THE DISTINCTIVE NEEDS AND PROBLEMS IN INDUSTRIAL GOODS CLASSIFICATION

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Abstract

Product classification holds great potential for the industrial marketing manager. Considerable confusion exists, however, regarding the manner in which products can most effectively be classified. To address this problem, a classification of classification schemes is presented in this paper. It is argued that many available schemes do not actually classify products, but instead focus on buyer behavior and market segmentation. Efforts to produce universal schemes which ignore the consumer/industrial marketing dichotomy are presented as short-sighted. Instead, a variety of schemes are needed which reflect the diverse strategic requirements of the marketer.

Introduction

Hunt (1976, p.13) explains, "every science seeks to describe and classify the structure and properties of its basic subject matter." As the simplest form of measurement, classification is the primary means for organizing phenomena (Reynolds, 1977). Within the discipline of marketing, classification schemata are important both in theory development and in helping marketers address real-world problems (Bell, 1986; Murphy and Enis, 1986). Once a workable classification scheme has been uncovered, it may become the basis for the development of a theory which accounts for any regularities we have observed. Further, the ultimate criterion for evaluating a given approach to classification is its usefulness: How useful is the schema in solving the problems faced by marketing managers? (Hunt, 1983). Krigman (1983), for example, argues that a firm must have a realistic classification of its products before establishing a marketing posture.

The science of marketing has, over the years, developed numerous schemes for classifying such phenomena as goods, customers, costs, innovation adoption, organizations, information, risk, product/market strategies, as well as the subject areas which constitute the nature and scope of the discipline itself. The greatest interest by marketers in classification has centered around consumer behavior phenomena and, historically, consumer goods (e.g., Copeland, 1923; Holton, 1958; Bucklin, 1963). Engel, et al. (1978) note a very large number of available typologies, and raise concerns about the considerable heterogeneity in the categories used. Similarly, Enis and Roering (1981) characterize extant product classification schemes as ambiguous and imprecise, but maintain that such schemes "continue to provide a logic which is readily understood, used and appreciated in marketing."

The present study seeks to critically assess product classification as it applies to industrial goods, which have traditionally been classified separately, but more recently have been integrated into proposed universal schemes. Major conceptual issues surrounding the practice of classification are discussed, and a classification of available classification schemes is proposed. The distinct problems posed by industrial goods will be highlighted. It is argued both that industrial products benefit from separate classification, and that multiple schemes are needed. Guidelines are provided to the marketing manager for designing classification schemes tailored to his/her own needs.

The Nature of Industrial Products

In its simplest form, a product is a bundle of properties or attributes. The extensive focus placed in the marketing literature on consumer products may be due in part to the fact that the properties of these products are more easily internalized. All of us have extensive experience on a daily basis with consumer goods. Industrial products tend to be more complex, and the relevant properties are typically more technical in nature. The industrial product is one which represents a multiplicity of physical and performance specifications (Corey, 1983). Webster (1979, p.16) explains, "The same man who, as a consumer, settles for plain shaving cream if he can't find lemon lime, will be unwilling, as an industrial buyer, to accept a bolt with threading 30 to the inch when his specifications call for 28."

Industrial goods carry a larger unit dollar value, and are frequently sold in larger quantities. Often they are custom-made or tailored to the specific application needs of the customer firm. Further, these products are marketed at different stages of completion, with much of what is sold taking the form of raw and semifinished goods. The buying firm purchases for inventory as well as immediate usage. It may purchase a given product for a number of differing uses. In some instances, the buyer has the option of making or leasing the product rather than purchasing it.

The industrial product attribute bundle may also include technical assistance for installation and equipment operation, service before and after the sale, and an emphasis on prompt, reliable delivery. Packaging requirements have more to do with protection than with product information. Finally, industrial products are distinguished by the fact that their satisfactory performance is critical for the daily operation and longer term economic viability of the customer firm.

Why Industrial Product Classification Is Important

Given these general characteristics of industrial products, it is important to note the extensive diversity which exists among such goods. Within the category labeled "industrial" one could conceivably include anything sold to
commercial, governmentai, or institutional organizations (Haas, 1982). This would encompass everything from nuclear reactors to telephones, from customer-made machinery to standard wrenches. It would also contain office supplies, spare parts, aftermarket goods, and industrial services.

With such a wide range of product types, and the fact that each has multiple dimensions, it is important that we develop approaches for reducing products to managerially useful sets of variables. Virtually every analytical problem requires that objects be classified in terms of some set of measurable characteristics (Frank and Green, 1968). Product classification serves this purpose. A product classification scheme represents an attempt to partition the universe of products into homogeneous groups (Hunt, 1983). In practice, these groups can be homogeneous with respect to just one or a set of characteristics, although classification becomes difficult beyond two or three characteristics (Frank and Green, 1968). This limitation undermines the practicality of many schemes, given real world complexities.

Product classification schemes also serve as a basis from which propositions and hypotheses can be developed (e.g., Blalock, 1969). Thus, Aspinwall's (1961) color scheme generated propositions concerning the nature of product distribution, while the buyclasses of Robinson, Paris and Wind (1967) have produced hypotheses concerning influence in the industrial buying process.

Management may also find industrial product classification schemes of use in planning and day-to-day decision making. An appropriately designed scheme can be used to identify gaps in product line depth and breath, or conversely, may suggest areas in which there is overlap or too much concentration. In addition, schemes can be helpful in the allocation of marketing resources across products. Based on how products are classified, the marketing manager can also develop strategies concerning ways in which certain products in a line can be used to support others. Further, product schemes are often designed to assist in segmentation. In fact, it would seem that classification is a fairly underutilized tool in marketing decision making, given its potential. The extensive emphasis among strategists on product portfolio analysis would appear to be a tacit recognition of this potential.

Classifying the Classification Schemes

The sizeable number of approaches available for classifying both consumer and industrial products suggests a) this is an area of some consequence, b) a substantial amount of disagreement regarding how products should be classified, and c) the potential for much confusion on the part of the marketing manager as to how to utilize classification in the product planning process. As a result, some clarification is called for.

In attempting to cast the many available schemes into a more manageable form, a taxonomy for product classification schemes is proposed in Exhibit I. It appears that classification has been approached from one of four possible bases: product characteristics, buyer behavior, product use or application, and product performance.

Product characteristics refer to descriptive, and typically both measurable and observable, aspects of an item, including its unit value, replacement rate, distributive velocity, customization, and stage of completion. Buyer behavior schemes rely upon customer perception of risk and product quality, their willingness to engage in search or shopping behavior, and their past experience with the product, among others. Product use schemes focus on how the buyer applies the industrial product to his company's operations. Thus, the manner in which buying firms treat the purchase from an accounting standpoint, how they have organized their purchasing operation, and how the item enters or affects their production process become the relevant bases for classification. Finally, product performance schemes provide post hoc categorization based on marketplace results. The emphasis is placed on the rate of sales growth, relative market share, and profitability.

These four categories are not mutually exclusive. For example, Miracle's (1965) product characteristics may, in effect, define the category into which an item will fall in Webster's (1979) product usage scheme. They are helpful, though, both in distinguishing among schemes, and in suggesting when any one scheme might be more appropriate. For example, the marketing manager may want to utilize schemes based on product characteristics when attempting to develop the link between the nature of the product itself and marketing strategy. Buyer behavior schemes become more appropriate when one wishes to identify specific products with types or classes of buyer behaviors (i.e., market segments) for the purpose of targeting his/her marketing efforts. The product use/application schemes should be relied upon when one is interested in developing the relationship between how the product is used and how it is sold. The fourth type of scheme, those based upon product performance, are valuable when one is involved with resource allocation across products, or with product abandonment decisions.

The relevance of a given scheme depends, then, on the task and objectives of the marketer. Moreover, as Exhibit I demonstrates, many of the schemes presented are actually classifying buyers and product uses, not products per se. This seemingly subtle distinction has important implications for the marketer.

Predicates of Classification: The Need for a Seller's View

Product classification schemes are generated either through the logical partitioning of products (deductive) or the empirically generated grouping of products (inductive). Underlying either method is what we term the predicate form of one's approach. As marketers, our basic