry, beef, cheese and some skimmed milk products are virtually the only major agricultural commodities for which significant increase in per capita consumption can be expected. Further reductions in per capita consumption are expected for bread grains, pork, mutton and lamb, and eggs. Consequently, the main cause of increased demand for most products lies in population growth.

The main factor determining the production-consumption relationship of grains will not be human consumption but livestock feed. The increased production of beef and poultry account for the greater part of the extra requirements, but there are also increases involved in the production of pork, eggs and milk. Dairy cattle numbers will decline, but milk yields (with less fat) per cow will continue to rise. An increase in the number of beef cattle has been projected.

The Future of Food Retailing

Retailers and wholesalers, as the last link in the complex chain of food system activities are increasingly confronted with the shifting reactions of consumers. They are also caught up in an era of intense price competition resulting in low profitability. The need for management initiatives is felt as never before. This paper has indicated a number of specific ways retailers are changing, or propose to change especially in terms of specific physical practices. There are changes of a more qualitative nature, however, that are certain to take place.

There is a decided trend toward professional management. Leading firms have staffed management groups with persons highly trained in the behavioral sciences, computer technology, marketing and distribution skills. Professionalism is certain to accelerate the trend toward effectiveness in creating more efficient and productive facilities and food handling systems, skills in communicating to a more challenging government, shopping public and the communications industry.

In response to rising costs and relatively low profitability professional management will utilize its capability in designing new ways to distribute food with highly mechanized systems as a substitution for employees. The industry is certain to become more capital intensive. The result will be still larger supermarkets; stores which will reflect a changing concept of retailing. The term given to this emerging model of food retailing is the super-store. Indications are that within the decades of the 70's and 80's the super-store will characterize U.S. supermarketing. Today the super store dominates industry construction. Primarily food oriented, with large general merchandise departments, these stores range in size between 25,000 and 50,000 (and larger) square feet.

The conventional supermarket concept is an approach to retail distribution which is designed to serve the consumer's total needs for food, laundry, and household maintenance products, by providing a comprehensive assortment of these products in a single store and by utilizing efficient, low-cost methods of distribution. The super-store concept is one which is aimed at serving the consumer's total needs for all types of routine purchases, including those now served by the supermarket and an extensive range of other products and services. The key difference between the supermarket and the super-store concept lies in the breadth of sets of consumer needs to be served. "Routine needs" is explained as the range of product and service needs that must be satisfied routinely. These involve purchases that: the consumer makes at regular intervals; involve relatively small amounts of money per item; satisfy relatively well-defined needs (brands and varieties are generally familiar to the consumer); the consumer wants to make as efficiently as possible, with primary attention to convenience and cost.

It should be recognized that the development of super-store distribution is based primarily on the pressure for firms to decrease distribution costs. It remains to be seen whether the consuming public will accept these changes

in shopping modes. The industry claims consumers want to "simplify" shopping, to make the experience more "efficient." It may be that these assumptions are invalid. If so the pressures of consumerism can be expected to intensify.

It is estimated that the dynamic growth of the super-store will result in the closing of about 18,000 obsolete supermarkets within the next decade, 50 percent of existing supermarkets. It also implies an increase of about 20 percent in the number of supermarkets closing each year.

Finally, growing professionalism of food companies can be expected to accelerate the awareness that only by working toward greater cooperation and coordination with other segments of the food system can needed responses be made to pressing problems. The challenges to retailers include not only effective operation of businesses, but the development of communications with a challenging society. Positive responses must be made in terms of industry behavior when they are recognized. Beneficial behavior must be preserved by effective advocacy.

There are signs of developing food industry responsiveness. Trade associations have included in their convention program planning a commitment to illuminate and discuss current issues. Several ad hoc projects of the type suggested in this paper are under way. The recent development by the FDA of nutritional labeling proposals is involving members of the industry and consumer groups in a creative and positive way. The greater effectiveness of industry committees has quickened the pace of activity in moving toward a universal product code.

Professional managers will recognize that the industry cannot simply listen better, communicate more clearly, and pursue projects on an ad hoc basis. These activities only have meaning as tools for the purpose of planning and taking action where necessary. The issue before the food systems and other major industries is whether the full range of needs and goals of all of our citizens can be met with our present institutional structure or whether it will be necessary to institute radical reforms in this nation leading to a major transfer of decision-making power out of the hands of those in the private sector. It is clear that systems management techniques will be used to plan for the future: the larger question is whether the food industry and other major business components in our society will play a leading role in the decision-making process, along with representatives of government and the public at large.

For business to overtly take the initiative in cooperating with government is, of course, almost without precedent. Steps that from a short-run view might appear to be the altruistic concession of rights, freedoms, and legitimate prerogatives to the public sector must, however, be recognized for what they actually are in many cases: the singular alternative strategy available to the industry for maintaining maximum control over its destiny and to be involved as fully as possible in determining how the goal of providing each citizen with an adequate diet shall be met. The industry has no other alternative than to accept the concept that in order to preserve what are often termed "basic freedoms", certain other

"freedoms" must be shared.

It is realized that tokenism in the guise of gradual or orderly change is also unacceptable. There is a past pattern of empty gesticulation and posturing with no intent to act on the part of some legislators in proposing bills, industry leaders in making speeches, governments in convening high level conferences, and industry critics ignoring progress in favor of the attention that crying doom brings. The cynical preemption of issues with much talk and little action is a widespread and highly developed technique. It is true that change cannot always come quickly and that the creation of a workable systems approach must be deliberate and carefully done. But managers are coming to realize that there can be no excuse for small steps when large strides are both possible and needed.

A fair and well-organized system that incorporates these new directions will not eradicate the industry's freedom to innovate. Truly useful, new forms of foods what include advancements in packaging, methods of storage and preparation, nutritive improvements and effective distribution will continue to be profitable where they have been so in the past. With a clarified goal structure, they should even prove more profitable than before. Increasingly the tests will be, however:

- * An assessment of whether the long-run and broader needs of consumers are met by change and innovation.
- * The recognition that no situation, be it one of change or the preservation of the status quo, is without implications in terms of opportunity costs: What effort goes into frivolous change is lost for the more substantive kind.

In many ways, these two issues are at the root of present food industry problems. We have always as a nation had a great deal of wealth in natural resources and have until only recently had the particular kind of economic dynamism that accompanies an expanding population and geographic frontier. This has permitted a wide range of tolerance for certain negative excesses of wealth and disorganization in the economy. With a maturing economy and under a political system that has promised and convinced its population of the benefits in and rights to participation and profit for all, the nation has simply arrived at a point where it must begin to use resources for these purposes more carefully and equitably.