A Provider-Cost/Patron-Effort Schema for Classifying Products

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Since the commodity-oriented thinkers of marketing's early history, marketers have sought a valid schema for classifying products. Currently, the marketing literature is dominated by two types of schemata for classifying products: product-based and consumer cost-based. Despite marketing tenets such as exchange or a dual firm/consumer perspective. After reviewing the existing classificational schemata, one such schema is proposed and evaluated. The two classifying dimensions of this schema are providers' relative variable costs (PRVC) and patrons' relative effort (PRE). Crossing high and low levels of PRVC and PRE yields four product categories: low cost/effort, patron-effort heavy, provider-cost heavy, and high cost/effort.

These schemata anchor much of the current theory and pedagogy of marketing.

In general, sound classificational schemata promote better theory, more productive research agendas, better managerial decision making, and better pedagogy. Bell (1981) argues that classification "is essential to the development of purely descriptive theory, for it establishes the basic definitions of the discipline" (Bell 1981, p. 208). Murphy and Enis (1986) note that classificational schemata summarize existing knowledge and suggest directions for further investigation. Hunt (1991) claims that classificational schemata foster a discipline because such schemata are "the primary means for organizing phenomena into classes or groups that are amenable to systematic investigation and theory development" (pp. 176-177). Thus the science of marketing seems to require classificational schemata.

Marketers tend to focus on the managerial and pedagogical benefits of product classificational schemata, although the benefits of such schemata encompass those of classificational schemata in general. Miracle's (1965) product classification model is intended to provide "a means of predicting, or justifying, a marketing mix for a product with given characteristics" (p. 18). Murphy and Enis (1986) stress that a major "purpose of any product classification scheme is to guide managerial decision making" (p. 35). Kaish (1967) praises the traditional classification of goods (i.e., convenience, shopping, specialty) as a powerful and widely used framework for evaluating marketing mix problems.

Classificational schemata also improve marketing pedagogy and practice because they match the ways that people think; people naturally catalogue the world of ob-
distinct area of inquiry. In fact, the wealth of product-based schemata may be attributed to the growing influence of services marketing scholars during the 1970s and 1980s; most such schemata appeared during this time (Murphy and Enis 1986).

Under consumer cost-based schemata, products are classified by the physical and mental efforts that consumers make to culminate exchanges. Surrogates of physical effort include search cost, travel effort, and shopping effort (Bucklin 1963; Copeland 1923; Enis and Roering 1980; Holbrook and Howard 1977; Holton 1958; Kaish 1967; Murphy and Enis 1986); surrogates of mental effort include interbrand comparison, purchase preference formation, and perceived risk (Enis and Roering 1980; Holbrook and Howard 1977; Kaish 1967; Murphy and Enis 1986).

Consumer cost-based schemata are rooted in the commodity school of thought (Sheth, Gardner, and Garrett 1988). Early commodity theorists believed that commodities could be grouped into only a few categories and that the same marketing procedures and techniques could be used for all products within a category; thus consumer cost-based schemata suggest different marketing strategies for different product categories. Early consumer cost-based schemata (Aspinwall 1961; Copeland 1923; Parlin 1912, 1978 [1914]) also embody Kotler’s consciousness one stage. Subsequent schemata (Holbrook and Howard 1977; Kaish 1967; Murphy and Enis 1986) have moved toward what Kotler (1972) calls the “functional” or consciousness three approach to marketing, although their strictly consumer-based perspective limits their consciousness three orientation to consumers. The wealth of consumer cost-based schemata may be attributed to the dominance of the consumer-oriented, buyer-behavior school during the 1960s and 1970s (Sheth, Gardner, and Garrett 1988). In fact, most such schemata appeared during this time (Murphy and Enis 1986).

CRITICAL REVIEW OF EXISTING CLASSIFICATIONAL SCHEMATA

Hunt (1991, pp. 184-189) offers the following five criteria for evaluating a classificational schema.

C1: Does it adequately specify the phenomenon to be classified?

C2: Does it adequately specify the properties or characteristics used to classify? He further splits C2 into subcriteria C2a, the appropriateness of classifying properties, and C2b, the intersubjective ambiguity of classified phenomena.

C3: Does it have mutually exclusive categories?

C4: Does it have collectively exhaustive categories?

C5: Is it useful? He further splits C5 into subcriteria C5a, its theoretical fruitfulness (i.e., promotes theory building and the creation of lawlike generalizations), and C5b, its managerial usefulness (e.g., each taxonomic category suggests unique marketing strategies).

Hunt (1991) calls C3 the “first among equals” because “classifications are devised to attempt to solve some kind of problem” (p. 188).

Hunt’s five criteria are now applied to a critique of product-based and consumer cost-based schemata. This critique will show that neither type of schemata meets all the criteria.

Product-based Schemata

Product-based schemata satisfy Hunt’s C1 and C3; these schemata exhaustively classify C1 the universe of products (C2). However, these schemata only partially satisfy C3 and fail C5. Although the classifying properties of product-based schemata are invariant throughout the classifying process (C2a), classification of products near atheoretically-set continua midpoints is problematic (C3) because intersubjective agreement about the assignment of such products is low (C5b).

Theoretical fruitfulness (C5a). Under product-based schemata, tangibility—the primary indicator of goods and services (Bateson 1979)—means palpability. Webster’s Ninth New Collegiate Dictionary (1990) defines tangible in two ways: “capable of being perceived esp. by the sense of touch” and “capable of being precisely identified or realized by the mind” (p. 1205). Some marketers who advocate product-based schemata, such as Berry (1980) and McDougall and Snetsinger (1990), acknowledge these two definitions. However, a careful scrutiny of the way that marketing scholars use the term suggests that they usually mean “the sense of touch.” For example, if marketing scholars meant “realized by the mind” when they said tangible, then the banking industry would offer goods, rather than services, because the product called banking is easily “realized by the mind.” The same can be said about products such as health services, insurance, rental services, and entertainment.

Because tangible means touchable under product-based schemata, intangible products must occupy three-dimensional space; conversely, intangible means untouched and perishable. Thus Rule 2 (homogeneous/heterogeneous) and Rule 3 (intervenient/perishable) are superfluous because the mere presence or absence of spatiality (Rule 1) is sufficient to classify products under product-based schemata. (See Skipper and Hyman [1987] for more details about problems caused by redundant premises.)

Although structural/consciousness one-type product-based schemata can enhance intuitive understanding, which Bunge (1967) defines as familiarity or psychologi-
making the off-diagonal cells superfluous. In this case, the two dimensions will create managerially spurious categories.

Other recent consumer cost-based schemata also suffer from dimensional dependence. For example, both dimensions of the Holbrook and Howard’s (1977) Commodity Classification System are composed of product characteristics, consumer characteristics, and consumer responses. Although “the intention of Holbrook and Howard was to reconstruct the [product] classification system by stressing the importance of the linkage between consumer actions and marketers’ activities” (She!th, Gardner, and Garrett 1988, p. 44), the taxonomy is confounded because its two underlying dimensions are each composed of the same three components.

Managerial usefulness (C3). Consumer cost-based schemata pass this criterion because they offer meaningfully different strategies for different types of products (Murphy and Enis 1986). Furthermore, the strategies such schemata suggest for different types of products have high face validity. Perhaps the remainants of Parlin’s (1912, 1978 [1914]) nonacademic inductive approach to product classification—his observations of women shoppers inspired his product taxonomy—explains the high face validity of consumer cost-based schemata despite their suspect theoretical underpinnings.

DIMENSIONS OF THE PROPOSED SCHEMA

Although exchange is the reigning focal notion of marketing (Alderson 1957; Bagozzi 1975, 1978; Hunt 1976; Kotler 1972, 1984), neither product-based nor consumer cost-based schemata assume exchange as their theoretical hub. Given that marketers “acknowledge exchange as important, but fail to make use of it as they [build] their various theories in marketing” (Houston and Gassenheimer 1987, p. 17), this theoretical gap is troublesome yet unsurprising. Furthermore, product-based schemata consider market exchanges only from the production side and consumer cost-based schemata consider market exchanges only from the consumption side. Despite marketing tenets as the following, neither product-based nor consumer cost-based schemata embody a dual firm/consumer perspective.

1. Good marketing theories integrate strategic marketing and consumer behavior perspectives (She!th, Gardner, and Garrett 1988, p. 4).
2. One-sided (i.e., consumer behavior-based and strategic management-based) marketing paradigms are “simplistic and incomplete” because they ignore major elements of marketing practice and theory (Day and Wensley 1983, p. 81).
3. A product “classification scheme that incorporates both the buyer’s and the seller’s perspective holds the greatest promise for illuminating the exchange process, since exchange only occurs when there is sufficient congruence between these perspectives” (Enis and Roering 1980, p. 187).

The proposed exchange-based/dual-perspective schema consists of two dimensions: providers’ relative variable cost (PRVC) and patrons’ relative effort (PRE). PRVC is the ratio of variable costs of product X to total costs of product X, where costs are averaged across all current providers. The providers of product X are all entities responsible for the production and delivery of product X.

PRE is the ratio of patrons’ average effort to acquire and to use product X to patrons’ average effort to acquire and to use the average product from a standard assortment of N products. The patrons of product X are all entities whose actions lead to their use of product X, and all efforts are over a standard unit of time (e.g., month, year). Effort means all pre- and postpurchase expenditures of money, time, and burden: financial price, travel time, shopping time, waiting time, performance time (i.e., time required to use the product), monitoring time, physical burden, and mental burden. Standard assortment of N products means a standard basket of products, such as the ones used by the U.S. Department of Commerce to calculate the Consumer Price Index for consumer products or the Producer Price Index for industrial products.

As classifying dimensions, PRVC and PRE have several advantages. First, their definitions are rigorous because they are properly inclusive (i.e., represent all parties of interest to marketers) and properly exclusive (i.e., exclude parties to nonmarketing exchanges, such as love-for-money [Laczniak and Michie 1979; Roloff 1981]). Second, their definitions are robust because they are consistent across the range of marketing phenomena. Third, their definitions are nonrestrictive because they can classify both animate and inanimate parties; for example, providers include automated factories and patrons include household pets. However, marketers who prefer a narrower scope of marketing can easily limit PRVC and PRE to humans and human agencies by limiting the notion of exchange—which is embodied in the definitions of PRVC and PRE—to traditional marketing exchange. Fourth, PRVC and PRE are theoretically independent because no current theory in marketing links the two dimensions. Finally, both PRVC and PRE are calculable because all provider costs (e.g., capital costs, labor costs, and marketing costs) are accounting entities and all patron efforts are expressible in monetary units.

THE PROPOSED SCHEMA

Crossing high and low levels of PRVC and PRE yields four product categories: low cost/effort, patron-effort heavy, provider-cost heavy, and high cost/effort. Figure 1 shows that low cost/effort products are low PRVC and low PRE; patron-effort-heavy products are low PRVC and high PRE; provider-cost-heavy products are high PRVC and
TABLE 2
Products Classified under the Proposed Schema

<table>
<thead>
<tr>
<th>Low Cost/Effort</th>
<th>Patron-effort Heavy</th>
<th>Provider-cost Heavy</th>
<th>High Cost/Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low PRVC</td>
<td>Low PRE</td>
<td>High PRVC</td>
<td>Low PRE</td>
</tr>
<tr>
<td>Consumer goods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action figure (doll)</td>
<td>Apartment</td>
<td>Automotive oil change</td>
<td>Aids for the physically challenged</td>
</tr>
<tr>
<td>Beauty and health aids</td>
<td>Apartment rental services</td>
<td>Denial cleaning</td>
<td>Customized clothing (e.g., bridal gowns, tailor-made suits)</td>
</tr>
<tr>
<td>Convenience food</td>
<td>Automobile rental services</td>
<td>Dry cleaning</td>
<td>Handcrafted furniture</td>
</tr>
<tr>
<td>Fast food</td>
<td>Country club</td>
<td>Haircut</td>
<td>Investment management</td>
</tr>
<tr>
<td>Injection-molded furniture</td>
<td>Exercise club</td>
<td>Installation of wall-to-wall carpeting</td>
<td>New home</td>
</tr>
<tr>
<td>Laundry soap</td>
<td>Life insurance</td>
<td>Lawn services</td>
<td>Painted portrait</td>
</tr>
<tr>
<td>Live entertainment</td>
<td>Meditation</td>
<td>Medical checkup</td>
<td>Private tutoring</td>
</tr>
<tr>
<td>Long-distance telephone service</td>
<td>PC</td>
<td>Tax consulting</td>
<td>Professional counseling</td>
</tr>
<tr>
<td>Pre-recorded entertainment</td>
<td>PC software (commercial)</td>
<td>Television repair</td>
<td>Third-party relocation service</td>
</tr>
<tr>
<td>Industrial goods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copiers</td>
<td>Hand tools</td>
<td>Billing services</td>
<td>Ad campaign</td>
</tr>
<tr>
<td>Fax machines</td>
<td>Manufactured industrial materials (e.g., steel tubing)</td>
<td>Legal services</td>
<td>Custom-engineered equipment</td>
</tr>
<tr>
<td>Lubricating oils</td>
<td>Raw materials (e.g., minerals, timber)</td>
<td>Maintenance and repair services</td>
<td>Jet airplane</td>
</tr>
<tr>
<td>Office supplies</td>
<td>Truck rental services</td>
<td>Management services</td>
<td>Nuclear power plants</td>
</tr>
<tr>
<td>Off-the-shelf electronic components (e.g., meters, amplifiers, ICs, semiconductors)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

averages-of-averages effect and regression to the mean effect seriously threaten the applicability of the proposed schema.

Theoretical Fruitfulness (C_{0b}) and Managerial Usefulness (C_{3b})

Table 2 contains exemplars for each category of the proposed schema. Because the characteristics and marketing strategies of exemplars in each category are similar within-category and different between-category, the preliminary evidence offered by Table 2 suggests that the proposed schema is theoretically fruitful and managerially useful (i.e., passes Hunt's C_{0b} and C_{3b}).

Cost and standardization. By definition, the ratio of variable costs to total costs differs for products assigned to different groups; this ratio is lowest for low cost/effort products, second lowest for patron-effort-heavy products, second highest for provider-cost-heavy products, and highest for high cost/effort products. Furthermore, degree of standardization tends to follow from this ratio, with low cost/effort products typically the most standardized products and high cost/effort products typically the most customized products (Hayes and Wheelwright 1979).³

Low cost/effort exemplars. The general marketing strategy for these exemplars is to create and to use subtle product distinctions to differentiate each brand from competing brands. Because scale economies and high market shares are prerequisites for profitability (Hayes and Wheelwright 1979), competitive-based and experience-curve pricing are common pricing strategies. R&D efforts often focus on tracking rapidly changing consumer tastes and preferences. Patrons switch brands often for variety-seeking and other reasons. To oblige such switching yet sustain a high market share, providers (1) try to maximize the variety of product forms (e.g., instant versus drip coffee) and brands (e.g., Michelob versus Busch beer) subject to costs, and (2) use promotion to reinforce situational consumption (Jain 1990). Intensive distribution through indirect channels, the most efficient way to reach a mass market (Rosenbloom 1991), is a common distribution strategy.

Patron-effort-heavy exemplars. The general marketing strategy for these exemplars is to continually add features to brands sold at established price points. To achieve scale economies yet offer moderate variety, providers market several versions differentiated by features (e.g., VCRs). R&D efforts often create technical superiority and increase profit margins via value engineering. Providers often (1) use bundling (Guitirrezan 1987; Jain 1990) or base-price plus price-for-additional-features pricing strategies, and (2) use promotion to increase the awareness and perceived value of select brand features. Intensive distribution, with different product configurations (i.e., combinations of features) for different outlets, or selective distribution, to oblige a high level of information and servicing (Rosenbloom 1991), are common distribution strategies.

Provider-cost-heavy exemplars. The general marketing strategy for these exemplars is to reduce customer waiting time and to achieve market expansion via franchising. To
Comparison with Product-based Schemata

Table 3 shows that classifications under the proposed schema differ markedly from classifications under existing schemata. Under the proposed schema, products originally classified as tangible products under McDougall and Snetsinger (1990) and Shostack (1977) are reclassified as low cost/effort and patron-effort-heavy products. Products previously classified as tangible share one property: they are low PRVC. Because they require either low or high PRE, different strategies apply to different tangible products. Thus mere tangible product status cannot guarantee suitable strategies for many tangible products. Under the proposed schema, this confounding of marketing strategies is avoided.

Under the proposed schema, products originally classified as intangible are reassigned to four categories. Such a result corresponds with the earlier discussion about the logical inconsistency of the goods/services dichotomy (Enis and Roering 1981) and the spurious differences between goods and services.

Comparison with Consumer Cost-based Schemata

Under the proposed schema, products originally classified as convenience or preference products under Murphy and Enis (1986) and Holbrook and Howard (1977) are reclassified as low cost/effort products. Murphy and Enis (1986) classify low-effort, low-risk products, such as chewing gum and umbrellas, as convenience products; they classify low-effort, medium-risk products, such as beer and soft drinks, as preference products. Yet, the risk differential between chewing gum and beer is also an artifact of marketing efforts. For example, brewers use image advertising to augment the social risk associated with beer selection. Because the degree of risk is a property of product perceptions and a property of marketing efforts, the risk dimension is confounded. Without risk, both convenience and preference products should fall into one category, as in the proposed schema.

Under the proposed schema, products originally classified as either shopping or specialty products are reclassified as either patron-effort-heavy or high cost/effort products. Products previously classified as shopping or specialty products share one property: they are high PRE. Because they are either low or high PRVC products, different strategies apply to different shopping products and different strategies apply to different specialty products. Thus mere shopping (specialty) product status cannot guarantee suitable strategies for many shopping (specialty) products. Under the proposed schema, this confounding of marketing strategies is avoided.

CONCLUSION

Neither product-based schemata, which embody the commodity school of thought, nor consumer cost-based schemata, which embody the commodity school of thought, require that marketing "creates exchanges that satisfy individual and organizational objectives" (Bennett 1988). Yet exchange is the sovereign focal notion of marketing (Alderson 1975; Bagozzi 1975, 1978; Hunt 1976, 1984). For example, Houston and Gassenheimer (1987) define marketing as "the study of potency variation resulting from exchange, and exchange is engaged in by an individual for the enhancement of the potency of his or her assortment" (p. 8). Neither product-based nor consumer cost-based schemata assume exchange as their theoretical hub; however, the proposed schema, which embodies the social exchange school of thought, assumes this focal notion of marketing.

Despite the conventional wisdom that good marketing theories integrate producer and consumer perspectives, neither product-based nor consumer cost-based schemata embody this dual perspective. Theoretically fruitful schemata promote theory building and the creation of lawlike generalizations (Hunt 1991, p. 189). Product-based schemata consider marketing exchanges only from the producers' side and consumer cost-based schemata consider marketing exchanges only from the consumption side; such schemata, because of their one-sided perspective, can spawn only midrange theories. In contrast, the proposed schema embodies the sovereign focal notion of marketing (i.e., exchange) and thus could serve as one component of a general theory of marketing. By defining both ends of the exchange dyad as parties, the proposed schema allows for both restricted and generalized exchange. Because it also embodies a dual strategic/consumer perspective, the proposed schema can spawn general theories.

Product-based and consumer cost-based schemata are problematic in other ways. Unlike the proposed schema, product-based schemata fail Hunt's theoretical fruitfulness criterion (Cp) because they suffer from logical inconsistencies (Enis and Roering 1981) and classificational rules that lack parsimony and robustness (i.e., because they rely on the problematic goods/services dichotomy), and they fail Hunt's managerial usefulness criterion (Cm) because they offer common strategies for marketing services and goods. Unlike the proposed schema, consumer cost-based schemata lack independent classifying dimensions and ignore industrial products. For example, Enis and Roering's (1980) classifying factors collapse into a joint consumer-producer factor; Holbrook and Howard's (1977) classifying factors collapse into a joint consumer-product factor; and Murphy and Enis's (1986) classifying dimensions collapse into a joint risk-effort dimension. As discussed earlier, the hidden interdependence of these supposedly independent factors or dimensions leads to superfluous product categories. Thus the proposed schema generally outperforms the existing schemata on Hunt's (1991) criteria for evaluating classificational schemata.

Although we can falsify definitions of physical entities (e.g., moon rocks falsify the definition of the moon as a celestial entity made of green cheese), we cannot falsify definitions of hypothetical constructs (e.g., attitudes, beliefs). Yet we can show the face validity of hypothetical constructs through (1) their consistency with related con-


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