cause it is competitively desirable to carry the product or it fills out the line should be resisted. Sales volume should be adequate to permit production at economic levels. There is a tendency in long lines of products for a few items to generate most of the sales and profits with the rest carried at a loss. Product lines must regularly be scrutinized to identify such candidates for product elimination.

SUGGESTIONS FOR FURTHER READING

JACKSON, BARBARA B., and BENSON P. SHAPIRO. "New Way to Make Product Line Decisions." *Harvard Business Review* (May–June 1979), pp. 139–49.

MOREIN, JOSEPH A. "Shift from Brand to Product Line Marketing." *Harvard Business Review* (September–October 1975), pp. 56–64.

C.28 Product Line Pricing

INFLUENCE OF PRODUCT LINES ON PRICING

Most firms sell lines of related products rather than single items. In such cases, products are usually interrelated in both demand and cost. These interrelationships complicate the pricing of these products because a pricing decision made for one item in a line will influence the sales and profitability of the other products. This entry examines the problem of setting price for interrelated items in a product line.

Relationships between Products. In large, complex companies, there can be relationships between products at a number of levels. A company may be made up of a number of separate businesses or strategic business units (SBUs) with products that are related strategically to one another. General Electric, for example, has separate SBUs for appliances, aircraft engines, broadcasting, and other businesses. Interrelationships between SBUs is considered in GLOSSARY entry A.20 on **strategic market planning.** There are also interrelationships between product lines within an SBU. General electric, for example, has two interrelated brand-name lines within its appliance SBU, General Electric brand and Hotpoint brand, plus private label appliances. Interrelationships between lines within an SBU are also considered as a part of strategic market planning. A third level at which there are interrelationships is between items within a particular product line. Half a dozen or more models of refrigerators, each with different features, costs, and prices, may be marketed under the General Electric brand name, but each model is clearly related to others in the line. This entry is concerned with such relationships between items within a product line and the problems that these interrelationships create in pricing the products in the line.

Products within a product line are interrelated in terms of demand for the products and in terms of product cost. Both interrelationships create pricing problems. Economists measure the demand interrelationships between products in terms of the **cross elasticity of demand,** which is the change in demand of one product as the result of a change in price of another product. If cross elasticity is positive (an increase in the price of product A results in an increase in the sales of product B), the products are treated by consumers as substitutes for one another. If cross elasticity is negative (an increase in the price of product A results in a decrease in the sales of product B), the products are complementary. If cross elasticity is zero (a change in the price of product A has no affect on the sales of product B), the products are not related.

Products within a product line are also related in cost if, as is usually the case, the output of one product in the line affects the cost of another.[1] Products are cost-related

[1]The discussion of cost is based on Philip Kotler, *Marketing Management*, 4th ed. (Englewood Cliffs, N.J.: Prentice Hall, 1980), pp. 407–409.

when they share facilities and personnel. Products in a line often use the same production line and are sold by the same sales force. These shared costs, which are largely fixed, are allocated as overhead, usually in proportion to output or sales, to all the products in the line. If the sales of one product in a line decline, other products have to absorb more of the fixed overhead. Thus the sales of one product in the line affect the costs and profits of other products.

For pricing purposes, product lines can be classified in terms of their interrelationship as competitive, complementary, or neutral.[2]

- *Competitive Products.* Products within a product line that have positive cross elasticity can be classified as **competitive products.** Consumers consider these products to be substitutes; buying more of one item means buying less of another. When a marketer segments a market and develops alternative products, each one tailored to a particular market segment, the result is a line of competitive products. Consumers in a segment will choose the product that best meets their need, but will not buy more than one product in the line.
- *Complementary Products.* Products within a product line that have negative cross elasticity are classified as **complementary products.** The purchase of one product in the line leads to purchase of another. There are a number of sources of complementary demand for products in a line.[3] Availability of a full line of products from one source increases consumer convenience and the likelihood of buying multiple items from the line. Some products require purchase of other items for use of the product, such as computers and computer programs; in other cases purchase of one product requires the purchase of another product for maintenance or repair such as a television set and a service contract. Another source of complementary demand is through the sale of prestige products, such as sports car models, that enhance and improve the sales of the total line of automobiles.
- *Neutral Products.* Products that exhibit no cross elasticity are termed **neutral products.** Consumers do not see the products linked as either substitutes or as complementary items. These products can be priced as normal, nonline items. However, there may be cost interrelationships with these products that must be considered in pricing.

The Product Line Pricing Problem. Product line pricing is different because of the interrelationships among the products in the line. Thus in pricing the items in a product line, all the determinants of price normally considered in pricing a product must be applied, but in addition, consideration must be given to the effect of price on other products in the line.

The process for **product pricing** is described in GLOSSARY entry C.23. Three steps are recommended for arriving at a base price for a product: (1) set pricing objectives, (2) analyze the determinants of price, and (3) select and apply a pricing method. This approach, with some modifications, is generally applicable to pricing items in a product line. Modifications that must be considered are these:

- *Pricing Objective.* A **pricing objective** should be set to guide pricing decisions, but the pricing objective should relate to the entire line rather than to the individual item. Thus if profits are to be maximized or market share maximized, it should be the profits or share of the total product line. This will encourage setting a price that recognizes and maximizes the interrelationships between products. (See GLOSSARY entry C.23 on **pricing objectives.**)
- *Price Determinants.* Factors to be considered in setting price are termed **price determinants.** They provide the input for application of the pricing method in the next step. The determinants of price, discussed in GLOSSARY entry C.21, are applicable to product-line pricing. In addition, however, product-line pricing requires that additional determinants, those concerned with demand and cost interrelationships, also be analyzed and considered in setting price. They are considered in the next section.

---

[2]This classification is based on Alfred R. Oxenfeldt, "Product Line Pricing," *Harvard Business Review* (July–August 1966), pp. 137–44.

[3]These and others are suggested by Oxenfeldt, "Product Line Pricing," pp. 141–43.

- *Pricing Methods.* A pricing decision is made by applying the information gained in analyzing the price determinants through a pricing method. A number of **pricing methods** are described and evaluated in GLOSSARY entry C.22. Some of these pricing methods may be applicable to the pricing of product line items. However, few of the methods adequately consider cost and demand interactions between product line items. The multidimensional approach is probably most applicable to product-line pricing.

DETERMINING PRODUCT LINE DIFFERENTIALS

In pricing items in a product line, in addition to the price determinants normally considered, the marketer must also determine the relationship of each item's price to the price of other products in the line. This relationship is defined in terms of **price differentials,** the difference between prices of products in a line. The factors to be considered in setting price differentials are different for competitive products and complementary products and will be considered separately.

Price Differentials for Competitive Products. In pricing products in a competitive product line, it is important that the prices of the end items be decided first.[4] **End items** are the lowest priced and the highest priced products in the line. These items "anchor" the line and become the base against which differentials are applied. The lowest priced item is important because it is the price that consumers are most likely to remember and use to compare the line's prices against those of competition. Demand for the low-end item is likely elastic; it is a bargain hunter's product. The highest priced item is also highly visible to consumers, in this case as a symbol of quality. Both consumers and competitors are highly sensitive to price changes of end items and must be considered as primary influences in determining prices.

With end-item prices established, price differentials must be established for the products in between the end items. In purchasing from a line of competitive products, consumers can be expected to compare the items, seeking the one that best fits their needs. In making this comparison, it is important that price differences between the products make sense to the consumer or the products will be rejected. What are some of the factors that should be considered in setting price differentials so that they make sense to consumers?

- *Price Related to Cost.* Price should be related to both perceived and actual cost. It will make sense to consumers that products with more features will cost more and thus will be priced higher.

  Prices should also be related to actual cost.[5] Cost should set a price floor, and price differentials may be related to cost differentials so that each product is sold at a price proportional to cost. However, margins should not necessarily be equal for all items in the line. Such a practice would ignore differing demand among line items. One of the problems is in deciding what cost to use. Alternatives are full cost including allocated overhead or variable cost. Using only variable cost emphasizes contribution to fixed costs and avoids problems caused by arbitrary allocation of overhead charges (see GLOSSARY entry D.5).
- *Newness of Product.* When products are new and still unique in the market, consumers will expect that the price differential will be higher and will perceive that this is fair. (See GLOSSARY entry C.19 for special considerations in **new product pricing.**)
- *Assure Volume.* If demand is elastic, the price differential should be set low enough to assure adequate volume to make the product worthwhile to market. If an item in the line does not sell in reasonable volume, it absorbs little overhead, making other items in the line more costly. Despite its low volume, the product may still demand inordinate managerial attention.

---

[4]This section is based on Oxenfeldt, "Product Line Pricing," pp. 138–41.

[5]See Kotler, *Marketing Management*, pp. 407–408.

- *Competitive Differentials.* In making a product choice, consumers not only compare competitive products and prices within the line, but also products and prices offered by other firms. In setting price differentials, care must be taken that differentials with comparable competitive products will not cause consumers to switch to competitive products.
- *Price Progression.* The increase in price from the low-end item to the high-end item should represent a logical progression. According to research conducted by Monroe, a logical progression of prices in consumer terms is one that rises at a constant rate rather than a constant dollar amount.[6]
- *Pricing Lining.* For some classes of products, there is a series of price points at which product prices tend to concentrate. To be competitive, a product line should be represented at each of the accepted price points.
- *Gaps in the Line.* Marketers with a full-line strategy should avoid obvious large gaps in the progression of prices. This tends to make the line appear incomplete and may drive consumers to competitive products.

Price Differentials for Complementary Products. The degree of demand interrelationship between complementary products varies. Pricing of complementary products depends on the nature of this interrelationship.[7] In pricing complementary products, the items in the line should be treated as a single unit, and, where necessary, some items should be priced low to increase the sale of complementary products in the line.

- *Captive Products.* The strongest demand relationship occurs when purchase of one item in a line requires purchase of supplies or equipment available only from the same company. An example might be an instant camera and film made by only one company. In such cases, the price of the camera might be kept low to encourage sales and create demand for the film. Film prices would be kept high to generate the profits for the line.
- *Shopping Convenience.* When the demand relationship between products only provides the buyer with the convenience of buying several items at the same time and place, then items should be priced to have roughly equal margins and the gains from the full line realized through increased volume.
- *Accessories.* When the items in the line that must be priced are ones that are used in combination with other items in the line to increase consumer satisfaction, the supplementary items should be priced to yield a high return. Examples of this type of demand relationship would be automobile, motorcycle, or bicycle accessories.
- *Image Items.* Products in a line that are included to build the reputation of the total line are usually priced high. Their purpose is less to create their own sales and profits than to permit higher prices for all other products in the line.
- *Product Bundling.* A special form of demand interrelationship occurs when consumers are offered products in combination for a single price. Usually a product with high demand is bundled with one with low demand. Selling season tickets to football games would be an example. When products are bundled, the product in strong demand is priced below the amount for which it could be sold singly, subsidizing the sale of the weaker product. To provide incentive to consumers to buy the bundled product, a discount must be offered from the price of the items purchased individually.[8]

SUGGESTIONS FOR FURTHER READING

GUILTINAN, JOSEPH P. "The Price Bundling of Services: A Normative Framework." *Journal of Marketing* 51 (April 1987), pp. 74–85.

OXENFELDT, ALFRED R. "Product Line Pricing." *Harvard Business Review* (July–August 1966), pp. 137–44.

REIBSTEIN, DAVID J., and HUBERT GATIGNON. "Optimal Product Line Pricing: The Influence of Elasticities and Cross Elasticities." *Journal of Marketing Research* 21 (August 1984), pp. 259–64.

---

[6]Kent Monroe, "The Information Content of Prices: A Preliminary Model for Estimating Buyer Response," *Management Science* 17 (April 1971), pp. B519–32.

[7]This section is based on Oxenfeldt, "Product Line Pricing," p. 143.

[8]For more on price bundling, see Joseph P. Guiltinan, "The Price Bundling of Services: A Normative Framework," *Journal of Marketing* 51 (April 1987), pp. 74–85.

COPYRIGHT NOTICE

This book was previously published by
Prentice-Hall, Inc. A Division of Simon & Schuster
Englewood Cliffs, New Jersey 07632