

Pricing Decisions and Cost Management

Managerial Accounting, 11/e, by Ray Garrison, Eric Noreen, Peter Brewer, 2006, Mc Graw Hill

Introduction

Pricing decisions are management decisions about what to charge for the products and services that companies deliver.

To maximize operating income, companies produce and sell units as long as the revenue from an additional unit exceeds the cost of producing it.

The three major influences on pricing decisions

Major Influences on Pricing Decisions

- 1 *Customers*
- 2 *Competitors*
- 3 *Costs*

✦ The price of a product or service is the outcome of the interaction between the demand for the product or service and its supply.

Major Influences on Pricing Decisions

- 1 *Customers* influence prices through their effect on demand.
 - ✦ Companies must always examine pricing decisions through the eyes of their customers.
 - ✦ Too high a price may cause customers to reject a company's product.

Major Influences on Pricing Decisions

- 2 *Competitors* influence prices through their actions.
 - ✦ Alternative or substitute products of a competitor may affect demand and force a business to lower its prices.
 - ✦ Fluctuations in the exchange rates of different countries' currencies also affect pricing decisions.

Major Influences on Pricing Decisions

- 3 **Costs** influence prices because they affect supply.
- ✦ The lower the cost relative to the price, the greater the quantity of product the company is willing to supply.



Short-run and long-run pricing decisions

Time Horizon of Pricing Decisions

- ✦ Most pricing decisions are either short run or long run.
- ✦ Short-run decisions typically have a time horizon of less than a year.
 - Pricing a one-time-only special order
 - Adjusting product mix and output volume

Time Horizon of Pricing Decisions

- ✦ Long-run decisions involve a time horizon of a year or longer.
 - Pricing a product in a major market where price setting has considerable leeway



Time Horizon of Pricing Decisions

- ✦ Two key differences when pricing for the long run relative to the short run:
 - 1 Costs that are often irrelevant for short-run pricing decisions (fixed costs) are often relevant in the long run.
 - 2 Profit margins in long-run pricing decisions are often set to earn a reasonable return on investment.

Costing and Pricing for the Short Run

- ✦ The Reinado Corporation operates a plant with a monthly capacity of 500,000 cases of tomato sauce.
- ✦ Reinado is presently producing 300,000 cases per month.
- ✦ Del Valle has asked Reinado and two other companies to bid on supplying 150,000 cases each month for the next four months.

Costing and Pricing for the Short Run

	<u>Cost Per Case</u>
Variable manufacturing	\$38
Variable marketing and distribution	13
Fixed manufacturing	14
Fixed marketing and distribution	<u>15</u>
Total	\$80

Costing and Pricing for the Short Run

- If Reinado makes the extra 150,000 cases, the existing total fixed manufacturing overhead (\$4,200,000 per month) would continue, plus an additional \$165,000 of fixed overhead will be incurred per month.
- Total fixed marketing and distribution costs will not change.
- What price should Reinado bid?

Costing and Pricing for the Short Run

	<u>Relevant Costs</u>
Variable manufacturing	\$38.00
Fixed manufacturing	<u>1.10</u>
Total	\$39.10

- $\$165,000 \div 150,000 = \1.10
- Any bid above \$39.10 will improve Reinado's profitability in the short run.

Costing and Pricing for the Short Run

- Suppose that Reinado believes that Del Valle will sell the tomato sauce in Reinado's current markets but at a lower price than Reinado.
- Relevant costs of the bidding decision should include revenues lost on sales to existing customers.

Costing and Pricing for the Long Run

- Taquisha Computer Corporation manufactures two brands of computers: Simple Computer (SC) and Complex Computer (CC).
- Taquisha uses a long-run time horizon to price Complex Computer (CC)



Costing and Pricing for the Long Run

- Direct materials costs vary with the number of units produced.
- Direct manufacturing labor costs vary with direct manufacturing labor-hours.
- Ordering and receiving, testing and inspection, and rework costs vary with their chosen cost drivers.

Costing and Pricing for the Long Run

Manufacturing Activity	Cost Driver	Cost per Unit of Cost Driver
Ordering and receiving	Number or orders	\$78 per order
Testing and inspection	Testing hours	\$ 2 per hour
Rework	Rework hours	\$38 per hour

Costing and Pricing for the Long Run

- Taquisha uses the following information to calculate the cost of manufacturing 100,000 units of Complex Computer.

	Cost per Unit
Direct materials	\$450.00
Direct labor:	
3.50 hours @ \$19 per hour	<u>66.50</u>
Total	\$516.50

Costing and Pricing for the Long Run

- Number of orders placed: 17,000
- Number of testing hours: 3,000,000
- Number of units reworked: 8,000
- The direct fixed costs of machines used exclusively for the manufacture of Complex Computer total \$7,000,000.
- What is the cost of producing 100,000 units of Complex Computer?

Costing and Pricing for the Long Run

- Direct material and labor \$51,650,000
- Direct fixed costs 7,000,000
- Ordering (17,000 × \$78) 1,326,000
- Testing (3,000,000 × \$2) 6,000,000
- Rework (8,000 × \$38) 304,000
- Total \$66,280,000
- \$66,280,000 ÷ 100,000 units = \$662.80/unit

Alternative Long-Run Pricing Approaches

- Market-based
- Cost-based (also called cost-plus)



Price products using the target-costing approach

Target Price is...

- the estimated price for a product (or service) that potential customers will be willing to pay.
- # The target price, calculated using customer and competitors inputs, forms the basis for calculating target costs.

Target Costs

- # Target sales price per unit
- Target operating income per unit
- = Target cost per unit



Implementing Target Pricing and Target Costing

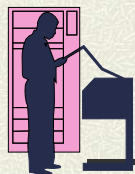
- # Steps in developing target prices and target costs:
 - 1 Develop a product that satisfies the needs of potential customers.
 - 2 Choose a target price.
 - 3 Derive a target cost per unit.
 - 4 Perform value engineering to achieve target costs.

Implementing Target Pricing and Target Costing

- # Taquisha's management wants a 15% target operating income on sales revenues of CC.
- # Target sales revenue is \$750 per unit.
- # What is the target cost per unit?
- # $\$750 \times .15 = \112.50
- # $\$750 - \$112.50 = \$637.50$
- # Current full cost per unit of CC is \$662.80

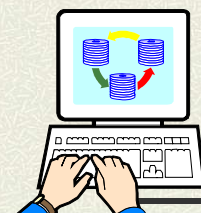
Implementing Target Pricing and Target Costing

- # **Value engineering** is a systematic evaluation of all aspects of the value-chain business function, with the objective of reducing costs while satisfying customers needs.



Value-Added Costs

- # A value-added cost is a cost that customers perceive as adding value, or utility, to a product or service:
 - Adequate memory
 - Pre-loaded software
 - Reliability
 - Easy-to-use keyboards



Nonvalue-Added Costs

- A nonvalue-added cost is a cost that customers do not perceive as adding value, or utility, to a product or service.
- Cost of expediting
- Rework
- Repair

Apply the concepts of cost incurrence and locked-in costs

Cost Incurrence...

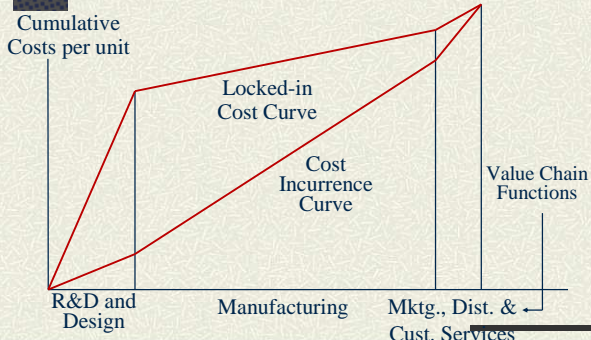
- describes when a resource is sacrificed or forgone to meet a specific objective.
- Research and development
- Design
- Manufacturing
- Marketing
- Distribution
- Customer support

Locked-in Costs...

- are those costs that have not yet been incurred but which, based on decisions that have already been made, will be incurred in the future (designed-in costs).
- It is difficult to alter or reduce costs that are already locked in.



Cost Incurrence and Locked-in Costs

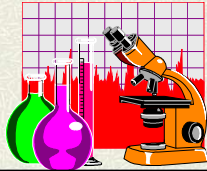


Cost Incurrence and Locked-in Costs

- There is a wide divergence between the time when costs are locked in and the time when those costs are incurred.
- At the end of the design stage, direct materials, direct manufacturing labor, and many manufacturing, marketing, distribution, and customer-service costs are all locked in.

Cost Incurrence and Locked-in Costs

- When a sizable fraction of the costs are locked-in at the design stage, the focus of value engineering is on making innovations and modifying designs at the product design stage.



Cost Incurrence and Locked-in Costs

- In some industries, such as legal and consulting, costs are locked-in and incurred at about the same time.
- In these industries, the key to lowering costs is improved operating efficiency and productivity rather than better design.

Price products using the cost-plus approach

Cost-Plus Pricing

- The general formula for setting a cost-based price is to add a markup component to the cost base.
- | | |
|---------------------------|----------|
| Cost base | \$X |
| Markup component | <u>Y</u> |
| Prospective selling price | \$X + Y |

Cost-Plus Pricing

- Assume that Taquisha's engineers have redesigned CC into CCI at a new cost of \$637.50.
- Taquisha desires a 20% markup on the full unit cost.
- What is the prospective selling price?

Cost-Plus Pricing

- | | |
|---------------------------|------------------|
| Cost base | \$637.50 |
| Markup component | (\$637.50 × .20) |
| | <u>127.50</u> |
| Prospective selling price | \$765.00 |
- How is the 20% determined?
- Choose a markup to earn a target rate of return on investment.

Cost-Plus Pricing

- Assume that the capital investment needed for CCI is \$75 million, and Taquisha's (pretax) target rate of return on investment is 17%.
- What is the target annual operating income that Taquisha needs to earn from CCI?
- $\$75,000,000 \times .17 = \$12,750,000$

Cost-Plus Pricing

- What is the target operating income per unit?
- $\$12,750,000 \div 100,000 \text{ units} = \$127.50/\text{unit}$



Cost-Plus Pricing

- The 17% target rate of return on investment expresses the company's expected annual operating income as a percentage of investment.
- The 20% markup expresses operating income per unit as a percentage of the full product cost per unit.

Advantages of Using Full Costs

- Full recovery of all costs of the product
- Price stability
- Simplicity

Alternative Cost-Plus Methods

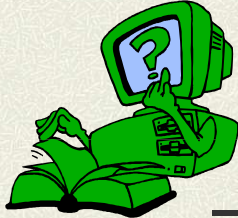
- Variable manufacturing costs
- Variable costs of the product
- Manufacturing function costs
- A company will choose a cost base that it regards as reliable and a markup percentage based on its experience in pricing products to recover its costs and earn a desired return on investment.

Learning Objective 6

Describe two pricing practices in which noncost factors are important when setting price

Other Considerations in Pricing Decisions

- 1 Price discrimination
- 2 Peak-load pricing



Price Discrimination...

- is the practice of charging some customers a higher price for the same product or service than is charged to other customers.
- ✦ Business travelers' demand for air travel is relatively insensitive to price (*demand inelasticity*).
- ✦ Pleasure travelers are more sensitive to price (*demand is more price-elastic*).

Peak-Load Pricing...

- is the practice of charging a higher price for the same product or service when demand approaches physical capacity limits.
- ✦ Telephone and telecommunications
- ✦ Hotel
- ✦ Car rental
- ✦ Electric utility

Use life-cycle product budgeting and costing when making pricing decisions

Life-Cycle Budgeting

- ✦ The product life-cycle spans the time from original research and development, through sales, to when customer support is no longer offered for that product.
- ✦ A life-cycle budget estimates revenues and costs of a product over its entire life.

Life-Cycle Budgeting

- ✦ Features that make life-cycle budgeting important:
 - Nonproduction costs
 - Development period for R&D and design
 - Other predicted costs

Nonproduction Costs

- are less visible on a product-by-product basis.
- When nonproduction costs are significant, identifying these costs by product is essential for target pricing, target costing, value engineering, and cost management.

Development Period

- When a high percentage of total life-cycle costs are incurred before any production begins and before any revenues are received, it is crucial for the company to have as accurate a set of revenue and cost predictions for the product as possible.

Predicted Costs

- Many of the production, marketing, distribution and customer service costs are locked in the R&D and design stage.
- Life-cycle budgeting facilitates value engineering at the design stage before costs are locked in.

Life-Cycle Budgeting and Costing

- Consider a life-cycle average sales price of \$55,000 per unit.
- If the desired life-cycle contribution is 45%, what is the allowable cost over the life-cycle of the product?
- $\$55,000 - (\$55,000 \times .45) = \$30,250$

Explain the effects of antitrust laws on pricing

Price Discrimination Laws

- Under the U.S. Robinson-Patman Act, a manufacturer cannot price-discriminate between two customers if the intent is to lessen or prevent competition for customers.



Price Discrimination Laws

- Key features of price discrimination laws:
- They apply to manufacturers, not service providers.
- Price discrimination is permissible if differences in prices can be justified by differences in costs.
- Price discrimination is illegal only if the intent is to destroy competition.

Price Discrimination Laws

- To comply with U.S. antitrust laws, pricing must not be predatory.
- A company engages in predatory pricing when it deliberately prices below its costs in an effort to drive out competitors and restrict supply and then raises prices rather than enlarge demand or meet competition.

Price Discrimination Laws

- Predatory pricing occur when:
 - 1 the predator company charges a price that is below an appropriate measure of its costs, and
 - 2 the predator company has a reasonable prospect of recovering in the future the money it lost by pricing below cost.

Price Discrimination Laws

- Most courts in the United States have defined the “appropriate measure of costs” as the short-run marginal and average variable costs.



Price Discrimination Laws

- **Dumping** occurs when a non-U.S. company sells a product in the United States at a price below the market value in the country of its creation, and its action injures an industry in the United States.
- If dumping is proven, an antidumping duty can be imposed under the U.S. tariff laws.

Price Discrimination Laws

- **Collusive pricing** occurs when companies in an industry conspire in their pricing and output decisions to achieve a price above the competitive price.