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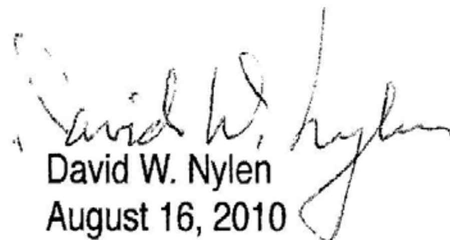

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August 16, 2010

C.21 Price Determinants

THE ROLE OF PRICE DETERMINANTS IN THE PRODUCT PRICING DECISION

Price is one of the major marketing mix variables. The price of a product is initially set in the **new product introduction** plan and after that is regularly reviewed and revised, if necessary, as part of the annual **marketing planning process** or when pricing problems arise.

The Process for Pricing a Product. Arriving at a product price is a multistep decision process. The pricing objective must first be determined. This objective defines what the price is designed to accomplish, such as maximizing sales, maximizing profits, or maintaining price stability in the industry. **Pricing objectives** and criteria for their selection are presented in GLOSSARY entry C.23.

The second step in product pricing is to search for and analyze the factors that need to be considered in determining price. These factors are concerned with product cost, demand for the product, and environmental conditions affecting the market for the product. These determinants of price are considered in this GLOSSARY entry.

The third step in pricing a product is to find a method that applies the pricing objective and the pricing determinants to generate a product price. Alternative **pricing methods** are presented in GLOSSARY entry C.22.

Application of the Determinants of Price. The determinants of price can be applied through the pricing process to determine the price of a new product. (This new product situation has some special conditions

that are reviewed in GLOSSARY entry C.19.) While initial pricing of a new product is an infrequent occurrence, analysis and revision of the price of a mature product is a frequent requirement, occurring at least annually during the marketing planning process. The determinants of price provide an excellent list of factors to be applied in analyzing the current price of a brand or in analyzing suspected pricing problems. If the analysis indicates a need to revise the price, the determinants can be used in the second step of the price-setting process to determine a new price.

THE DETERMINANTS OF PRICE

In microeconomic theory, there are only two determinants of price: product cost and demand. However, economic theory deals with a highly abstract situation that assumes perfect availability of information and assumes away many environmental influences that influence price. Practicing marketers cannot make these assumptions, but, instead, have to make pricing decisions in the context of imperfect information and a dynamic environment. Ten factors that should be considered in setting product price and their influence on price are described in this section. The determinants can be broadly classified as cost factors, demand factors, and environmental variables.

The Pricing Objective. In step one of the process for pricing a product, a pricing objective is set (see GLOSSARY entry C.23). The pricing objective is carried forward to step two of the process to become one of the determinants of price.

The pricing objective does not set a price, but defines what the pricing decision is to accomplish. Moreover, most pricing objectives provide a general guideline as to how the product's price should relate to competitive prices. For example, a **skimming price objective** suggests a price above the going market price, a **penetration objective** suggests a price below the market, and a **stability objective** suggests a price at the market. The pricing objective is very useful in providing a first approximation of price. The pricing objective also serves to coordinate the pricing decision with the product's **positioning** and with other elements of the **marketing mix.**

Product Cost. Product costs are an important determinant of price. The cost of a product serves as a lower limit or floor for price since, except in unusual situations, it is undesirable to sell at less than cost.

Determining product cost is frequently more difficult than it may seem. Most companies produce multiple products and costs are frequently not separated by product. Often products share facilities, equipment, and manpower. Determining the cost for such shared resources is difficult and often arbitrary.

For pricing purposes, product costs need to be divided into fixed costs and variable cost. **Fixed costs,** sometimes termed **overhead,** are those costs that do not vary with output or sales. **Variable costs,** by contrast, vary directly with the rate of production. According to the law of diminishing returns, variable costs are not linear, but increase at first at a decreasing rate and then, as output increases further, at an increasing rate. **Total costs,** of course, are the sum of fixed and variable costs. Figure C.21-1 depicts the three kinds of costs.

In examining costs, it is also important in the pricing decision to determine the behavior of costs over time. The **experience curve** concept suggests that for some products, as production and marketing experience with the product accumulates, cost per unit will decline (see GLOSSARY entry A.19). If experience curve effects for a product are found to be great, it suggests pricing below the market to gain sales volume (and thus gain experience) so that lower costs will be realized and still lower prices will be possible.

Consumer Demand. The quantity of a product that consumers will purchase at various prices at a point in time is termed the

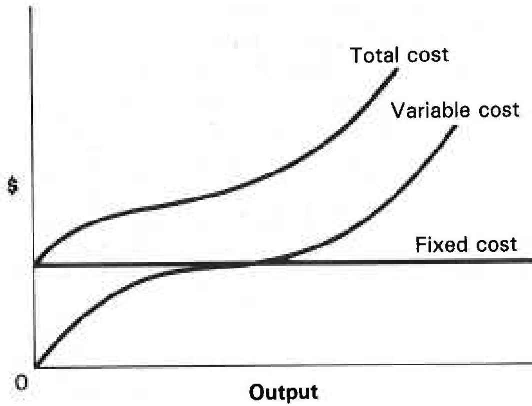

FIGURE C.21-1
Fixed, Variable, and Total Costs

demand for the product. According to the **law of demand,** quantity demanded varies inversely with price. As every experienced marketer knows, as the price of a product goes up, the quantity of that product purchased goes down as consumers, with their limited budgets, shift to alternative products. Demand can be show graphically as a negatively sloped curve as shown in Figure C.21-2.

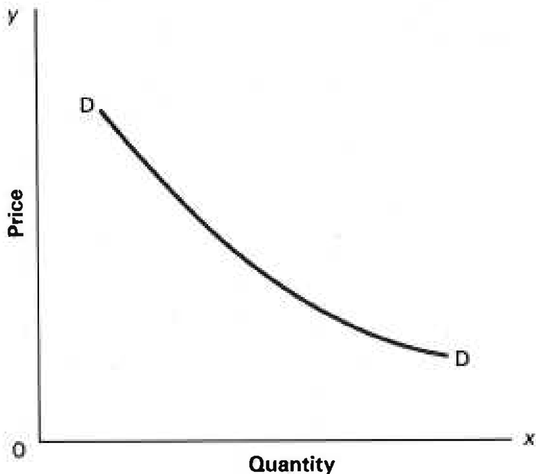

FIGURE C.21-2
A Product Demand Curve

The demand curve is different for every product or brand and depends on the level of satisfaction or utility that consumers perceive they will receive from that brand. Determining the demand curve for a brand is difficult and rarely can be done with precision. However, having some understanding of the nature of demand is very important to pricing. While cost sets a floor on price, demand tends to define the ceiling.

Four approaches are in current use in estimating demand.[1]

- *Econometric Analysis.* Time series analysis of historical price-sales relationships can be used to estimate demand curves. The weakness of this approach is that factors other than price, such as advertising budgets and competitive activity, also change and influence quantity demanded. It is difficult to separate the effects of price changes from the changes in other variables.
- *Experimentation.* Experimentation is frequently used to test the effects of different price levels. A series of representative test markets can be used, each with a different price, but with all other conditions held the same. Differences in sales would be the result of the price differences. Laboratory experiments using simulated test markets or other experimental techniques can also be used. Experimentation tends to be expensive, time consuming, and extraneous variables are difficult to control. (See GLOSSARY entry C.18 on experimental techniques.)
- *Survey.* Consumers can be asked their intention to buy a product at various price levels and the intention to buy figures translated into sales. This approach is frequently used with new products before finished product is available for testing. The validity of results is questionable, with consumers likely to exaggerate their price sensitivity.
- *Conjoint Analysis.* In this relatively recent research technique, consumers are presented with a series of hypothetical products, each different in a variety of attributes, one of which could be price. Consumers evaluate the

[1]See John Morton and Melanie E. Rys, "Traditional Pricing Research Falls Short," *Marketing News* (January 2, 1987), p. 19.

various attributes and the tradeoffs that they are willing to make between attributes. By mixing price with other attributes, responses are less biased.

Price Elasticity of Demand. Elasticity is a measure of the sensitivity of quantity demanded to changes in price (see GLOSSARY entry A.14). If a small change in price results in a proportionately larger change in quantity demanded, demand is said to be **elastic.** If a change in price results in a proportionately smaller change in quantity demanded, demand is said to be **inelastic.** Marketers attempt to develop inelasticity in the demand curve for their brands. This permits them to raise prices above competitive levels with little loss in unit sales volume, but a positive change in revenues. When demand is inelastic, an increase in price will result, following the law of demand, in fewer units being purchased, but this will be more than offset by the higher unit price, and higher total revenues will result.

Inelastic demand occurs when consumers consider that there are no good substitutes for a brand; thus consumers are willing to pay a higher price to get their brand choice. Marketers attempt to create inelastic demand by differentiating their brands from competitive products or by segmenting the market and developing brands especially for the needs of a target segment.

Knowing the price elasticity of demand for a brand helps determine price. If demand is inelastic, the marketer will wish to consider raising price since it will result in increased revenue. By contrast, if demand is elastic, the marketer will wish to consider lowering price because that may also increase revenue. Competitive responses, changes in costs, and other factors must also be considered in making such price changes.

The elasticity of demand can be calculated from a demand schedule found using methods described in the prior section. It is calculated using the formula below:

$$\text{price elasticity of demand} = \frac{\text{percent change in quantity demanded}}{\text{percent change in price}}$$

Price elasticity values are negative because of the inverse relation between price and quantity demanded. Values less than -1 ($-.5$, for example) indicate inelastic demand and values greater than -1 (-2, for example) indicate elastic demand. If the firm has not determined the demand for a brand and thus cannot calculate its elasticity, it can be estimated qualitatively by analyzing the degree to which the brand is differentiated from competitive brands.

Consumer Perceptions. In economic theory, consumers are assumed to have full and accurate information on the prices of all products. However, in practice this is not true. From our understanding of the **consumer decision-making process,** we know that price is treated by consumers as a piece of information and, as such, is both screened and manipulated by selective perception (see GLOSSARY entry A.6). If consumers do not fully and accurately perceive price, operation of the law of demand will be distorted. There are three instances in which this may occur.[2]

- *Price Consciousness.* Several studies have examined consumer consciousness of the prices of products. Although the results vary by person and by product purchased, many consumers were unable to recall the prices of products just purchased. This suggests that consumers often have imperfect price information and, further, that price does not play the dominant role in brand selection that is suggested by economic theory. When consumers are unaware of price or unconcerned with price, demand will be more inelastic.
- *Psychological Prices.* It is traditional in some markets for certain prices to have special meaning to consumers. One belief is that consumers expect and accept prices ending in an odd number better than those ending in an even number. Another belief is that prices just under a round number ($4.98) are perceived as significantly less than the round number price ($5.00). Another tradition in some markets is that since there are customary prices

[2]For an excellent review of this subject and the basis for this section, see Kent B. Monroe, "Buyers Subjective Perceptions of Price," *Journal of Marketing Research* 10 (February 1973), pp. 70–80.

that consumers perceive as correct and acceptable, moving outside those classes results in consumer price resistance. The customary price of candy bars was once five cents, but, as in many fields, inflation erased the customary price so that it is less clear today. There is little research evidence to support psychological pricing, but the tradition persists and may be maintained not by consumers, but by competitive action.

- *Price-Quality Relationship.* Consumers use price as a measure of what they must give up in order to obtain a product. However, it many also be that price is used by consumers as a piece of information that indicates the quality of the product. This may be especially true for products whose quality is difficult to judge, such as clothing and cosmetics, and where brand names are less well known. There is some research support for this price-quality relationship and in practice marketers do strive for consistency between product quality and price. This does not mean, however, that consumer perception of a poor quality product can be improved by raising the price.

Competitive Market Structure. **Competitive market structure** provides a measure of the nature and degree of the competitiveness of a market and is an important consideration in price setting (see GLOSSARY entry A.1). The structure of the market in which the brand to be priced competes needs to be determined. It can be readily estimated by observing the nature of the brand demand curve, the number of major competitors, the presence of product differentiation, and the pricing policies of competitors. Four classifications of market structure are pure competition, monopolistic competition, oligopoly, and monopoly. Each leads to a different pricing approach.

- *Pure Competition.* When competing in a market that approaches pure competition, the marketer has no choice but to accept the market price. At any price above the market, no product would be sold. The brand should not be sold below the market price since the marketer can sell all he or she wants at the market price.
- *Monopolistic Competition.* Under monopolistic competition, brands are differentiated and have more inelastic demand curves than under pure competition. This means that price differences can occur and the marketer has the opportunity to improve profits by raising price. The degree to which a brand can be priced over competition depends upon the degree of favorable differentiation in the product.
- *Oligopoly.* Oligopoly is the dominant market structure in U.S. markets. With a small number of large competitors, each is very conscious of the pricing behavior of the others. If one competitor raises price, competitors may refuse to follow, thereby gaining market share from the higher priced brand. If one brand cuts price, competitors are likely to retaliate with an equal or greater price cut to prevent loss of market share. Price wars can result. As a result, oligopolists tend to price at the market and seek price stability by focusing competitive efforts on other elements of the marketing mix. Price leadership frequently emerges as a means of stabilizing prices. In pricing a brand competing in an oligopoly market, unless the brand is very minor, there will be pressure to adopt the market price.
- *Monopoly.* Pure monopolies can set price to maximize profits without concern over competitive action. However, pure monopolies are rare. They are either regulated, in which case prices are set or moderated by regulatory authorities, or the monopolist really has some near-enough competitors to result in pricing behavior more like that of an oligopolist. Unregulated monopolies are constrained in their pricing by fear of regulation and by a desire to discourage competitors from entering their field.

Competitive Prices. It should be clear from the description of market structure that the going market price is an important consideration in setting the price for a brand. Oftentimes in practice, market price is used as the starting point in price setting. In most cases the market price can be readily determined by a survey of the market.

Ross points out that in many instances, there is not a single market price, but rather a range of prices distributed on either side of the average.[3] He speaks of this as the price band which, he found, frequently varies 10 percent on either side of the average. The

[3]Elliot B. Ross, "Making Money with Proactive Pricing," *Harvard Business Review* (November–December 1984), pp. 145–55.

marketer needs to determine this price band. The pricing decision then frequently is simply deciding where in the band the brand should be priced.

The Product Life Cycle. The **product life cycle** describes the stages that a product category goes through from introduction of the first product through stages of growth, maturity, and eventual decline (see GLOSSARY entry A.15). The primary force that underlies the movement of products through the life cycle is the activity of competition.

In setting or revising the price for a brand, the marketer must estimate the stage of the life cycle in which the brand is competing. GLOSSARY entry A.15 describes how to do this. The life-cycle stage predicts the direction that marketing strategy variables, including price, should take to be competitive.[4]

- *Introduction.* During introduction, the entry product is unique, initially without competition, and it can be priced high to skim the market or low to gain market dominance and encourage market growth. (See GLOSSARY entry C.19 on **new product pricing.**) The choice is guided by the **pricing objective** (see GLOSSARY entry C.23).
- *Growth.* The growth stage is marked by entry of new competitors with differentiated products and segmentation of the market. Brand demand tends to be inelastic because of product differentiation. Price differentials can be maintained, but competition may force the average price below introductory levels.
- *Maturity.* During maturity, competition consolidates and weaker competitors are forced out of the market. Products become more homogeneous and demand curves more elastic. During maturity, there is constant competitive pressure to lower prices. Market structure tends toward oligopoly with most competitors tending toward the market price.
- *Decline.* During decline, the product category has been made obsolete by new technology or a new product approach and many competitors exit the market. Remaining products may retain sales for long periods, but prices are unlikely to recover substantially.

Environmental Variables. Product pricing can be influenced by a host of environmental factors, including legal and regulatory requirements, level of economic activity, inflation, pressure from consumer groups, and cultural and social trends (see GLOSSARY entry A.5). These variables can act as constraints on pricing, or they may present opportunities to change prices in favorable directions. Environmental variables are not controllable by the individual marketer. Instead, the marketer must adjust the marketing strategy, including price, to these conditions. The environmental variables influencing a brand are ordinarily analyzed in the annual marketing planning process through the situation analysis, but may require special analysis if pricing problems occur.

Channel Member Requirements. For products sold through intermediaries, marketers must consider not only end consumer demand, but also the price-related needs of channel members. There are several ways in which price determination is affected by channel member needs.

- *Price Line Requirements.* Intermediaries frequently carry several brands of the same product, with each one priced at a different level. Automobile tires, for example, are often priced at premium, regular, and discount prices. In pricing a brand, prices must fall into an established price class and the brand price must usually fill a void in the intermediary's product line in order to be attractive.
- *Price/Volume Requirements.* Some retailers, like supermarkets and mass merchandisers, seek products that are priced low and have high turnover while others, like department stores, seek higher unit margins and accept lower turnover (see GLOSSARY entry C.33). Product pricing levels must be consistent with the mar-

[4]For research evidence on the behavior of price over the product life cycle, see David J. Curry and Peter Riesz, "Prices and Price/Quality Relationships: A Longitudinal Analysis," *Journal of Marketing* 52 (January 1988), pp. 36–51.

gin and volume requirements of the intermediaries in the channel of distribution.

- *Channel Cooperation.* **Channel cooperation** is dependent, in part, on the pricing decision (see GLOSSARY entry C.6). Channel member cooperation is encouraged by providing incentives, including various discounts and allowances. Each of these, however, is an expense. Prices must be set at a level that will make required channel member incentives affordable. This means that **discount structure determination** must sometimes be made before a final price is determined (see GLOSSARY entry C.11).

SUGGESTIONS FOR FURTHER READING

MONROE, KENT B. "Buyers Subjective Perceptions of Price." *Journal of Marketing Research* 10 (February 1973), pp. 70–80.

MORTON, JOHN, and MELANIE E. RYS. "Traditional Pricing Research Falls Short." *Marketing News* (January 2, 1987), p. 19.

ROSS, ELLIOT B. "Making Money with Proactive Pricing." *Harvard Business Review* (November–December 1984), pp. 145–55.