NEW PRODUCT DEVELOPMENT—INDUSTRY APPROACH

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ABSTRACT

Vitality of our economy today stems in part from industry’s activity in new products. Industries content to rest on past accomplishments have found themselves in an unfavorable competitive position. In our changing society we find changing needs. What is good for today would not have met the needs of an earlier time nor will it be sufficient for a future day. This is the philosophy which is necessary for corporate survival in our rapidly changing society.

New product activity may be merely innovation of old product concepts but sufficiently new to warrant research and development activity and development expenditures. As new technology develops, new product concepts which were unfeasible become reality.

Organization within a company, necessary for successful development of new products, is complex. Marketing, accounting, production, and research and development efforts must be coordinated to implement the introduction of a new product. New product activity is hazardous for there are many pitfalls. Failures are common in the market place; however, the rewards are great for the creator of a successful products.

In the beginning one can make an obvious statement. Product development or new product development is an important activity within our economic society. New has become a contagious thing, perhaps best epitomized in our auto industry where some few years back one could identify without much difficulty the model and year of a vehicle. Today one is fortunate to recognize the model, i.e. Ford, Chevrolet, etc. let alone the year. We are caught up in a situation where change is essential for economic survival.

NEED FOR CHANGE

Having had a background in the Dairy Industry, I can make some observations concerning this industry which can illustrate the necessity for change. Here is a segment of the food industry which has done a tremendous job in the production and quality aspects of the food product area. However, evidence indicates the Dairy Industry has lost some of its marketing advantage, particularly with butter. In 1960 butter consumption was 9.1 lb per person, where today consumption is less than 5 lb per person. Are these problems of the Dairy Industry because they have too long neglected the marketing aspects, including new product development? The American Dairy Association is doing a very creditable job in this area today. New products, based on dairy ingredients, are becoming more prevalent—the growth of chip dips and yogurt are examples. Presently I am using dehydrated cultured products; these are also new.

What is a New Product?

Before proceeding further I think we should agree in thinking: “What constitutes a new product?” In most instances what is termed a new product is merely an innovation of an existing or familiar product. For example, in March of 1968 the Green Giant Company introduced a line of Pork and Bean items, Brown Sugared and Molasses Ovencrock in three markets. Here is an old product but new to the Green Giant line. It was new because it was an innovation of an existing product. Rarely is a new product so uniquely new as to fit the pure definition of the term. Therefore, a new product might be considered as one in which there is sufficient innovation to warrant development cost and can make a spot for itself in the market place.

In recent months and years, development of highly nutritious products from inexpensive raw material has received considerable attention. It is becoming increasingly apparent that this is one area of new product development which must be considered if we are to solve problems of world hunger or even hunger and malnutrition in America.

Criteria for new product success

There are several criteria which a product must meet on the road to becoming a new product in the market place. Most importantly, is there a market need? Green Giant defines the seven criteria of new product success factors as: profitability, distinctiveness, adaptability, trade acceptance, consumer acceptance, volume, and areas of competition.

Reference has been made from within our company that we are “marketing oriented.” I would like to rephrase this to say we are “market needs oriented.” To illustrate—suppose we would develop new products which were designed to use existing plant facilities with no thought of the marketability of the finished product. Probably the product would

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fail after expenditure of large sums of development monies. A point here can be made. A successful new product is not so different that the consumer cannot relate it to past experience and present need. Many of the successful new products we see today would not have succeeded ten years ago.

One company's position on new products

It would be helpful to review briefly the Green Giant Company's position on new products and also to reflect somewhat on the industry's attitude. One-third of the Green Giant Company's sales growth each year is to come from new product introductions. This responsibility falls to a new products marketing group and a new products development group. Approximately 1% of sales is set aside for research and development (R and D) activities. Stated in the Company's 1969 report, "The Green Giant Company recognizes that corporate growth and vitality depend more and more on development of new products and organizational steps were taken during the past year to strengthen this effort".

The company has in the past year completed a 38,000 ft² product research facility which houses offices for product development staff; 33,000 ft² of pilot plant and storage area and product development kitchens.

New product activity in food industry

Concerning new product activity in the food industry as a whole, in 1966 there were over 7,000 new items introduced. Obviously finding space in the store for new products is becoming an increasing problem. Therefore, new product introductions are becoming more difficult. Long term new products are rare and the l-ad time that a company has with a new product is about 2 years.

Life cycle of new product

The life cycle of a new product may be compared to the bacterial growth curve. Bux, Allen, and Hamilton categorized the life cycle of a new product into: introduction, growth, maturity, saturation, and decline periods. Many factors influence the shape of the curve. In the period 1961-1966, 48% of the products used had a primary life cycle of less than 2 years, 15% over 3 years. It is the job of marketing and R and D to design and promote products in such a way that they have a rapid growth rate and a long saturation phase.

System for new product development

For a company to be successful in the new product development business, it must have a system which coordinates the necessary activities which will bring the product into the market place. I suppose that each company has its own system which works best for their situation. In any event, any system must integrate R and D, production, and marketing efforts. One without the other results in inefficiencies which place a new product at a disadvantage from the beginning.

I will discuss somewhat the Green Giant Company's system for new product development. Much of this material has been discussed by Dr. John Jackson at the recent 17th Annual Food Technology Conference at Columbia, Missouri.

To start, the President of the Company defines the corporate "fields of interest". Marketing then identifies market needs within "fields of interest" and translates needs into concepts. After sufficient evaluation, the Product Planning Committee takes action. This committee is made up as follows: Vice-President of R and D who serves as Chairman, Director of Marketing Development, Director of New Product Marketing, Director of Product Development, Director of Plant Production Planning and Services, Director of Profit Planning, Director of Quality Assurance, Controller, and New Products Coordinator who serves as Secretary.

The development of a new product at Green Giant moves through five stages. The responsibility for development of a product through the various stages rests with the Product Development Team, composed of a member from New Product Marketing and a member from Product Development. This team reports at various stages to the Product Planning Committee which acts upon the Team's evaluation of the product at each stage of development. The activities of the team are coordinated by the New Products coordinator. At Stage I, the parameters of a new product are developed. These parameters serve as guidelines for the R and D group to begin building a prototype. It serves to alert the Product Planning Committee that development is beginning in the area.

At Stage II, evaluation of a prototype of the product has been developed along with a production cost analysis. Stage III involves consumer testing and evaluation of the product. Stage IV involves development of production plans in which long range capital requirements are developed. On the basis of Stage III and IV results, the decision is made to enter test markets with the product (Stage V). Assuming a successful performance in test market, the product enters the regular line. The necessary activities to move a new product through the various stages is generally coordinated by a critical path schedule. This schedule is designed to take a product to the market test stage.

I should dwell just a moment on the economics involved. Before a prototype is accepted by the Prod-
uct Planning Committee, it must meet Company profit objectives or if this should not be possible, contribute sufficiently to corporate objectives to justify its existence. Charged against the selling price are such items as marketing costs, processing and packaging costs, and distribution costs. Somewhere in this cost package is included those intangible items called indirect costs.

With each new product developed there also develops a new set of problems relating to the product. Early in the stages of development, product specifications are written covering the in-going materials and the finished product. Quality Assurance personnel develop those tests which they feel will give them adequate quality evaluation of the product. Processing procedures are developed in detail. From these beginnings flow diagrams and processing equipment are developed.

In many instances the new product requires new technology, or at least new technology within the company. It is not uncommon that the first apparent need arises only after the product is in production. It was for this reason that the Green Giant Company provided pilot plant facilities in conjunction with new product development. Previously expensive factory time was needed to test out the necessary processing steps for the new product. The transition from hand made prototype samples to pilot plant and then factory samples can produce some puzzling and costly results.

Ingredients for formulated products can also produce results which are unexpected. Despite all of our sophistication in science, I believe there is much which we do not know about products with which we deal. Variation in character of ingredients going into a product can produce unanticipated results. Although it is the job of the new product development scientist to anticipate and solve all of these problems before a prototype is presented, a realistic evaluation of the odds makes this improbable. All that can be done is to bring to bear all the facts and knowledge that the individual can accumulate. A fundamental and practical background in food technology is invaluable in this respect.

In conclusion the development of a successful new product demands the best skills which a corporation can bring to bear—marketing, research, production, accounting, and quality assurance.

CONSOLIDATED COOPERATIVE'S ROLE

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shipful they may be, we hope. But dependent they are not. Though we may be running the business, thousands of faceless women are running us and we can't sell them short. They're shopping economists. They cannot be fooled about the behind-the-scenes problems, such as quality, which we try to hide from them. The resentment in these ladies caused by the knowledge that they are being deceived in so many ways . . . by packaging . . . by paying higher prices because of the many side effects of the lack of uniformity and quality . . . that their tax dollars paid out are higher because of lack of proper legislation in our field regarding uniformity . . . that resentment of the female consumer—and that passed on to her husband—is going to unleash a hornets' nest in short order.

Substitutes

In fact, there's a breed of hornets buzzing all around our heads right now that the housewife is becoming more and more enamored with. It's that 1923 item I mentioned a few moments ago which has grown into quite a swarm . . . dairy substitutes. You can find them on every grocer's shelf in the most inviting and economical packages you've ever seen. You can hear them advertised actually contrasting them with real dairy products so that the real dairy product seems like a dirty word. Our smart female consumer still realizes that dairy products offer her more in taste, cooking quality, and nutrition. But we must face the fact that with the average consumer the purse string is stronger than the taste bud, and our industry cannot afford to slip in any direction.

Today, through our cooperatives, we are able not only to advance our quality control programs, but, hopefully to advance the story of quality to the public. This is an age for moving forward . . . for consolidating into positions of strength that cannot be defeated. The first fellow to break his leg will be the guy looking back over his shoulder to see where he's been instead of keeping his eyes on the road ahead to see where he's going.

Progress

I am a firm believer in the old proverb, "blessed are those who are not satisfied with things as they are: to them we owe all the progress that the world has made." Be proud of your past . . . but turn loose of it in favor of a more progressive future. The small cooperative which sits in its tiny corner of this