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Market Development for Farm Products¹

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U.S.A.

MY paper is based mainly on experience in market development research in the U.S. Department of Agriculture. I believe, however, that much of our experience will apply to other parts of the world—perhaps depending upon the level of economic development in a particular country.

Philosophy of market development

The objective of market development is to increase aggregate sales, resulting in improved returns to those who produce and market agricultural products. While market expansion implies an increased quantity of goods sold and consumed at given price levels, it often takes the form of improved quality in diets for consumers as in the substitution of livestock products for cereals, potatoes, dry beans and peas, and similar low-resource using foods. In either case, market development serves the purpose of increasing demand for agricultural resources.

Market development has many dimensions. It pervades the marketing system and extends to the farmers. Market development begins with farmers producing products of certain quality at specific times to meet known demands of consumers. The marketing system aids farmers in doing this through an efficient pricing mechanism and utilizing market research to reflect consumer desires, guiding production accordingly. Moreover, the system is expected to move products from producer to consumer in an orderly and efficient manner while maintaining product quality. This action involves a wide range of marketing activities such as standardizing and grading, packaging, processing, transportation, financing, merchandizing and promotion and other selling activities, product development and innovation, and marketing research. The co-ordination of these activities is an important part of the market-development process. It is impossible to consider all facets of market development in the space allotted here. Therefore, my discussion will be

¹ This paper is based mainly on the research reports listed in the references at the end.

confined mainly to analysing the role of product innovation and advertising in market development.

Magnitude of advertising and product research

Advertising has a long history in marketing farm products. For many years it has been used as a basic tool in aiding large-scale production and distribution; but in recent years it has become much more important. Corporate food firms alone spent over \$2 billion for advertising in 1966. This is almost 4 per cent of the total bill for marketing U.S. farm-originated foods. Over the past twenty years advertising expenditures by U.S. good marketing firms have increased about fivefold. Most of these expenditures—65 per cent in 1964—are made by food manufacturers. Retailers accounted for about 30 per cent in 1964; and wholesalers, only 5 per cent.

In addition to food-marketing firms, farmers also spend relatively large sums for advertising. Few farmers are involved directly in moving their products through the channels of distribution to the consumer, but often they market through co-operatives. In this setting farmers join together to form an organization whose principal function is to promote the sale of their products. Usually, each farmer pays some kind of checkoff for each unit of product marketed. These funds are transferred to the farmer-supported organization that spends them for promotional purposes. Membership in some groups, such as the American Dairy Association, is strictly voluntary, while in other organizations, such as the Florida Citrus Commission, participation is compulsory as a result of State enabling legislation.

Currently, there are over 1,250 of these producer organizations in the United States; they spend about \$100 million a year for promotional purposes. Some are quite small, spending no more than \$1,000 per year, while others spend up to \$20 million annually. Similarly, promotional programmes sponsored by these groups are quite varied in scope, some being local in nature covering only a small area of the country and others being national in scope.¹ Thus, advertising by farmer organizations is a substantial activity in marketing farm products in the United States, and its importance is likely to expand rather than diminish in the future.

Product innovation and growth of the U.S. economy in the post-war years are intimately interrelated. Much of this growth stems from steadily expanding research and development programmes of Government and industry. In the last few years, expenditures for research and development have exceeded \$20 billion annually. Research and development programmes in the food industry account for just under 1 per cent of the total 'R and D' expenditures. Thus, product innovation research in the food industry is in the range of \$150 to \$200 million annually.

Most major food manufacturers have 50 per cent or more of their current sales in products 'new' in the past ten years. Some expect that in

¹ For further information, see *Promotional Activities of Agricultural Groups*, Mktg. Res. Rpt. 742, Economic Research Service, U.S. Department of Agriculture, December 1965.

the next few years about 75 per cent of the growth in sales volumes in the United States will come from new products. The technological revolution of the food sector of agriculture in the United States has had a profound impact on the structure of our marketing system and has been a principal basis for change in agricultural markets.

Product innovation and market development

The term innovation can be used quite broadly to include several types. One is a cost-cutting innovation. Another is an innovation which changes business organization and market structure. Still another introduces a new product or service. All of these are important. I shall use the term, however, to refer to the latter type of innovation. More specifically, the discovery and effective application of a new idea which creates or changes the utility associated with a product. In its most basic form, an innovation may result in a new product or in an improvement in an old one.

Aside from the broader aspects of benefits derived from product innovation, it is critically important in maintaining the vitality and competitiveness of agriculture with other sectors of the economy. In the United States, as well as in other countries, many agricultural products have lost their markets because of the development of synthetics—food as well as non-food. The rate of product innovation in agriculture may need to increase beyond present levels as the agricultural sector attempts to regain its markets or hold present markets.

The U.S. Department of Agriculture established a system of research laboratories in the late 1930s to work on utilization of farm products. New foods, new uses of fibres, and new food-processing methods have resulted from this programme. Examples of products developed at these publicly owned facilities are frozen concentrated orange juice, potato flakes, wash-and-wear wool and cotton, and many others. Some techniques now in common use in food processing were developed at these laboratories. This partnership effort with private industry has been a strong factor in the rate of product innovation in U.S. agriculture and has helped maintain markets that otherwise might have been lost.

There is nothing automatic about the innovative process in the sense that innovations spring forth spontaneously and are routinely accepted by the population masses. Rather, there would appear to be basic socio-economic conditions fundamental to the innovative process.

The strong growth and expanding importance of innovation in the United States are rooted, I believe, in the economic environment of our society. This favourable environment is the result of many things, but most important is the nature of the private enterprise system in the United States. Our system promotes freedom of individual action. This is a key ingredient in innovational developments. Access to market and freedom of entry to individual firms are other important requirements for fostering innovations. Competition and the importance of profits also are parts of our concept of private enterprise which encourage innovations and tend to mould and shape our economic system.

Other important elements conducive to innovations are (1) a growing, educated, and gainfully employed population; (2) a high per person income that not only allows us to meet the necessities of life, but to have some left over for discretionary spending and investment; and (3) a concept of progress and reward to the innovator through inventiveness in developing new products to fulfil consumer needs or better satisfy consumer wants.

To summarize, product innovations promote economic growth and higher standards of living. They are of vital importance in helping agriculture maintain its competitive position in the economy. In the United States extensive research by private companies, universities, and Government all have contributed to the rapid pace of product innovation.

The role of promotion in market development

It appears that at times U.S. farm groups may have been overly enthusiastic about promotion, viewing it as a panacea for their problems of market expansion. This over-enthusiasm sometimes has stemmed from failure to view promotion in a proper philosophical framework.

First, it should be recognized that promotion is only one element in the total production-marketing mix. Promotion, to be most effective, must be co-ordinated and combined with the relevant production and marketing functions. For example, it is doubtful in and of itself that promotion will be effective if the product is not acceptable to consumers or if the price is beyond reason. Similarly promotion will not be effective if the product is not widely distributed or readily available to consumers. Unfortunately, some producer groups have not fully appreciated the fact that effective promotion is not executed independently, but is inextricably intertwined with these production and marketing variables.

Secondly, it should be noted that farmer-supported organizations function under circumstances quite different from those of firms operating in imperfectly competitive markets.¹ The main distinction is that commodity groups, unlike the firm, generally do not control the production and marketing functions involved in producing and moving the product to consumers. The promotional organization must take these variables as given. Decisions as to output, quality, and volume marketed usually are made individually and independently by each producer in the organization. Functions such as packaging, pricing, and quality control rest in the hands of shippers, wholesalers, retailers, and other middlemen. These contrasts between producer organizations and the firm give rise to unique problems which make promotion more difficult for the farm organization. For example, some organizations have had the frustrating experience of launching a major promotional campaign only to discover that unexpected short supplies had resulted in peak prices. This is not to suggest that effective promotion is hopeless for farm groups, but to emphasize the

¹ For a more detailed discussion of the problems of farmer-supported promotional organizations, see Wendell E. Clement, 'Some Unique Problems in Agricultural Commodity Advertising', *Journal of Farm Economics*, vol. xlv, no. 1 (Feb. 1963).

importance of a realistic framework for evaluating the feasibility of achieving effective promotion.

If advertising is viewed in this perspective, any promotional effort should be preceded by a thorough analysis of the marketing functions involved in moving the product to the consumer and of the major factors influencing consumer purchase decisions. Such an analysis is particularly important because expenditures for the various components of marketing are to some extent interchangeable; that is, given limited resources, investment in one component may be more profitable than an equal investment in another component. As an illustration, assume that the prepromotion analysis of the marketing situation reveals that the product under consideration lacks adequate distribution. It might be decided that limited investments designed to obtain more widespread availability of the product are likely to be more profitable than investments of the same amount in consumer advertising. Only when advertising is viewed and executed as a part of other related marketing factors is its maximum impact likely to be achieved.

Many economists have not endorsed promotion as a desirable activity. It has been condemned on many grounds, but primarily as being an economic waste. I choose not to fight that battle here as it has been considered at length elsewhere.¹ Economists perhaps have spent too much time rendering value judgements about promotion and not enough making solid economic analyses to measure its impact. There is a real need for such evaluations because promotion is probably the least understood of all marketing inputs. Management has rather precise information on cost, output, and returns from other inputs, but relatively little on promotion. Economists and other social scientists can make an important contribution to the firm in this area.

Milk advertising study

The U.S. Department of Agriculture has conducted research on the appraisal of promotional expenditure in co-operation with various farmer-supported promotional groups. The purpose of this research has been to evaluate some aspects of the organization's promotional activity to provide management with a sounder basis for decision-making. I would like to summarize the results of one of our studies as an example of how meaningful measures of promotion effectiveness can be obtained.

I will present the highlights of a large-scale study we did in co-operation with the American Dairy Association (representing the dairy farmers of the United States) to evaluate the sales response to varying levels of advertising expenditure.²

¹ A recent example is the report of the U.S. National Commission on Food Marketing with its majority and minority views on the merits of promotional activities. *Food from Farmer to Consumer*, Report of the National Commission on Food Marketing, June 1966.

² For a more comprehensive report of findings of this study, see *The Effects of Different Levels of Promotional Expenditures on Sales of Fluid Milk*, ERS-259, Economic Research Service, U.S. Department of Agriculture, October 1965. For methodology

The Association was interested in obtaining an answer to the question: 'Will additional promotional investments produce additional revenue greater than the cost of the promotion?' That is, will it yield a net return or profit to farmers supporting this programme? To answer this question fully we also needed a measure of the residual or carry-over sales influence of advertising expenditures placed in one period of time into a subsequent time period. To satisfy this requirement we selected the double changeover design (Table 1). To select markets with similar seasonal sales patterns, we analysed sales data from approximately forty State and Federal order markets. Through this process, we selected six test markets: Chattanooga and Knoxville, Tennessee; Rochester, New York; Clarksburg, West Virginia; Sioux Falls-Mitchell, South Dakota; and the Neosho Valley Market of Missouri and Kansas. Time periods of six months each were selected on the basis of seasonal sales patterns and expected sales increases relative to proposed expenditures. That is, if anticipated sales increases were not obtained within six months, the proposed expenditures could not be recovered from added revenue. Two levels of expenditures were tested: a 'medium' level of promotion and a 'heavy' promotion (Table 1).

TABLE 1. *Extra Period Double Changeover Experimental Design Used to Allocate Levels of Promotional Investments to Markets and Time Periods*

Time periods (6 months each)	Square 1			Square 2		
	Chatta- nooga	Knoxville	Rochester	Clarke- sburg	Sioux Falls	Neosho Valley
I	A	B	C	A	B	C
II	B (a)	C (b)	A (c)	C (a)	A (b)	B (c)
III	C (b)	A (c)	B (a)	B (c)	C (a)	A (b)
IV	C (c)	A (a)	B (b)	B (b)	C (c)	A (a)

The capital letters represent expenditure levels. The corresponding small letters in parantheses represent sales of markets having those expenditure levels in the previous period.

Expenditure levels:

A = normal promotion (about 2c per person annually)

B = medium promotion (15c per person annually above normal)

C = heavy promotion (30c per person annually above normal)

The results of the two-year market test showed that both levels of increased promotional expenditures increased sales of fluid milk to a statistically significant degree, but they were not equally profitable; in fact, the medium expenditure level gave a greater net return than the heavy promotional level (Tables 2 and 3). To estimate the added revenue shown in Table 3 we multiplied the weighted average price differential

employed, see Peter L. Henderson, 'Market Experimentation for Measurement of Advertising and Promotion Effectiveness', Business and Econ. Statistical Section, *Proceedings of the American Statistical Association*, Washington, D.C., 1966.

between Class I price and Class II price by the total increase in sales of fluid milk in the test markets.¹ These differentials vary considerably between milk markets in the United States; hence, the size of the differential is a key factor to milk producers in a specific market in evaluating the probable return from increasing expenditures for promoting sales of fluid milk.

TABLE 2. *Estimates of Sales Response to Three Levels of Promotional Expenditures for Fluid Milk in Six Markets, March 1963-February 1965*

	Normal promotion	Medium promotion		Heavy promotion			
	Sales per day	Sales per day	Increase over normal	Sales per day	Increase over normal		
	<i>Thou. lb.</i>	<i>Thou. lb.</i>	<i>Thou. lb.</i>	<i>Pct.</i>	<i>Thou. lb.</i>	<i>Thou. lb.</i>	<i>Pct.</i>
Direct effect	288	296	8**	2.8	298	10***	3.5
Carry-over	..	†/5	5*	1.7	†/7	7**	2.4
Combined effect	288	301	13***	4.5	305	17***	5.9

† Adjusted to zero carry-over for normal.

* Significant at 5 per cent level.

** Significant at 2 per cent level.

*** Significant at 0.5 per cent level.

TABLE 3. *Costs and Returns of Promotion in Six Markets, March 1963-February 1965*

Level of promotion	Cost of promotion	Revenue	Net returns
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Medium	237,530	398,580	161,050
Heavy	436,363	521,220	84,907

Consumer surveys conducted concurrently with this controlled market test showed that the higher sales associated with intensified promotion were obtained from new customers attracted by the intensified promotion. In addition, data were obtained on demographic characteristics of consumers from the surveys that will aid the Association in planning future programmes to maximize returns per dollar invested.

Summary

The results and implications of this milk study are illustrative of our experience in conducting marketing research related to advertising and promotion of agricultural products. Specifically, we have found that (1) the reliability and precision of results are primarily dependent upon the proper planning and design of the research; (2) carefully planned and

¹ Class I price applies to milk utilized for fluid consumption; Class II price applies to milk used in manufacturing products. The increased volume associated with promotion was transferred from Class II to Class I use.

executed experiments will provide relatively good measurements of sales response to alternative promotional inputs such as levels of investments, various advertising and promotional techniques, promotional themes, etc.; but (3) such efforts will not provide insights into sources of sales unless supported by data obtained from the tradesmen and consumers; and (4) sales results of various alternatives are relative to each other rather than precise estimates that can be applied per se.

My paper can only be an 'opener' to this vast subject. A summary statement of the marketing discussion group in the twelfth conference of this association is appropriate for our discussion today:

The group concluded that the purpose of advertising is after all to increase sales, which may well contribute to overall economic objectives. The primary task of the economist is not to make judgements on the ethics of advertising, but to do research on its effectiveness. In the future, because of more competition for the more affluent consumer's dollar, agriculture may be forced to participate more in marketing development activities that are psychologically oriented. With increased specialization of agricultural production, economists also will be forced to give attention to problems of commodity interests, as well as to the effects of advertising on the total demand for farm products.

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GROUP K. REPORT

DISCUSSION centred initially on Dr. Ogren's 'philosophy of market development' and his estimates of the magnitude of advertising and product research came into the discussion by a forceful suggestion that, on the face of it, a promotion cost of 4 per cent of the total marketing bill—which was Dr. Ogren's estimate for U.S. farm-originated foods—was grossly excessive. The latter replied that he was unaware of any basis on which a level of cost could be shown to be 'socially excessive' without regard to the circumstances and type of promotion. Furthermore, any evaluation should include the informational content of advertising and, more specifically, its value in promoting competition and product innovation. These benefits, being difficult to quantify, preclude dogmatism.

The view found some favour that many economists were unsympathetic towards advertising, because it upset one of their basic models, and they had been unable to develop theories which could adequately handle it. Three aspects of promotion needed to be considered—the welfare of the

consumer, the profit of the entrepreneur, and the relationship between consumer and entrepreneur, in particular, the 'feed-back effect', by which promotion and promotion-evaluation provided a needed channel of communication between entrepreneur and consumer.

The fact that farmer-groups were increasingly being urged to levy themselves to pay for promotion attracted some attention. This was mostly in fields where the promotion opportunities more properly belonged to processors, wholesalers, or retailers. There was neither net social benefit, nor benefit to farmers, in an 'advertising war' between, say, beef and lamb producers on the local market. The only beneficiaries would be advertising firms, and those consumers who were persuaded to taste beef or lamb for the first time.

Related points made were that the effectiveness of advertising increases with the specificity of the product. The response would be greater for a particular brand of oranges than for oranges generally, and greater for oranges than for fruit. Expenditure on promotion was high in the U.S.A., partly because of the large proportion of U.S. food sold in prepared form under brand names. The question of who eventually 'pays for' promotion was seen as depending on relevant demand and supply elasticities.

It was suggested that research in promotion must take account of the fact that, particularly in affluent societies, eating is more than the mere intake of food: considerations of health, prestige, and convenience, for example, are increasingly important. The limited size of the human stomach is not a major restraint on food expenditure in a wealthy society. In this situation, joint research by psychologists and economists could be fruitful in the design and evaluation of promotion programmes, enlisting, for example, aspects of communications theory and aesthetics. On the question of content of advertising, it was observed that evaluation studies encountered the difficulty of non-homogeneous 'inputs'—e.g. 'different slogans yield different effects.'

Product development in the less-developed countries, though highly important, appeared in a different setting from the situation in affluent countries. The case of an F.A.O. School Lunch Programme on the Ivory Coast was cited. Product development and promotion was left to a medical officer who needed the expertise of marketing, packaging, transport, and merchandising to achieve success.

Among those contributing to the discussion in addition to the opening speaker were G. T. Jones *U.K.*, J. W. Wood *U.K.*, G. Kauffmann *Australia*, A. G. Lloyd *Australia*, H. de Farcy *France*, W. R. Stent *Australia*, R. A. Pearce *Australia*, L. H. Juskovic *Australia*, I. M. Sturgess *Australia*, H. R. Kötter *Germany*, A. Weber *Germany*, J. Quilkey *Australia*,