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C.25 Product Design

PRODUCT DESIGN AS A MARKETING VARIABLE

Product is one of the controllable variables that must be blended with other elements to form the **marketing mix**. However, in most businesses, responsibility for product decisions is shared with other functional areas including manufacturing, engineering, and research and development. Marketers are most concerned with the external or marketplace effects of product decisions, those decisions that affect consumer satisfaction and the competitiveness of the brand.

Product design, the subject of this entry, is one of several product decisions that must be made as part of marketing mix development. Related product concepts, covered as separate GLOSSARY entries include decisions on **branding** (C.5), **customer service** (C.9), **new product development** (C.17), **new product introduction** (C.18), **product elimination** (C.26), and **product line** (C.27).

What Is "Product"? The term **product** refers to the total needs-satisfying benefit provided to consumers. When viewed broadly in this way, product is the total marketing mix delivered to consumers and includes its price as well as its availability or distribu-

tion, since both of these provide consumer benefits.

The typical product is made up of many components. Levitt divides product components into three classes: generic, expected, and augmented.¹ The generic product includes the basic physical item or service being provided to the consumer. For a cake mix, this would be the flour, shortening, flavorings and other ingredients. The expected components of the product would include those other items minimally necessary to purchase of the product. For the cake mix, this would include the package, directions for use, and availability in a supermarket. The augmented product includes, in addition, components that, although not minimally necessary, differentiate the product by offering additional benefits. The cake mix product might be augmented by providing special recipes, unique flavors, a premium in the package, a money-back guarantee, or a toll-free complaint line.

The term **product bundle** is sometimes used to refer to this total product, signifying

¹Theodore Levitt, "Marketing Success through Differentiation—Of Anything," *Harvard Business Review* (January–February 1980), pp. 83–91.

that it is made up of a complex of need-satisfying attributes. **Product design**, the subject of this entry, is concerned with deciding on the need-satisfying attributes that should be included in the product bundle.

Product Design Decisions. The design of a product is the composite result of a great many individual decisions about a product's attributes. Some of the attribute decisions that have to be made in product design are these:

- **Function.** What basic function should the product perform? A decision must be made as to what the product is to do to provide satisfaction to target market consumers.
- **Form.** In what form or forms should the product be provided? If it is a detergent, should it be a liquid or a powder or some new form?
- **Style.** The aesthetic attributes of the product must be decided upon. These qualities include style, color, aroma, and other sensory attributes.
- **Product/Service Mix.** Most product bundles are a combination of physical product and service. (A computer, for example, includes a physical product, the computer, and services such as installation, service, and user training.) Product design includes deciding on the mix of product and service to be offered in the product bundle. (**Customer service** is considered in GLOSSARY entry C.9.)
- **Differentiation.** To be successful competitively, a product must have features that make it different from and superior to competitive products.
- **Quality.** What level of quality is to be designed into the product? Quality, since it adds to needs satisfaction, is an attribute of the product.

The Issue of Product Quality. The success of the Japanese and other international marketers in winning market positions though superior product quality has demonstrated that product quality is an important attribute to consumers in their selection of a brand. **Product quality** is the consumers' perception of the reliability of a product in performing its designed function.

Product quality is not just a marketing

problem; it extends across all functional areas. Product engineering must design quality into the product; manufacturing must maintain high standards of quality control; and purchasing must enforce high quality standards for purchased materials and components. The marketer's responsibility is to represent to those within the firm the importance of quality to consumer acceptance of the product and the power of superior quality as a competitive advantage.²

The Role of Product in Marketing Strategy. Product is the central element in successful marketing strategies. The **marketing concept**, in its modern form, states that success for a product comes when it delivers more satisfaction to consumers than competitive offerings (see GLOSSARY entry A.9). Delivering consumer satisfaction and competitive advantage is best done through the product variable rather than through other marketing mix elements. Barnett and Cooper note many cases where brands with technological leadership turned their attention away from product and relied on promotion, merchandising, and advertising to hold their markets.³ They found their market positions usurped by competitors who introduced improved products. They cite radial tires, word processors, and front wheel drive cars as examples.

Levitt notes the importance of the product variable in avoiding the "commodity trap."⁴ There must be continuing efforts to differentiate the product by improving the product bundle. Failure to do so leads to parity products that can be sold only through low price, a marketing strategy that leads to highly competitive markets, narrowing margins and a loss of market control (See GLOSSARY entry A.1 on the problems of purely competitive markets.)

²See Frank S. Leonard and W. Earl Sasser, "The Incline of Quality," *Harvard Business Review* (September-October 1982), pp. 163-71.

³Roger C. Barnett and Robert G. Cooper, "The Misuse of Marketing: An American Tragedy," *Business Horizons* (November-December 1981), pp. 51-61.

⁴Levitt, "Marketing Success."

Product Testing Programs. Designing products to meet consumer needs is essential to success. Several testing approaches can help a marketer determine the attributes that consumers desire in products.

Most common are **preference tests** in which consumers are asked to sample alternate versions of a product and express their preference. The alternatives tested may be two versions of a new product, a new version and the current product, or a new version and a competitive brand. Care must be taken in these tests to neutralize extraneous influences by removing brand names, standardizing packages, and rotating order of presentation. In interpreting preference tests, care must be taken to avoid "the majority fallacy."⁵ If the distribution of consumer preferences for a range of products is determined, it may reveal segments of consumers who, although not in the majority, have distinctive product preferences that could be served with separately tailored products.

Most preference tests are conducted at central locations, usually by intercepting consumers at shopping malls. A more sophisticated, but also a more time consuming and expensive test is the **home use test**. In these tests, products are placed with consumers in the home so that they are tried under natural-use conditions.

A more recently developed and now widely used product testing technique is conjoint analysis.⁶ Conjoint analysis allows the researcher to ask consumers their preference rankings for potential products, each of which emphasizes a different set of attributes. A computer routine allows the researcher to determine which attributes are most important to the product, pointing the direction to an ideal product design.

⁵See Alfred A. Kuehn and Ralph L. Day, "Strategy of Product Quality," *Harvard Business Review* (November-December 1962), pp. 100-10.

⁶See Paul E. Green and Yoram Wind, "New Ways to Measure Consumer Judgments," *Harvard Business Review* (July-August 1975), pp. 107-17.

CRITERIA FOR PRODUCT DESIGN DECISIONS

The marketer's responsibility in product design is deciding upon the attributes of the brand, with particular concern for the impact of these decisions on consumer acceptance and market competitiveness.

Application of the Criteria. The need for criteria to guide product design decisions comes about in several ways. Marketers should be closely involved in the design of new products and need criteria for those decisions. **New product development** is separately covered in GLOSSARY entry C.17. The need for product redesign often comes about because of competitive entry or product change. Again, the marketer needs criteria for guiding decisions on proposed changes in the product. Another need for product design criteria is in the evaluation of an existing product. Evaluation criteria can be used to guide diagnosis of a product problem, helping to determine its cause and suggest remedies.

Product Design Decision Criteria. The criteria or factors that a marketer should consider in making product design decisions focus on external or marketplace influences. Seven criteria are presented below and summarized in Figure C.25-1 with references to related concepts.

- **Meet Target Consumer Needs?** The design, redesign, or proposed product attribute should meet the needs of the target market. Preference or use test results can be used to evaluate consumer response to the product design.
- **Offer Competitive Advantage?** The product design should offer or strengthen the competitive advantage designated by the positioning decision. Competitive advantage designed into the product is much preferred to attempts to create competitive advantage through promotional devices.
- **Is Design Protected?** Product design or changes in product design that meet consumer needs and provide competitive advantage are likely to be quickly copied by competition unless

FIGURE C.25-1

Criteria for Product Design Decisions and Related Concepts

<i>Decision Criterion</i>	<i>Related Concept and Glossary Reference</i>
1. Does the design meet target consumer needs?	A.9 Marketing concept B.4 Target market selection
2. Does the design offer competitive advantage?	B.1 Positioning
3. Is the design protected from competitive copying?	A.1 Competitive market structure
4. Does the design contribute to product quality?	
5. Does the design offer consumers value for the price?	C.23 Product pricing
6. Does the design support the firm's strategic market direction?	A.20 Strategic market planning
7. Can the design be economically produced?	

protected. Protection can come about through patents, proprietary processes, or resource advantages. Products that lose their differentiation are likely to fall into the "commodity trap."

- *Enhance Product Quality?* Offering quality products requires that the quality be designed into the product. Changes in a product should be scrutinized to determine their impact on product quality as the consumer will perceive it.
- *Offer Value for Price?* Value is the relationship of the utility and quality of the product to its price. Product design affects product cost which, in turn, influences product price. Adding features to a product will usually increase its cost and price. The marketer should evaluate product designs or product design changes to determine if they result in consumer-acceptable price-value relationships.
- *Meet Strategy of the Firm?* To meet the strategic market direction of the firm, the product design should utilize the unique capabilities of the firm. If the total firm is to maintain its competitive standing, it must effectively apply

its resource advantages and capabilities to products. Products should be designed to take advantage of the strengths of the firm.

- *Is Design Operational?* Many product design ideas meet consumer and competitive criteria, but the technology or capacity does not exist to produce the proposed design in quantity or at acceptable cost. Although marketers must be responsive to market needs, they cannot be blind to production realities.

SUGGESTIONS FOR FURTHER READING

- BARNETT, ROGER C., and ROBERT G. COOPER. "The Misuse of Marketing: An American Tragedy." *Business Horizons* (November–December 1981), pp. 51–61.
- LEONARD, FRANK S., and W. EARL SASSER. "The Incline of Quality," *Harvard Business Review* (September–October 1982), pp. 163–71.
- LEVITT, THEODORE. "Marketing Success through Differentiation—Of Anything." *Harvard Business Review* (January–February 1980), pp. 83–91.