



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

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

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

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

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

The food industry—2000 A.D. revisited

Contributed by JARVIS L. CAIN

What will be the nature of the food industry in the year 2000 A.D.? What will be the roles of retailers, wholesalers and manufacturers? The author presents his views of future food processing and distribution practices and thereby poses a challenge to the industry to maximize its opportunities for growth during the next three decades.

Introduction

This paper will develop a conceptual framework for the food industry in the year 2000 A.D. The approach will be to start with food consumption and work back through the distribution and processing systems for food products to the farm. The intent here is not to dwell at length on any individual product or segment of the system. The major focus will be to present the author's concept of fundamental changes forthcoming in the food industry of the future, and to relate these changes to the planning needs of food firms today.

The original draft of this paper was completed in January, 1970. Since then it has been presented to numerous business executives, and academic and government personnel for review and discussion. While the paper's main thesis remains unchanged, the author has picked up a number of excellent comments and will weave them into the discussion which follows.

Food Consumption

Much has been written concerning the food consumer of the future. His or her incomes, tastes and preferences, and living and working patterns have been analyzed in great detail. However, unless there is a complete reversal of trends, several assumptions relative to future food consumption can be made:

1. There will be many more food consumers in the year 2000 A.D. than today.
2. Disposable incomes will be much higher.
3. There will be little change in the areas where people live, hence life will be more within the urban context than today.
4. The housewife will spend an increasing amount of her time in a myriad of activities away from the home.
5. The housewife will want as little personal involvement as possible in supplying the family with its food needs.
6. The place of the meal in the social structure will

tend to be diminished to the level of a simple intake of nutrients necessary to sustain life.

7. Emphasis in the entire human feeding and eating operation will be speed and convenience.

These assumptions have received considerable comment, especially numbers 5, 6, & 7. However, most of the criticism was of an emotional nature expressing the wish that such conditions would not come to pass, but at the same time realizing that their appearance on the scene was inevitable.

A number of observers commented upon the fact that with shorter work weeks the housewife would have more time to spend in meal preparation. However, except for an occasional creative fling at a meal preparation, which she will want to control the timing of, the housewife of 2000 A.D. will choose to spend her increased leisure time in places other than the kitchen.

Given the above-listed assumptions, the housewife will tend to think of supplying her family's nutritional needs with complete meals prepared and distributed as a unit. This is compared with purchasing meal components in the raw or semi-prepared state completing preparation of the meal at home.

The concept of the completely prepared, either ready or nearly ready to eat meal is not new. The "TV Dinner" has been with us for some time. However, the concept of the complete meal as a central means of feeding a vast majority of the population most of their food needs is new. For a typical family of four, the average housewife will have to provide 84 meals a week, regardless of where they are prepared or consumed, as she does now. The major difference will be that she will want to get as many of the meals as possible to her family with a minimum of effort on her part.

At this point a digression is necessary lest a certain portion of the readers rise up and carry the author away

DR. JARVIS L. CAIN is currently on sabbatical leave at the University of Hawaii until June 30, 1972. From July 1, 1967 to June 30, 1971 he was Associated Professor of Agricultural Economics University of Maryland. Prior to that time he was Assistant Professor of Agricultural Economics, University of Maryland (1964 to 1967) and Extension Specialist in Food Merchandising, Ohio State University, (1959 to 1961). Dr. Cain is a member of the American Farm Economic Association, American Marketing Association and the Chicago Agricultural Economists Club. He has performed as consultant to several private businesses, and was also Market Analyst, Overseas Division, International Harvester Company, from 1961 to October 1964.

kicking and screaming in a straight jacket. It is not the author's intention to forecast that all meals for all individuals will be completely portion controlled, precooked, and entirely uniform in nature, and that man in his electronically controlled existence will march robot-like for mass feeding at prescribed times. Shades of "1984"!!

The major objections to this central idea will be put forth by those who enjoy fresh items and those who wish to demonstrate their individuality by purchasing meal components, preparing and cooking them in their unique fashion, and enjoying their meals as they and their forefathers have done. What is being discussed here is how the large portion of meals will be provided for the majority of people in this country.

The housewife of 2000 A.D. will have available to her a complete line of fresh items, condiments, beverages, and specialty items in addition to completely prepared meals. The point of the entire discussion is that she will, for a majority of her family's needs choose the completely prepared meals. Individuality of expression may indeed be enhanced due to improvement in the quality of meal components and condiments and to concentration of creativity on a few meals instead of all meals.

Four more points need to be made before proceeding. One has to do with automation or mechanization. A second concerns itself with specifications—both quantity and quality. The third deals with transportation. The fourth relates to the state of technology. There is little doubt that the trend toward replacement of labor with capital and further utilization of electronic devices—for both information producing and regulatory function—will continue. The speed with which these two phenomena progress will vary by product and by segment of the industry. However, in order to make the concept under discussion work, they will most probably be applied at an accelerated rate.

The concepts of quality grades and portion control are not new. However, the uniform application of commonly understood quality grades and quantity specifications, determined with the consumer's wishes paramount throughout the distribution, processing, and producing system for food will be considered by most as at least mildly revolutionary.

Of course an adequate transportation system is essential to such a concept. It is easy to take this point for granted since it is impossible to move merchandise without it.

Fourth, the assumption will be made that the state of technological development in 2000 A.D. will be such that the basic items in our diet will be similar to those consumed today, i.e., fruits, vegetables, meats, etc. It is quite possible that appropriate technology will exist which would allow for the preparation of a completely synthetic diet. However, it is the author's view that the consuming public will not be ready for 100 percent synthetically produced foods by 2000 A.D. In another 50 or 100 years, our diets may consist of 100 percent synthetically produced items, however. It is possible!

Another point relative to synthetics and substitutes revolves around the issue of nutritional supplements to "natural foods" presently used in our diets. Artificially produced nutritional supplements or those extracted from "natural foods" not now consumed by man; such as soy-protein, will play an ever increasing role in the nation's food distribution picture. In addition to their non-perishable nature and potentially lower cost per serving as compared to natural foods, these nutritional supplements can be extremely valuable in helping to insure every citizen in this country an adequate diet. With the failure of present welfare and food assistance programs to stop hun-

ger in America, possible consideration will be given to providing nutritionally balanced meals at low or no cost to the nation's poor.

Discussions such as this lead to the question of whether or not a society can legislate good nutrition for rich and poor within the free enterprise system. Answers to such questions are outside the scope of this paper; but could, indeed, have a profound effect upon the institutional structure for food distribution in the year 2000 A.D.

These four concepts will probably be given only passing mention throughout the rest of the paper. However they are absolutely essential to the working of the conceptual system under discussion.

According to the U.S.D.A., about 80 percent of our current personal consumption expenditures for food is for use at home and the remaining 20 percent is away from home consumption of food. The author would submit, that, by the year 2000 A.D., this proportion will be about 50-50, and the trend will be toward a higher percent being spent away from home than at home.

Some discussion arose at this point relative to both the proportion of the split between "at-home" and "away from home" eating and the use of dollars as a measure for volume of food purchased. Those who argue about the precision of the split on where food will be consumed, lose the point of the argument in detail. It is the trend toward "away from home" eating and food preparation which is important and not the ability to predict the precise division between the two categories. As for the point on dollars vs. units, those who argue for quantities and not dollars have a valid point. However, quantity data are very hard to come by, and the dollar information is adequate for the purpose of this article.

Let us consider briefly the composition of each of these segments. The "at home" portion of food consumption expenditures in 2000 A.D. can be described as follows:

1. Adequate supplies of beverages, condiments, and specialty items.
2. Small supplies of fresh items and portion controlled amounts of prepared basic meal components.
3. High concentration of complete meals either ready-to-cook or ready-to-serve.

This line-up of food items will supply the housewife of the future with the basic units of complete meals, together with fresh items and extra component items as needed. Also beverages, condiments, and specialty items will be available to supplement or complement the family's dietary and/or culinary needs. It will not be at all unusual for the urban housewife to call a central kitchen in her apartment complex and order the family's evening meal before going to work in the morning. Then, at a prescribed time in the evening, the family can return home to a completely prepared, ready-to-eat meal.

Much conjecture has been advanced concerning the kitchen of the future. The author is not sure of the precise form to be taken by this part of the home. However, it is certain that the fully equipped, gadget covered work room of the present will not be needed. This goes as well as for storage space for food which will be minimized in the future.

The "away from home" segment will be in one respect quite similar to the "at home" portion, and in other respects will be very different. The similarity will be in the use of adequate supplies of beverages, condiments and specialty items; while the differences will be in terms of supply of fresh items and the amount of portion controlled basic meal components. Also, the feeding institutions may assemble basic meal components for cooking and merchandising to the consumer.

Another slight digression is now pertinent. Historically,

the "away from home" feeding institution has been, for all intents and purposes, a large kitchen with an appropriate dining area. The basic differences from "at home" feeding were those of variety of menu and scale of operation. It is the author's opinion that the majority of "away from home" feeding institutions of 2000 A.D. will be as devoid of basic meal component preparation as the "at home" portion. With labor problems and pressures of mass feeding schedules, "away from home" feeding institutions will demand and get pre-prepared, ready-to-cook or partially cooked, portion controlled, basic meal components or complete meals just as the housewife will.

A closer look at types of "away from home" feeding institutions will reveal their essential differences. What the author would term "mass feeding institutions" such as hospitals, universities, homes for the aged, and governmental facilities will most probably operate quite similarly to the "at home" unit. The use of complete meals, ready to heat and serve, will most probably comprise the vast majority of these institutions' food output. To polarize the comparison, we can look at the traditional "sit-down restaurant" with its preparation of individual items and assembly into meals based on customer orders. In between these two opposites are a variety of institutions including the "fast food facilities", lunch counters, and delicatessens. The major difference is in the degree of using portion controlled basic meal components. Using quite similar basic components, different firms show individuality in terms of condiments and sauces, decor and atmosphere, service and convenience, and advertising.

A comment should be made at this point relative to market segmentation. When looking at institutional changes in the food distribution, it is difficult, if not impossible, to make generalizations for which exceptions cannot be found. Within the total evolution of food distribution institutions there are segments which are transformed at different rates of speed. When one predicts that most people will be fed in 2000 A.D. under the complete meal concept, critics hurry to point out exceptions. However, these same critics could find examples of the use of the concept today in mass feeding institutions and a variety of fast food facilities. The point is that parts of the food distribution system have adopted the complete meal concept already, and what is being proposed is a look at how most of the rest of the system will adapt to the concept by the year 2000 A.D.

Before proceeding with this discussion of projected institutional changes, it might be well to stop to briefly examine the institutional terms being used. The rest of the paper will be concerned with traditional food distribution and production institutions—retailing, wholesaling, processing and farming. If we are truly to project ourselves thirty years into the future, is it logical to project the institutions of the present into the future? The answer to this question could very readily be, NO! The paper will project existing institutional names into the future for two reasons:

1. It will be easier for most to make the transition from present to future if familiar names are used.
2. The author can offer no better substitutes, at this point.

However, the issue must be raised. It is entirely possible that one will be dealing with a completely different set of institutions designed to handle food distribution and production in the year 2000 A.D. Also, it is extremely likely that these institutions will be owned, financed, and managed by people not presently involved in agriculture as it has traditionally been known and not sympathetic to the goals of the existing "agricultural establishment". Should the present allocation of resources devoted to food distribution and production be drastically revised based

upon an entirely different kind of criteria, the implications will be profound upon those within and those outside of the food distribution system. Should the shift be made based upon strictly financial criteria, those within the system must change their non-monetary values or get out. Similarly, when resources employed in food distribution demand competitive return for their services, the nation's consumers must revise their thinking relative to their traditional cheap food policy.

Food Retailing

Current food retailing facilities are designed to supply the housewife with meal components, beverages, condiments, fresh and specialty items for further processing, cooking, and serving in the home. However, given the assumptions of this paper and the comments on food consumption made previously, then both the scope and character of activity in retail food stores will change dramatically by 2000 A.D.

Concerning the character of activity in retail food stores of the future, it follows that they would distribute beverages, condiments, specialty items, and portion-controlled units of basic meal components. However, the major food item would be completely prepared, ready-to-cook meals. Like the "away from home" feeding institutions, preparation effort will be for all intents and purposes, removed from the retail food store.

Moving now to the scope of activity in future retail food stores, a logical conclusion from the analysis to date would be for a reduction in scope of activity. As a smaller percentage of the family's food consumption expenditure is for "at home" use, *ceteris paribus*, the role of the retail food store would decrease. While it is true that there will be more people purchasing food in 2000 A.D., the decreasing percentage consumed "at home" should not increase the relative proportion of food dollars spent in the retail food store.

But, lifting the assumption of *ceteris paribus*, the situation could be quite different. Assuming that the current trend in food retailing of increasing emphasis on ready-to-eat items, plus the entrance of many firms into on site, "away from home" feeding areas continues, then the retail food store goes into direct competition with other "away from home" feeding institutions. This may even tend to accelerate the trend toward "away from home" eating. If the housewife can shop for her "at home" food needs and take home a ready to eat meal for the evening, she kills two birds with one stone. Should this change in scope of activity for retail food stores take place, then the housewife could obtain the following items from the store:

1. Ready to eat food items — delicatessen, bakery, "fast foods", complete meals, fresh products.
2. Preserved food items — complete meals and portion controlled units of basic meal components.
3. Beverages, condiments, and specialty items.

It is likely that retail food stores will carry increasing amounts of imported food products — both fresh and processed. This will come about as transportation improves and as agricultural industries in other nations emerge and become more sophisticated. Baring trade impediments, the principal of competitive advantage will operate to bring this about.

Food Wholesaling

Traditionally, the wholesaler's basic activity has been to buy in large quantities and to redistribute in smaller quantities to retailers. However, in recent years food wholesaling has moved vertically both ways—ahead into

food retailing and back into food processing. The growth of food chains and wholesale and retail sponsored voluntary organizations in recent years has moved the two institutions even closer in their operations. On the other hand, food distributing organizations have moved into basic processing for resale "as is" at retail as well as portion control work and item combination in fresh goods for institutional and retail use.

To precisely project the scope and activity of food wholesaling in 2000 A.D. is the most hazardous of any of the institutional areas investigated by this conceptual model. With the effects of both vertical and horizontal integration being felt, the normal functions of wholesaling—creation of time, place, and possession utility in all probability will be preformed within an entirely different institutional framework 30 years hence.

In order to supply the retailers with their food needs in 2000 A.D. wholesalers will have to change basic philosophy from handlers of components to handlers of complete meals. However, there is the strong possibility of direct shipment of items from the processing segment (to be discussed next) to retail stores, institutions, and consumers. Within the chain and voluntary segment of the retail food store industry, this will most probably be the case. There will be some need for the general line wholesaler to service the independent proportion of the retail store and small restaurant trade. But this will be a quite small proportion of the total. Rather, there will be a tendency for wholesalers to specialize in limited lines and cover a larger territory.

In servicing the "away from home" feeding institutions of 2000 A.D., the situation will be much the same. The large, mass-feeding institutions will probably purchase direct from the processors. The same will be true for the retail stores who have ready-to-eat meals and all the franchised and chain restaurants. There will be need to service the independent "away from home" feeding institutions but these will also be a quite small share of the business. Also, the tendency to specialize by product lines will be evident here. The matter of wholesale firms moving into portion control and partial processing work will also have its effect here.

Food Processing

Before discussing food processing as a part of the conceptual framework, it is necessary to comment briefly on two points. First, the basic approach in processing seasonal items has been to get the item processed and into some sort of container as quickly as possible. This unit or container then would move through the distribution system eventually arriving at the place where the consumer or ultimate user involves the item in meal preparation or further processing. The point is that the container stayed in its original form. However, in order for the complete meal concept to work, the individual commodity loses its identity when combined with other meal components. The result is a new identity which is a combination of individual traits plus one for the combination.

The second point is relative to methods of preserving perishable products in essentially their raw state for storage in bulk over extended periods of time. It is the author's opinion that by 2000 A.D. we will possess the technical capabilities to accomplish this task. This will allow for a division of the processing industry into two major parts—"first processing" and "further processing".

First Processing

The functions performed at this level would be to receive perishable products from the field, prepare and pre-

serve the products, and store them in bulk for use at a later date. The first processor would be dealing with large volumes of basic meal components in a preserved and partially prepared state. The facilities necessary to perform these functions would be located in areas of production and their peak periods of operation would, by necessity, be seasonal.

The point can be made here relative to the concept of "modular processing". This term envisions large mobile units which will perform most or all of the first processing functions in the field. These could be moved over large areas surrounding storage facilities and will possibly be similar to today's mobile viners for peas and lima beans which obviate the need for large fixed processing facilities.

Further Processing

The functions performed at this level would be to receive "first processed" items and combine, add to, cook, season, and otherwise prepare and package the meals or parts of meals for distribution further along the channel. At this point the discussion can get confused very easily. It will be possible for these functions to be performed at the same or different locations. Further processing can be carried out in transit. It will also be possible for retail, wholesale, institutional, fast food, and restaurant firms and others to integrate vertically into further processing. The principle is that once perishable items have been "preserved" they can move from area of production to area of consumption through varying stages of "further processing"—depending on demand. Also, these functions could be performed by many firms, a few firms, or theoretically a single firm at varying locations.

There are those who will say that such a condition would be the "death knell" of the processing industry. Quite the contrary, is true, such developments are a necessary stage in industry metamorphosis to allow it to better serve the needs of the consuming public.

Waste disposal is one of the paramount issues of the day. The disposal of containers and packaging materials, exclusive of product wastes for preserved foods is a significant portion of this problem. During the evolution from the existing to the proposed system, efforts will be made to minimize duplication of materials and to maximize utilization of containers and packaging materials which can be disposed of with a minimum of polluting effects.

Production

Farming in 2000 A.D. will be designed to furnish, to specification basic meal components. Emphasis will be on getting top yields of specified quality consistent with efficiency or operation. Merchandise will be produced under long term contract to first processors utilizing capital and technology to the fullest. Areas of production for meal components could change depending on the mix of factors mentioned above. However, they are almost sure to be far from the majority of the population centers.

Implications

The major implication from this paper is the concept of dealing in terms of complete meals instead of individual meal components in the marketing of food products. Of course, if this concept comes to fruition, then changes would be felt at every institutional level in the marketing-processing-production system for food.

In addition, it is good to pause upon occasions to take a broad look at the food industry. It gives one a chance for some introspection, and it gives the total industry a chance to look at itself. Both, then can ponder what

new directions the food industry will take in the next 30 years.

The important implication for individual firms within the food industry is to make their best judgment as to what the future shape of the food industry will be and then to find their role within the new structure and plan to move toward it. If the changes forecast in this paper come true, there will be broad new areas of opportunity opening up in the food industry. The entrepreneurial profits are there for those with the imagination to visualize

them and the courage to pursue them.

The implications here for University and government personnel are also quite clear. Those involved in research, educational and regulatory activities must keep an open mind pointed toward the needs of the future and not attempt to operate with a closed mind rooted in the past. The challenge of change will be monumental just as the reward will be to those who chose to lead and not to follow.