Marketing
An Introduction 11e

Marketing by the Numbers

Appendix 3

ARMSTRONG / KOTLER

Pricing, Break-Even, and Margin Analysis

- Pricing considerations
  - Demand factors set the price ceiling
  - The company’s costs set the price floor
  - Competitors’ prices, reseller requirements, and government regulations must also be considered

Determining Costs

Fixed costs

- Costs that do not vary with production or sales level

Variable costs

- Costs that vary directly with the level of production

Total costs

- The sum of the fixed and variable costs for any given level of production

Setting Price Based on Costs – Cost-plus pricing

Cost-plus pricing

- Adds a standard markup to the cost of the product

Setting Price Based on Costs – Cost-plus pricing

- The cost per unit is given by:

$$\text{Unit cost} = \text{variable cost} + \frac{\text{fixed costs}}{\text{unit sales}}$$

- The markup is calculated using:

$$\text{Markup price} = \frac{\text{unit cost}}{1 - \text{desired return on sales}}$$

Setting Price Based on Costs – Cost-plus pricing

Relevant costs

- Costs that will occur in the future and that will vary across the alternatives being considered

Break-even price

- The price at which total revenue equals total cost and profit is zero

Setting Price Based on Costs – ROI Pricing

Return on investment (ROI) pricing

- A cost-based pricing method that determines price based on a specified rate of return on investment

Setting Price Based on Costs – ROI Pricing

$$\text{ROI price} = \text{unit cost} + \frac{\text{ROI} \times \text{investment}}{\text{unit sales}}$$

- In this type of pricing, the company would consider the initial investment, but only to determine the dollar profit goal

Markup

- The difference between a company's selling price for a product and its cost to manufacture or purchase it

Setting Price Based on External Factors

Dollar markup = selling price – cost

$$\text{Markup percentage on cost} = \frac{\text{dollar markup}}{\text{cost}}$$

$$\text{Markup percentage on selling price} = \frac{\text{dollar markup}}{\text{selling price}}$$

Setting Price Based on External Factors

Value-based pricing

- Offering just the right combination of quality and good service at a fair price

Markup chain

- The sequence of markups used by firms at each level in a channel

Break-Even and Margin Analysis

Break-even analysis

- Analysis to determine the unit volume and dollar sales needed to be profitable given a particular price and cost structure

Determining Break-Even Unit Volume and Dollar Sales

$$\text{Break-even volume} = \frac{\text{fixed costs}}{\text{price} - \text{unit variable cost}}$$

- To determine the break-even dollar sales

$$\text{BE sales} = \text{BE}_{vol} \times \text{price}$$

Unit contribution

- The amount that each unit contributes to covering fixed costs—the difference between price and variable costs

Contribution margin

- The unit contribution divided by the selling price

Determining Break-Even Unit Volume and Dollar Sales

- Calculating dollar break-even sales using the percentage contribution margin:

$$\text{Contribution margin} = \frac{\text{price - variable cost}}{\text{price}}$$

$$\text{Break-even sales} = \frac{\text{fixed costs}}{\text{contribution margin}}$$

Determining Break-Even Unit Volume and Dollar Sales

- The overall contribution margin can be calculated using:

$$\text{Contribution margin} = \frac{\text{total sales - total variable costs}}{\text{total sales}}$$

Determining "Break Even" for Profit Goals

- To determine the unit sales for a desired profit:

$$\text{Unit volume} = \frac{\text{fixed cost + profit goal}}{\text{price - variable cost}}$$

- Or use the contribution margin:

$$\text{Sales} = \frac{\text{fixed cost + profit goal}}{\text{contribution margin}}$$

Determining “Break Even” for Profit Goals

- To determine the unit volume necessary to achieve a certain profit goal, the profit goal is incorporated into the unit contribution as an additional variable cost
- For example, for a desired profit of 25%:

$$\text{Unit volume} = \frac{\text{fixed cost}}{\text{price - variable cost - } 0.25 \times \text{price}}$$

Total market demand

- The total volume that would be bought by a defined consumer group in a defined geographic area in a defined time period in a defined marketing environment under a defined level and mix of industry marketing effort

Market potential

- The upper limit of market demand

Market Potential and Sales Estimates

$$Q = n \times q \times p$$

Where:

- Q = total market demand
- n = number of buyers in the market
- q = quantity purchased by an average buyer per year
- p = price of an average unit

Chain ratio method

- Estimating market demand by multiplying a base number by a chain of adjusting percentages

Pro forma (or projected) profit-and-loss statement

- A statement that shows projected revenues less budgeted expenses and estimates the projected net profit for an organization, product, or brand during a specific planning period, typically a year

The Profit-and-Loss Statement and Marketing Budget

- **Net sales**: Gross sales revenue minus returns and allowances
- **Cost of goods sold** (cost of sales): The actual cost of the merchandise sold by a manufacturer or reseller
- **Gross margin** (or gross profit): The difference between net sales and cost of goods sold

The Profit-and-Loss Statement and Marketing Budget

- **Operating expenses**: The expenses incurred while doing business, except the cost of goods sold
  - Marketing expenses include sales expenses, promotion expenses, and distribution expenses
  - General and administrative expenses
- **Net profit before taxes**: Profit earned after all costs are deducted

Marketing Performance Measures

- The pro forma profit-and-loss statement shows projected financial performance
- The profit-and-loss statement shows actual financial performance
  - It is based on actual sales, cost of goods sold, and expenses during the past year

Profit-and-loss statement

- A statement that shows actual revenues less expenses and net profit for an organization, product, or brand during a specific planning period

Market share

- Company sales divided by market sales

Analytic Ratios

- **Operating ratios**: The ratios of selected operating statement items to net sales
- Allow marketers to compare performance in one year to that in previous years (or with industry standards and competitors' performance)

Analytic Ratios

- **Gross margin percentage**: The percentage of net sales remaining after cost of goods sold

$$\text{Gross margin percentage} = \frac{\text{gross margin}}{\text{net sales}}$$

Analytic Ratios

- **Net profit percentage**: The percentage of each sales dollar going to profit

$$\text{Net profit percentage} = \frac{\text{net profit}}{\text{net sales}}$$

Analytic Ratios

- **Operating expense percentage**: The portion of net sales going to operating expenses

$$\text{Operating expense percentage} = \frac{\text{total expenses}}{\text{net sales}}$$

Analytic Ratios

- **Inventory turnover rate (stockturn rate)**: The number of times an inventory turns over or is sold during a specified time period

$$\text{Inventory turnover rate} = \frac{\text{cost of goods sold}}{\text{average inventory at cost}}$$

Analytic Ratios

- **Return on investment (ROI)**: A measure of managerial effectiveness and efficiency—net profit before taxes divided by total investment

$$\text{Return on investment} = \frac{\text{net profit before taxes}}{\text{investment}}$$

Marketing Profitability Metrics

- **Net marketing contribution (NMC)**: A measure of marketing profitability that includes only components of profitability controlled by marketing

NMC = net sales - cost of goods sold - marketing expenses

Marketing Profitability Metrics

- **Marketing return on sales (marketing ROS)**: The percentage of net sales attributable to the net marketing contribution

$$\text{Marketing ROS} = \frac{\text{net marketing contribution}}{\text{net sales}}$$

Marketing Profitability Metrics

- **Marketing return on investment (marketing ROI)**: A measure of the marketing productivity of a marketing investment

$$\text{Marketing ROI} = \frac{\text{net marketing contribution}}{\text{marketing expenses}}$$

Marketing Tactics - Increased Advertising Expenditures

- An increase in advertising represents an increase in fixed costs
- Increase in sales needed to break even on the increase in fixed costs:

$$\text{Increase in sales} = \frac{\text{increase in fixed costs}}{\text{contribution margin}}$$

Marketing Tactics - Increased Distribution Coverage

Workload method

- An approach to determining sales force size based on the workload required and the time available for selling

Workload Method

$$NS = \frac{NC \times FC \times LC}{TA}$$

Where:

- NS = number of salespeople
- NC = number of customers
- FC = average frequency of customer calls per customer
- LC = average length of customer call
- TA = time an average salesperson has available for selling per year

Marketing Tactics - Decreased Price

- To calculate the increase in sales necessary to break even with a decrease in price

Current total contribution = contribution margin × sales

- Price changes result in changes in unit contribution and contribution margin

Marketing Tactics - Decreased Price

- To determine the sales level needed to break even on the price reduction
  - Calculate the level of sales that must be attained at the new contribution margin to achieve the original total contribution
  - New sales margin × new sales level = original total contribution

$$\text{New sales level} = \frac{\text{original contribution}}{\text{new contribution margin}}$$

Marketing Tactics – Extended Product Line

Cannibalization

- The situation in which one product sold by a company takes a portion of its sales from other company products

Marketing Tactics – Extended Product Line

- If the new product has a lower contribution than the original product, the company's total contribution will decrease on the cannibalized sales
- To assess cannibalization, the company must look at the incremental contribution gained by having both products available