**INSTRUCTOR NOTES: CHAPTER 14**

**DECISION MAKING: RELEVANT COSTS AND BENEFITS**

**Learning Objectives**

1. Describe six steps in the decision-making process and the managerial accountant's role in that process.

2. Explain the relationship between quantitative and qualitative analyses in decision making.

3. List and explain two criteria that must be satisfied by relevant information.

4. Identify relevant costs and benefits, giving proper treatment to sunk costs, opportunity costs, and unit costs.

5. Prepare analyses of various special decisions, properly identifying the relevant costs and benefits.

6. Analyze manufacturing decisions involving joint products and limited resources.

7. Explain the impact of an advanced manufacturing environment and activity-based costing on a relevant-cost analysis.

1. Formulate a linear program to solve a product-mix problem with multiple constraints (appendix).

**Chapter Overview**

**I. The Management Accountant’s Role in Decision Making**

 A. Steps in the decision-making process

 B. Quantitative versus qualitative analysis

 C. Obtaining information: relevance, accuracy, and timeliness

**II. Relevant Information**

1. Unique versus repetitive decisions
2. Importance of identifying relevant costs and benefits

**III. Identifying Relevant Costs and benefits**

**A. Sunk costs**

**B. Differential costs**

**C. Irrelevant future costs and Benefits**

**D. Opportunity costs**

**IV. Analysis of Special Decisions**

**A. Accept or reject a special order**

**B. Outsource a product or service**

**C. Add or drop a service, product, or department**

**V. Special Decisions in Manufacturing Firms**

**A. Joint products: sell or process further**

**B. Decisions involving limited resources**

**C. Uncertainty**

**VI. Activity-Based Costing and Today’s Advanced Manufacturing Environment**

1. Conventional outsourcing (make-or-buy) analysis
2. Activity-based costing analysis of the outsourcing decision

**VII. Other Issues in Decision Making**

A. Incentives for decisions makers

B. Short-run versus long-run decisions

C. Pitfalls to avoid

**VIII. Appendix: Linear Programming. Not Covered**

**Key Concepts**

**1. THE MANAGEMENT ACCOUNTANT’S ROLE IN DECISION MAKING**

1. The decision process consists of the six steps that follow. In addition to serving in an advisory capacity and being a provider of relevant information, the managerial accountant is often a member of a cross-functional, decision-making team.
* Clarify the decision problem.
* Specify the criterion upon which the decision will be made.
* Identify the alternatives.
* Develop a decision model that brings together the criterion, the constraints, and the alternatives.
* Collect the data.
* Select an alternative.
1. Although the managerial accountant collects and presents quantitative information, the role of **qualitative information** should not be underestimated. A skilled manager evaluates qualitative factors, such as employee morale, that do not fit easily into numerical decision models.

*NOTE:* In the late 1990s, *The Wall Street Journal* reported that the Board of Directors of Delta Air Lines declined to renew Chairman Ronald Allen's contract. Board members blamed Allen for a drop in employee morale and for driving a wedge between the company and its employees. Despite Allen's success in pulling the carrier out of financial troubles and helping post record profits, the Board placed "a high value on Delta’s culture of respect, unity, and deep regard for our heritage."

1. Information that is useful in decision making must be **relevant** (pertinent to the decision problem); **accurate** (precise); and **timely** (arrive in time for the decision to be made).
* Companies will occasionally trade off accuracy for timeliness (e.g., conduct a local marketing test for a new product rather than a more extensive test on a national basis).

**2. RELEVANT INFORMATION**

1. The information gathered should be relevant to the opportunity or problem at hand. **Relevant information** involves costs and benefits that (1) differ among the alternatives being considered *and* (2) are future oriented. Both guidelines must be met.

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| **This concept is an important, key takeaway. The costs relevant for decision making are those that are future costs (and benefits) and that differ between (or among) alternatives.**  |

**3. IDENTIFYING RELEVANT COSTS AND BENEFITS**

1. **Sunk costs** are past costs that have already been incurred. Such costs are irrelevant in decision making because the amounts cannot be changed by any of the alternatives under review.
* Examples include the book value of equipment and the cost of existing inventory.
1. A **differential cost** is the net difference in cost between two alternatives.
2. An **opportunity cost** is the cost of a forgone alternative.
* Because of limited resources, companies must frequently pass up profitable (beneficial) projects. The profit (benefit) forgone becomes an opportunity cost to the firm, and such costs are relevant in the decision-making process.

**4. ANALYSIS OF SPECIAL DECISIONS**

***Special orders****—*In this situation, a manager considers an order (often a one-time order) at a special price. Key issues to evaluate include:

* **Cost behavior**: Unless told otherwise, students should assume that total fixed costs remain fixed and only total variable costs change.
* **Qualitative considerations**: These include, among other things, the reaction of present customers should they hear about the special price, an organization's available capacity, and regulations that guard against price discrimination.
* **Whether the firm as excess production capacity.**
* *If there is insufficient production capacity to manufacture a special order, then all or part of the order would have to be filled from the regular product supply.*
* *The opportunity cost of the lost contribution margin from regular, higher-priced sales must be factored into the decision.*

***Outsourcing (make vs. buy)—***This situation requires careful consideration of fixed costs. The total cost per unit of a product or service includes a unitized portion of fixed cost, a cost that may continue even if the item or service is purchased elsewhere at a lower price.

*NOTE:* Just about any good or service can be evaluated for outsourcing. As an example, the North Carolina General Assembly requested that the University of North Carolina evaluate outsourcing/privatization as a method for improving the cost effectiveness of some university operations. Approximately 50 services were identified for their outsourcing potential, including operations of bookstores, food services, dormitories, housekeeping, facilities maintenance, security, waste disposal, transportation, printing, data processing, student health services, and student laundry services.

*NOTE:* Over the years a number of U.S. companies have outsourced various jobs to foreign lands. Recently, following a practice known as insourcing, foreign companies have started to open offices in the United States and hire Americans, at a higher wage, to do the same jobs that these firms once performed overseas. Part of the reason behind this move: A desire by foreign companies to eliminate the problem of having U.S. customers interact with employees who lacked knowledge of American culture and customs, which often produced a frustrating, 1-800 telephone experience. See "Indian Call Center Lands in Ohio," *Fortune,* August 6, 2007, p. 23.

***Add or drop a service, product, or department****—*Here, too, the key is the proper handling of fixed costs and determination if such amounts are **avoidable** or **unavoidable**. When a manager is considering dropping a product line, he or she should isolate costs that will disappear with that line.

* + In many cases, fixed costs are not avoidable, particularly allocated common costs.
	+ The contribution margin lost from the activity to be dropped must also be considered.

**5. SPECIAL DECISION IN MANUFACTURING FIRMS**

***Joint products: sell or process further****—*A **joint production process** results in the commingled manufacture of two or more products, called joint products. The products become identifiable from each other at the **split-off point.**

* + - * Management must frequently decide whether to sell the products at split-off or, alternatively, incur additional cost beyond split-off (called **separable cost)** and then sell the goods for a higher price.
			* Joint costs incurred prior to split-off are not relevant when making the sell-at-split-off or-process-further decision, because these costs will be incurred regardless of the alternative selected.
			* The correct decision is made by comparing the separable cost incurred against the amount of increased sales revenue.

***Allocation of limited resources****—*Decisions may involve the use of limited labor hours, limited materials, and limited machine time.

When only one limited resource is present, a company should focus on products that have the greatest amount of contribution margin per unit of the scarce resource.

A tool called the *theory of constraints* may be useful for identifying limiting constraints and seeking ways to relax them.

***Uncertaint****y—*Analysts can incorporate uncertainty into the decision process by weighting an alternative with its probability of occurrence. Multiplying the alternative by a probability and then summing the results will yield the **expected value,** an average that is used to make the decision.

Many businesses use **sensitivity analysis** to determine what would happen in a decision analysis if a key variable or assumption proved to be incorrect.

**6. ACTIVITY-BASED COSTING AND DECISION MAKING**

1. The relevant-costing concepts in an activity-based-costing environment do not change. What will change is the decision maker's ability to determine costs and benefits that are relevant to the decision.
* Costs that are fixed under a conventional costing system, for example, may not be fixed when multiple (and more appropriate) cost drivers are used.

**7. OTHER ISSUES IN DECISION MAKING**

1. Managerial performance should be judged on the same factors that are considered in making decisions. Unfortunately, there may be a conflict between performance evaluation and decision making courtesy of accrual accounting.
* Example: Losses may be incurred on the disposal of long-term assets, prompting a manager to reject the disposal (for fear of looking bad) when in fact it may benefit the firm.
1. **The decisions in this chapter are primarily short-term in nature**.
2. **Several helpful hints in decision making:**
* **Ignore sunk costs.**
* **Beware of unitized fixed costs, i.e., the average fixed cost per unit, although fixed costs do not change in total.**
* **Beware of allocated fixed costs; identify the avoidable costs. (1)**
* **Pay special attention to identifying and including opportunity costs in the analysis of alternatives.**
1. One item not emphasized in the textbook is that in some cases, when determining costs assigned to products, companies may allocate non-manufacturing costs to products to create a “full-cost” computation related to a product that includes both manufacturing and nonmanufacturing costs. For example, a company might take corporate general and administrative expenses (G&A) and allocate them to costs in a manner similar to allocating (applying) manufacturing overhead to products. These G&A expense would not vary in most decision making contexts because they would be fixed for the period.