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## Food Product Proliferation: Part II

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no additives, (2) cereal containing no preservatives, and (3) cereal containing no artificial preservatives. Although the first product is presumably free of any additive and/or preservative, the latter two could contain other artificial additives, such as color, flavor, etc. and still be labeled natural.

Some foods are advertised as natural even though they are highly processed and contain synthetic additives. Cereals which are processed and fortified with vitamins and minerals or contain chemical preservatives could fall into this category.

The type of sweetener used in natural food products may vary from product to product. For example, an ice cream advertised as natural may contain pure cane sugar, while a natural cereal may be sweetened with brown sugar and/or honey, and orange juice may contain no sugar at all. Any product which contains refined sugar (which is highly processed) is not natural. Salt is another ingredient which may differ among products. While iodized salt may be used in some "natural" products, sea salt or kelp is used in others.

Not only does the term "natural" describe ingredients in products, but also the form of the product. For example, "ready to cook, natural fillets" distinguishes fish fillets from blocks of frozen fillets stacked together and cut into individual portions. Although onion rings are highly processed because they are fried in batter and frozen, their title "natural fresh sliced onion rings" may simply distinguish them from other forms such as diced or pressed onion rings.

Some food products are just as natural as they have ever been, the only change is that the term "natural" has been added to the label. Various brands of potato chips, apple cider, and distilled white vinegar are among the products that fall into this category.

### Proposed Standards

The term "natural" has many diverse and inconsistent uses and meanings. The proposed FTC recommendations would alleviate abuse of the term by not allowing "natural" to be used to describe food products that:

- Have undergone more than minimal processing after harvest or slaughter where minimal processing may include:
  - the removal of inedible substances;
  - the application of physical processes (cutting, grinding, drying, or pulping)

which change only the form of the food; and/or

- processing necessary to make the food edible or safe for human consumption or to preserve it.

■ Contain any artificial flavoring, color, additive, or chemical preservatives or any other artificial or synthetic ingredient.

■ Have two or more ingredients and one or more of such ingredients cannot be represented as natural or a natural food.

A decision to regulate the use of the term will probably have a smaller impact on the natural food industry than the conventional food industry. Many conventional products advertised as natural would be excluded from the natural food category under the FTC proposal unless significant ingredient changes are made, because they are highly processed and contain artificial ingredients. Many natural products sweetened with brown or white sugar will be affected as well as products which contain artificial preservatives and/or additives. Highly processed and fortified products will also be among those which may lose their "natural" name.

A decision on the FTC proposals will probably be made sometime this summer. If accepted by the Commission, final regulations will appear in the *Federal Register* in the fall and become effective in early 1981. ■

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The concept of what is "new" in food products varies enormously—some claim that there are no truly new foods at all, while others estimate that several thousand new foods appear each year. Manufacturers, retailers, and consumers each have differing views on what is meant by "new."

One method of classifying new products is by their degree of novelty.<sup>1</sup> This is categorized in three ways:

■ *Distinctly new products*. These are new types or categories of products different from any other product in form, technology, ingredients, or method of use in the home.

■ *Line extensions or new brands*. Line extensions are new package sizes, flavors, or shapes of existing products. New brands are imitative products not previously carried by the retailer within an existing category.

■ *Product improvement or new items*. Product improvement involves minor changes in the formulation or perceived characteristics of existing products. These are any products added to the chain's stock for the first time excluding very minor changes in packaging.

These three categories are useful because they capture distinctions made by buyers and sellers in the industry. In this article, innovative product introductions will be termed *distinctly new* products or new categories. The imitations of successful new types by other producers and line extensions by the introducing firms will be termed *brand* proliferation. The most frequent type of proliferation will be termed *item* proliferation, repositioning, or reformulation. The appearance of a new category of food usually implies the appearance of a new brand name; likewise, brand proliferation is a special form of item proliferation.

These distinctions also fit within a time framework. First, a new category is created, then brand proliferation or line extensions occur, followed by item proliferation and repositioning.

A study by *New Product News*, a trade publication, shows that brand proliferation exceeded the number of distinctly new

<sup>1</sup> This methodology was proposed by Robert D. Buzzell and Robert E.M. Nourse in *Product Innovation in Food Processing, 1954-1964*, Boston: Harvard Graduate School of Business Administration.

products by a wide margin. Also, the extent of item proliferation (excluding package sizes) was far greater than brand proliferation. There was a significant upward trend in both brand and item proliferation.

Brand proliferation among grocery products is largely restricted to a few categories. More than 50 percent of food and beverage products introduced during 1976/77 were accounted for by only 4 of the 18 food categories: frozen foods (25 percent), candy (13 percent), beverages (8 percent), and snacks (7 percent).

Grocery item proliferation has also been charted by the Nielsen Early Intelligence System (NEIS). NEIS counts any new item that enters into wholesale distribution anywhere in the United States—even different package sizes.<sup>2</sup> The NEIS data seem to indicate that new item introductions peaked in 1972 or 1973. By examining both the NEIS data and the *New Product News* study, it appears that the number of new items is increasing, if changes in package size are excluded. However, the number of new items due to changes in package sizes appears to be decreasing.

These new item figures are gross additions to the entire U.S. grocery marketing system. The net increase in items is more modest. At the end of 1976, NEIS counted 51,939 items distributed in grocery warehouses; by the end of 1977 a net gain of 2,442 items occurred, or 4.7 percent. During that year, a gross addition of 18.6 percent and a gross deletion of 13.9 percent took place; in other words, 32.5 percent of all items were "churned"—either added or dropped.

The average compound net increase in items per year has been 4.6 percent. For the average supermarket with 15,000 items, the store manager or chain buyer must consider about 100 items each week. If consumers examined each new item in the store, they would have to evaluate over 50 each week.

#### Determining Product Proliferation

A report of significant new consumer packaged products has been compiled monthly for many years by the staff of *Advertising Age* magazine. This report ig-

nored new sizes and redesigned packaging. Each flavor variety was counted, as were regional and national offerings of new products, and full test marketings. Thus, the *Advertising Age* data fall into the category of brand proliferation or line extensions, but not item proliferation. The high-proliferation categories are generally produced in industries with high concentration, high advertising intensities, and other features of oligopolistic markets. Somewhat surprising is the relatively low level of recent brand proliferation in two nearly monopolized industries: baby foods and canned soups.

Further analysis of the origins of the 419 new food and tobacco products introduced during 1977/78 reveals that 59 percent were introduced by the 50 largest food or tobacco processing firms; 70 percent originated from the 200 largest. Since *Advertising Age* depends to some extent on announcements distributed by the firms themselves, these data may be biased upward. These data concur with *New Product News* data for 1977 that show that 15 large firms accounted for nearly 20 percent of all new products.

#### Test Highlights

A statistical test of the economic theories of product proliferation was performed us-

### New Product and New Item Annual Introductions into Grocery and Drug Stores, 1964-78

Year	New brands <sup>1</sup> Number	New items <sup>2</sup> Number
1964	720	1,220
1965	660	1,075
1966	725	1,330
1967	860	1,520
1968	815	1,330
1969	840	1,440
1970	775	1,380
1971	740	1,340
1972	780	1,500
1973	810	1,390
1974	940	1,750
1975	1,025	1,880
1976	1,130	2,180
1977	1,220	2,650
1978	1,265	2,800

<sup>1</sup>Number of new branded products, ignoring variations in flavor, color packaging, reformulation, and so forth.

<sup>2</sup>Number of new items, including variations in flavor, color, packaging, reformulation, and test marketings, but excluding different package sizes.

Source: Dancer-Fitzgerald-Sample, *New Product News*, as cited in *Progressive Grocer*. Data for 1978 are estimates based on 6 months' data.

### Predicted New Food Products Introduced Annually Into a SIC Product Class, 1977-78<sup>1</sup>

Four-firm concentration ratio (%)	Eight-media advertising-to-sales percentage					
	0	2	4	6	8	10
	Number					
20	—	—	—	—	—	1.1
30	—	—	0.4	1.9	4.1	6.0
40	0.3	2.2	4.0	4.9	7.7	9.6
50	2.7	4.5	6.4	8.2	10.1	11.9
60	3.7	5.5	7.4	9.2	11.1	13.0
70	3.5	5.3	7.2	9.0	10.9	12.8
80	2.0	3.8	4.7	7.4	9.4	11.2
90	—	1.0	2.9	4.7	6.6	8.5

— = Model predicts a negative value.

<sup>1</sup>*Standard Industrial Classification Manual* published by the Office of Management and Budget.

Source: John M. Connor, "Food Product Proliferation: A Market Structure Analysis," Working Paper No. 41, NC-117, Madison, Wisconsin.

<sup>2</sup>NEIS uses the warehouse records of 120-150 supermarkets. Any time the most minor changes occur, even a 1/10 oz. change in size, or a special cents-off offer, a new item is recorded.

### Grocery Product Proliferation by Product Category, 1976-77

Product category	New branded introductions 1976-77	Items in distribution 1977 <sup>1</sup>	
		Number	Average retail sales per item <sup>2</sup> Million dollars
Health and beauty aids.....	515	2,122	2.4
Frozen foods.....	405	927	8.4
Candy and chewing gum.....	200	599	2.5
Household supplies.....	156	2,377	3.1
Beverages <sup>1</sup> .....	123	792	7.4
Chips, crackers, nuts, other snacks.....	107	98	6.3
Sauces, spices, condiments, spreads.....	107	826	4.6
Bread, cakes, cookies <sup>1</sup> .....	94	76	20.3
Dairy products <sup>1</sup> .....	92	590	18.3
Pet products.....	82	498	7.2
Meats and fish <sup>1</sup> .....	70	78	14.5
Low-calorie foods.....	61	136	3.3
Soups.....	51	135	6.6
Baking ingredients and mixes.....	46	381	6.6
Canned fruits and vegetables.....	45	424	6.9
Tobacco products.....	40	283	2.0
Macaroni, potatoes, rice.....	38	182	5.5
Canned meats and specialties <sup>1</sup> .....	38	147	5.5
Paper products.....	25	561	7.7
Breakfast cereals and pastries.....	25	220	8.4
Desserts, sugar, syrups.....	21	142	6.4
Baby foods.....	5	202	2.9

<sup>1</sup>Includes only items in warehouse distribution; items delivered directly to stores are omitted, as are unbranded items. Footnoted categories are not comparable with other categories.

<sup>2</sup>Sales in supermarkets for all items in category distributed through warehouses.

Source: Dancer-Fitzgerald-Sample, *New Product News*, as cited in *Progressive Grocer*.

ing these data. Proliferation was measured by the number of products introduced into a single Standard Industrial Classification product class.

The model used multiple regression analysis to determine the effect of market structure on the level of product introduction.<sup>3</sup> Three structural factors were incorporated:

■ **Market concentration**—measures the potential that leading firms have for cooperating in pricing or other strategic business decisions. High concentration usually implies less price competition in a market.

■ **The intensity of advertising**—(the ratio of industry advertising to industry sales) represents the extent of product differentiation; advertising may also be related to the difficulty of entry into the product class.

■ **The extent of private labeling in the product class**—the national share of sales of private label sellers—measures how easy it is to enter the industry. The size of the industry was also added to the model to control for differences in definition among product classes.

As hypothesized, the best-fitting model

<sup>3</sup> A detailed explanation of this test appears in Working Paper No. 41 of North Central Research Project NC-117, March 1980. The paper is available from the Food Systems Research Group, Department of Agricultural Economics, University of Wisconsin, Madison, Wisconsin.

### New Items Introduced Annually into Supermarket Distribution

Year	New items in distribution					Total
	Frozen foods	Refrigerated foods	Other foods	Health and beauty aids	Other nonfood grocery <sup>1</sup>	
1973	1,008	913	3,466	703	686	6,776
1974	1,014	868	3,690	472	481	6,525
1975	1,167	795	3,310	705	709	6,686
1976	1,012	1,103	2,959	587	388	6,049
1977	1,044	884	2,626	598	327	5,479
1978	940	694	2,446	500	338	4,918

<sup>1</sup>Includes paper products, tobacco products, household supplies, clothing, automobile accessories, and so forth.

Source: A. C. Nielsen Early Intelligence System, cited in *Progressive Grocer* (1978). Data for 1978 are estimated.

## Motives for Mergers in Food Retailing\*

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showed that concentration, advertising intensity, and industry size enhanced product proliferation. Private label share had the anticipated negative outcome—when entry is difficult, product proliferation increases. Thus, this simple empirical test supports the hypothesis that food industries characterized by oligopolistic market structures have higher rates of product proliferation than more competitive ones. In particular, high concentration and high levels of advertising-created product differentiation are associated with more product cloning. ■

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A leading cause of growth by large retailing chains since their appearance in the 1920's has been merger with and acquisition of other food retailers. Federal laws were enacted as early as 1890 to prohibit mergers which could lead to abuse of market power. Today, merger activity continues to be the subject of public scrutiny.

### Merger Trends

The first major merger movement in food retailing occurred in the 1920's and significantly expanded the size and scope of the leading chains. Acquisitions, as opposed to expansion through construction of new stores, accounted for about 19 percent of the stores operated by the seven largest food chains in 1930. Grand Union, Kroger, National Tea, First National, Safeway, and American were all active merger participants in the 1920's. A&P, the Nation's largest chain for many years, acquired only 2 percent of the stores it operated in 1930.

During the 1930's and 1940's, the 10 leading chains acquired over 3,000 stores, two-thirds of which were acquired by Safeway. A&P and Grand Union made no acquisitions during the period and both lost national share.

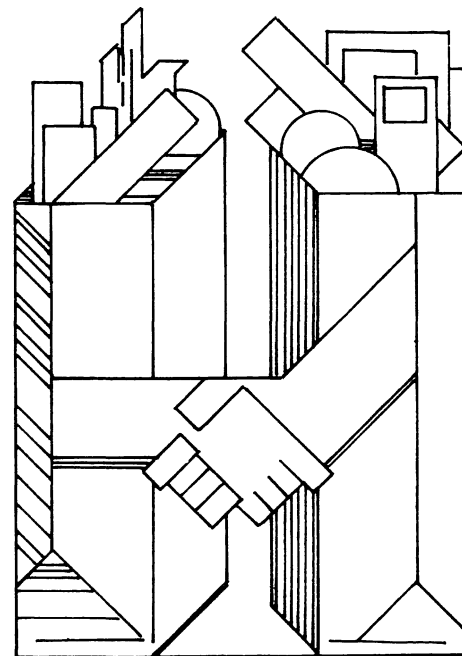
Relatively few acquisitions occurred between 1950 and 1954, but merger activity picked up in 1955 and has remained relatively high ever since. Between 1955 and 1964, 55 firms with aggregate sales of over \$300 million were acquired each year.

The 20 leading chains also increased their pace of acquisitions after 1955. However, since total merger activity increased even more, their share of the sales of all acquired grocery stores declined.

The National Commission on Food Marketing, in 1966, focused attention on the need to restrict mergers and acquisitions by large food chains and recommended that the Department of Justice and the Federal Trade Commission (FTC) develop merger guidelines.<sup>1</sup> The FTC issued a statement ("Enforcement Policy with Respect to Mergers in the Food Distribution In-

\* Based upon a forthcoming report, *Grocery Retailing: Structure, Performance, Public Policy*. Use of commercial names does not imply endorsement by USDA.

<sup>1</sup> National Commission on Food Marketing, *Food from Farmer to Consumer*, Wash., D.C., GPO, June 1966, p. 106.



dustries") which indicated its intent to investigate and possibly challenge acquisitions, and implemented a mandatory reporting program for corporations, both of which continue in effect today. Acquisitions by chains which result in combined annual foodstore sales of more than \$100 million, and especially those involving combined sales of more than \$500 million, are investigated and may be challenged.

Food retailers with annual sales of more than \$100 million must notify the Commission of prospective mergers and acquisitions at least 60 days in advance of consummation. Smaller companies must notify the Commission about mergers and acquisitions within 30 days after they are consummated.

The Justice Department successfully blocked Von Grocery Company's acquisition of Shopping Bag in Los Angeles in 1966. The FTC secured consent decrees with six of the Nation's leading chains—National Tea (1966), Grand Union (1965 and 1968), Winn-Dixie (1966), Lucky Stores (1968), Consolidated Foods (1968), and H.C. Bohack (1968)—which sharply curtailed their merger activity for 10 years. Acquisitions by the 20 leading chains came to a virtual halt during the 1965-74 period. However, total merger activity remained high.

Even before the FTC's consent decrees with the leading chains expired, the firms began to announce merger plans. In 1975, Lucky Stores acquired Arden-Mayfair's