

# Chapter 1

## Cost Accounting: Information for Decision Making

### Learning Objectives

1. Describe the way managers use accounting information to create value in organizations.
2. Distinguish between the uses and users of cost accounting and financial accounting information.
3. Explain how cost accounting information is used for decision making and performance evaluation in organizations.
4. Identify current trends in cost accounting, including data analytics and data visualization.
5. Understand ethical issues faced by accountants and ways to deal with ethical problems that you face in your career.

# Chapter Overview

## I. VALUE CREATION IN ORGANIZATIONS

- Why Start with Value Creation?
- Value Chain
- Supply Chain and Distribution Chain
- Using Cost Information to Increase Value
- Accounting and the Value Chain

## II. ACCOUNTING SYSTEMS

- Financial Accounting
- Cost Accounting
- Cost Accounting, GAAP, and IFRS
- Customers of Cost Accounting

## III. KEY FINANCIAL PLAYERS IN THE ORGANIZATION

## IV. OUR FRAMEWORK FOR ASSESSING COST ACCOUNTING SYSTEMS

- The Manager's Job Is to Make Decisions
- Decision Making Requires Information
- Finding and Eliminating Activities That Don't Add Value
- Identifying Strategic Opportunities Using Cost Analysis
- Owners Use Cost Information to Evaluate Managers

## V. COST DATA FOR MANAGERIAL DECISIONS

- Costs for Decision Making
- Costs for Control and Evaluation
  - Budgeting
- Different Data for Different Decisions

## VI. TRENDS IN COST ACCOUNTING AND BUSINESS DECISIONS

- Cost Accounting in the Value Chain
- Enterprise Resource Planning
- Critical Thinking and Data Analytics
  - What are the relevant questions (what decisions do I need to make)?

- What are the data relevant to the analysis and where do I find them?
- What are the appropriate tools for analyzing data?
- How can I effectively and persuasively communicate the results of my analysis?
- Applying the Framework
- Artificial Intelligence (AI) and Cost Accounting

## VII. CHOICES: ETHICAL ISSUES FOR ACCOUNTANTS

- What Makes Ethics So Important?

## **Chapter Overview, continued**

- IMA Code of Ethics
- The Sarbanes-Oxley Act of 2002 and Ethics

## VIII. COST ACCOUNTING AND OTHER BUSINESS DISCIPLINES

## Chapter Outline

### LO 1-1 Describe the way managers use accounting information to create value in organizations.

## VALUE CREATION IN ORGANIZATIONS

- Why Start with Value Creation?
  - Goal of cost accounting is to assist managers in achieving the maximum value for their organizations.
- Value Chain
  - The **value chain** is the set of activities that transforms raw resources into the goods and services end users purchase and consume.
  - It includes the treatment or disposal of any waste generated by the end users.
  - **Value-added activities** are those that customers perceive as adding utility to the goods or services they purchase.
  - Exhibit 1.1 identifies the individual components of the value chain and provides examples of the activities in each component, along with some of the costs associated with these activities. Although the list of value chain components suggests a sequential process, many of the components overlap.
    - Research and development (R&D): The creation and development of ideas related to new products, services, or processes.
    - Design: The detailed development and engineering of products, services, or processes.
    - Purchasing: The acquisition of goods and services needed to produce a good or service.
    - Production: The collection and assembly of resources to produce a product or deliver a service.
    - Marketing and Sales: The process of informing potential customers about the attributes of products or services that leads to their sale.
    - Distribution: The process for delivering products or services to customers.
    - Customer service: The support activities provided to customers for a product or service.
  - Before product ideas are formulated, no value exists. Once an idea is established, however, value is created.
    - When research and development of the product begins, value increases.
    - As the product reaches the design phase, value continues to increase.

- Each component adds value to the product or service.
- Administrative functions, such as human resource management and accounting, are not included as part of the value chain; they are included instead in every business function of the value chain.
- Supply Chain and Distribution Chain
  - The **supply chain** includes the set of firms and individuals that sells goods and services to the firm. (See Business Application box “Choosing Where to Operate in the Supply Chain”)
  - The **distribution chain** includes the set of firms and individuals that buys and distributes goods and services from the firm.
  - These suppliers and customers are on the firm’s *boundaries*. Thus, the supply chain and distribution chain are the parts of the value chain outside the firm.
- Using Cost Information to Increase Value
  - The measurement and reporting of costs is a valuable activity.
  - Cost information that is received too late to help managers make decisions would not add value.
- Accounting and the Value Chain
  - Cost accounting focuses on how the individual stages contribute to the value and how to work with other managers to improve performance. (See Business Application box “The Effect of Product Portfolio on Warranty Costs at Ford”)

## LO 1-2 Distinguish between the uses and users of cost accounting and financial accounting information.

### ACCOUNTING SYSTEMS

- Financial Accounting
  - **Financial accounting** is the field of accounting that reports financial position and income according to accounting rules.
    - It is designed for decision makers who are not directly involved in the daily management of the firm.
    - The users are often external to the firm.
    - The managers in the company are keenly interested in the information contained in the financial accounting reports generated; however, the information is not sufficient for making operational decisions.
- Cost Accounting
  - **Cost accounting** is the field of accounting that measures, records, and reports information about costs.
    - The important criterion is that the information be relevant for the decisions made by managers in a particular business environment with a particular strategy.
    - Managers add value to the organization by the decisions they make; accountants add value by providing good information to managers making the decision.
  - Exhibit 1.2 summarizes some of the major differences between financial and cost accounting.
- Cost Accounting, GAAP, and IFRS
  - The primary purpose of financial accounting is to provide investors (for example, shareholders) or creditors (for example, banks) information regarding company and management performance.

- The financial data prepared for this purpose are governed by generally accepted accounting principles (GAAP) in the United States and international financial reporting standards (IFRS) in many other countries.
  - **Generally accepted accounting principles (GAAP)** are the rules, standards, and conventions that guide the preparation of financial accounting statements for firms registered in the U.S.
  - **International financial reporting standards (IFRS)** are the rules, standards, and conventions that guide the preparation of the financial accounting statements in many other countries.
- Although GAAP and IFRS are converging, differences remain.
- In contrast to cost data for financial reporting to shareholders, cost data for managerial use (that is, within the organization) need not comply with GAAP or IFRS.
  - Management is free to set its own definitions for cost information.
  - The accounting data used for external reporting are often entirely inappropriate for managerial decision making.
  - The cost information is being developed for internal use by managers and does not have to comply with GAAP or IFRS.
- Customers of Cost Accounting
  - Cost information itself is a product with its own customers; the customers are managers.
    - At the production level, where products are assembled or services are performed, information is needed to control and improve operations.
    - At the middle management level, cost information is used to identify problems by highlighting when some aspect of operations is different from expectations.
    - At the executive level, financial information is used to assess the company's overall performance.
  - Cost accountants must work with the users (or customers) of cost accounting information to provide the best possible information for managerial purposes.
  - The most serious problems with accounting systems appear to occur when managers attempt to use accounting information that was developed for external reporting for decision making.

## KEY FINANCIAL PLAYERS IN THE ORGANIZATION

- Exhibit 1.3 identifies the key financial managers in an organization, lists their major responsibilities and primary duties, and provides example activities for each.
- People from engineering, production, marketing, finance, and accounting often work together in cross-functional teams to add value to decision making.

**LO 1-3 Explain how cost accounting information is used for decision making and performance evaluation in organizations.**

## OUR FRAMEWORK FOR ASSESSING COST ACCOUNTING SYSTEMS

- The Manager's Job Is to Make Decisions
  - The common theme among all managerial jobs, however, is decision making.
  - Managers are paid to make decisions.
- Decision Making Requires Information
  - Accounting systems are important because they are a primary source of information for managers.
  - Many, if not most, decisions require information that is likely to come from the accounting system.
  - Our concern with the accounting system is whether it is providing the “best” information to managers.
- Finding and Eliminating Activities that Don't Add Value
  - **Nonvalue-added activities** are activities that do not add value to the goods or services from the customer's perspective.
    - Activities cause costs.
    - In general, if activities that do not add value to the company can be eliminated, then costs associated with them will also be eliminated.
    - A well-designed cost accounting system can also identify nonvalue-added activities that cross boundaries in the value chain.
  - **Cost–benefit analysis** is the process of comparing benefits (often measured in savings or increased profits) with costs associated with a proposed change within an organization.
    - Managers should perform cost–benefit analyses to assess whether proposed changes in an organization are worthwhile.
- Identifying Strategic Opportunities Using Cost Analysis
  - Companies use the value chain and other information about the costs of activities to identify strategic advantages in the marketplace.
  - Alternatively, a company can identify activities that customers value and which the company can provide at lower cost.
- Owners Use Cost Information to Evaluate Managers
  - When owners of a business are not also its managers, both parties' interests may not be properly aligned.

- The second role of the accounting system, in addition to aiding managerial decision making, is to provide information to the owners of the organization about the performance of the organization and the manager.

## COST DATA FOR MANAGERIAL DECISIONS

- Costs for Decision Making
  - To evaluate the financial consequences of alternatives, estimates have to be made for future costs, revenues, and/or assets based on past information.
    - Experience and knowledge of the company's costs can be used to estimate cost changes.
    - A **cost driver** is a factor that causes, or “drives,” costs.
  - When there are two or more alternatives to be considered:
    - **Differential costs** are those that differ among or between alternatives. (See Business Application Box “Reducing Costs by Making Small Changes”)
    - **Differential revenues** are the revenues that change in response to a particular course of action.
  - Exhibit 1.4 illustrates how to compare the status quo with an alternative; the differential revenues and differential costs are identified.

*See Demonstration Problem*

- Costs for Control and Evaluation
  - Organizations divide responsibility for specific functions among employees.
    - Functions are grouped into organizational units, which may be called departments, divisions, segments, or subsidiaries.
    - Reporting relations are shown on an organization chart.
  - A **responsibility center** is a specific unit of an organization assigned to a manager who is held accountable for its operations and resources.
  - Exhibit 1.5 illustrates an organization chart along with the statements for two centers.
  - Budgeting
    - Each responsibility center has a **budget**, which is a financial plan of the revenues and resources needed to carry out activities and meet financial goals.
    - Budgeting helps managers decide whether their goals can be achieved and, if not, what modifications are necessary.
    - Managers are responsible for achieving the targets set in the budget.
      - As part of the planning and control process, managers prepare budgets containing expectations about revenues and costs for the coming period.
      - At the end of the period, they compare actual results with the budget, which allows them to see whether changes can be made to improve future operations.
      - Exhibit 1.6 illustrates budgeted versus actual costs for a responsibility center.
- Different Data for Different Decisions
  - Different decisions often require different cost data.
  - “One size fits all” does not apply to cost accounting.

## LO 1-4 Identify current trends in cost accounting, including data analytics and data visualization.

### TRENDS IN COST ACCOUNTING AND BUSINESS DECISIONS

- Cost Accounting in the Value Chain
  - Exhibit 1.7 summarizes how cost accounting methods have developed with various management practices
- Enterprise Resource Planning
  - **Enterprise resource planning (ERP)** is information technology that links the various systems of the enterprise into a single comprehensive information system.
- Critical Thinking and Data Analytics
  - **Critical thinking** is a systematic process used to analyze a business issue or decision.
    - The following questions are answered using critical thinking:
      - What are the relevant questions (what decisions do I need to make)?
      - What are the data relevant to the analysis and where do I find them?
      - **Big data** is the volume and speed with which information is generated and made available.
      - What are the appropriate tools for analyzing data?
      - **Data analytics** is the systematic evaluation of information to address a decision problem.
      - How can I effectively and persuasively communicate the results of my analysis?
      - **Data visualization** represents how the results of the data analysis are summarized and presented.
  - Applying the Framework
    - Exhibits 1.8, 1.9, and 1.10 illustrate the concepts of critical thinking, data analytics, and data visualization with an example.

*See Demonstration Problem*

- Artificial Intelligence (AI) and Cost Accounting
  - Artificial intelligence (AI) is an area of computer science concerned with the development of machines that can replicate many jobs that would otherwise require human analysis and intervention.
  - Generative AI models (GenAI), which are a subset of AI models, develop new predicted outcomes based on the data used to train the model.
    - Two limitations of various GenAI models include relevance and accuracy. (See Business Application Box “The Implications of Not Checking AI Responses”)

## **LO 1-5 Understand ethical issues faced by accountants and ways to deal with ethical problems that you face in your career.**

### **CHOICES: ETHICAL ISSUES FOR ACCOUNTANTS**

- What Makes Ethics So Important?
  - Accounting information is used to evaluate the performance of managers.
    - Managers are generally held accountable for achieving financial performance targets; failure to achieve them can have serious negative consequences for the managers, including losing their jobs.
    - Both users and preparers of cost need to be aware of the implications of the way in which information is used and when the system has the potential for abuse.
  - Professional organizations such as the Institute of Management Accountants (IMA), Institute of Internal Auditors (IIA), and the American Institute of Certified Public Accountants (AICPA) have developed codes of ethics to help their members maintain the highest levels of ethical conduct and resolve ethical dilemmas.
    - Many businesses use these codes as a public statement of their commitment to certain business practices with respect to their customers and as a guide for their employees.
    - The IMA code of conduct appears in the Appendix to this chapter.
- IMA Code of Ethics
  - The IMA Code of Ethics discusses the steps cost accountants should take when faced with an ethical conflict.
    - DISCUSS the conflict with your immediate superior, or, if the conflict involves your superior, the next level in authority.
    - CLARIFY the relevant issues and concepts by discussions with a disinterested party or by contacting an appropriate and confidential ethics “hotline.”
    - CONSULT an attorney about your rights and obligations.
  - In its “Statement of Ethical Professional Practice,” the IMA states that management (and cost) accountants have a responsibility to maintain the highest levels of ethical conduct.
- The Sarbanes-Oxley Act of 2002 and Ethics
  - Congress passed the Sarbanes-Oxley Act of 2002 to address some of the more serious problems of corporate governance.
    - Provisions in Title III and IV of the Act deals with corporate responsibility and enhanced financial disclosure, respectively.
    - The CEO and CFO are responsible for signing financial statements and stipulating that the financial statements do not omit material information.

- The CEO and CFO must further disclose that they have evaluated the company's internal controls and that they have notified the company's auditors and the audit committee of the board of any fraud that involves management.
- Section 404 of Title IV requires managers to attest to the adequacy of their internal controls.
- The Sarbanes-Oxley Act of 2002 has important implications for managers who design cost information systems.
  - The managers must be aware of the potential for the resulting information to be misleading or to further fraudulent activity.
  - Compliance with Sarbanes-Oxley does not mean that the manager has met all of their ethical responsibilities

## **COST ACCOUNTING AND OTHER BUSINESS DISCIPLINES**

- The boundary between what is cost accounting and what belongs in another discipline is often blurred.

### **Matching**

A. Benchmarking	G. Enterprise resource planning
B. Cost accounting	H. Just-in-time method
C. Cost-benefit analysis	I. Outsourcing
D. Cost driver	J. Responsibility center
E. Differential revenues	K. Supply chain
F. Distribution chain	L. Value chain

\_\_\_\_\_ 1. The set of activities that transforms raw resources into the goods and services end users purchase and consume and includes the treatment or disposal of any waste generated by the end users.

\_\_\_\_\_ 2. The field of accounting that measures, records, and reports information about costs.

\_\_\_\_\_ 3. Factor that causes, or “drives,” costs.

\_\_\_\_\_ 4. The set of firms and individuals that buys and distributes goods and services from the firm.

\_\_\_\_\_ 5. A specific unit of an organization assigned to a manager who is held accountable for its operations and resources.

\_\_\_\_\_ 6. The continuous process of measuring a company's own products, services, and activities against best practices either inside or outside the organization.

- 7. May be used in production or purchasing where each unit is purchased or produced just in time for its use.
- 8. Represents the information technology that links the various systems of the enterprise into a single comprehensive information system.
- 9. One or more of the firm's activities will be performed by another firm or individual in the supply or distribution chain for improved efficiency and cost savings.
- 10. Revenues that change in response to a particular course of action.
- 11. The process of comparing benefits (often measured in savings or increased profits) with costs associated with a proposed change within an organization.
- 12. The set of firms and individuals that sells goods and services to the firm.

## Matching Answers

1. L
2. B
3. D
4. F
5. J
6. A
7. H
8. G
9. I
10. E
11. C
12. K

## Multiple Choice Questions

1. Cost accounting:
  - a. provides information to managers for decision making.
  - b. information is not comparable across organizations.
  - c. is not based on GAAP.
  - d. All of the above.
2. A cost accounting system:
  - a. adds value to the organization.
  - b. is part of Enterprise Resource Planning (ERP) systems.
  - c. is beyond any ethical issues.
  - d. Both a and b.
3. Which of the following positions/functions is not under the supervision of the Chief Financial Officer (CFO)?
  - a. Treasurer
  - b. Controller
  - c. Human resources
  - d. Cost accountants
4. Which of the following statements is correct?
  - a. All activities add value to the organization.
  - b. All value chain functions are within the organization.
  - c. Supply chain and value chain do not overlap.
  - d. Cost information reduces value.
5. In cost–benefit analysis:
  - a. benefits are often measured in savings or increased profits.
  - b. proposed changes within the organizational structure are evaluated.
  - c. benefits should outweigh costs to be acceptable.
  - d. All of the above.
6. Cost drivers are:
  - a. factors that drive costs.
  - b. activities that consume resources in Activity-Based Costing (ABC).
  - c. few in traditional costing systems.
  - d. All of the above.

*Use the following information to answer Questions 7 and 8:*

Company A's quarterly sales revenue and operating costs are \$12,000 and \$9,500, respectively. Operating costs include \$1,500 of leasing charge for computers. A new product line will increase sales revenue by 30 percent and costs (other than the leasing charge, which remains unchanged) by 35 percent.

7. If Company A includes the new product line, then:
  - a. sales revenue will increase by \$3,200.
  - b. operating costs will increase to \$12,300.
  - c. operating profits will increase by \$1,100.
  - d. operating costs are not relevant.
8. The leasing charge:
  - a. is differential.
  - b. is relevant to the decision.
  - c. plays no role in the decision.
  - d. will not change in the future.
9. New trends in cost accounting include:
  - a. the just-in-time method.
  - b. total quality management.
  - c. benchmarking and continuous improvement.
  - d. All of the above.
10. Ethical conflicts in cost accounting:
  - a. are governed by the code of ethics of the professional organizations.
  - b. will not have implications for cost accountants' decisions.
  - c. should be resolved to meet the demands of managers.
  - d. will never lead to resignation of cost accountants.
11. Financial statements for external users are characterized as:
  - a. user-specific.
  - b. managerial reports.
  - c. governed by GAAP.
  - d. not consistent with GAAP.
12. Which of the following statements is correct?
  - a. Design for manufacturability is not compatible with activity-based costing.
  - b. Performance of key suppliers and business partners must be constantly evaluated.

- c. Cost of quality is a system that identifies the costs of producing high-quality items.
- d. Enterprise resource planning systems duplicate the effort and costs of standalone systems.

## Multiple Choice Answers

1. d (LO 1-1)
2. d (LO 1-1)
3. c (LO 1-4)
4. b (LO 1-1)
5. d (LO 1-1)
6. d (LO 1-2, LO 1-3)
7. b (LO 1-3)

Sales revenue increase =  $\$12,000 \times 30\% = \$3,600$ .

Operating cost increase =  $(\$9,500 - \$1,500) \times 35\% = \$2,800$ .

Operating cost =  $\$9,500 + \$2,800 = \$12,300$ .

Operating profit increase =  $\$3,600 - \$2,800 = \$800$ .

8. c (LO 1-3)
9. d (LO 1-4)
10. a (LO 1-5)
11. c (LO 1-2)
12. b (LO 1-4)

## Demonstration Problem

Jim is a florist who runs Bountiful Flower Shop as a sole owner. His typical monthly operating results include the following: sales revenue \$4,000, flower costs \$800, supplies \$300, labor costs \$600, utilities \$250, rent \$720, and other costs \$350.

He recently attended a trade show and was attracted by a national chain that offered him referral service, baskets, and new flower arrangements in exchange for a monthly licensing fee of \$1,000. He figures that the additional business from referrals will increase his revenues by 40 percent; flower materials, supplies, and labor costs by 45 percent; utilities by 10 percent; and other costs by 20 percent. Rent will not change as he will still use the same facility.

Required:

1. Should Jim expand his business to be associated with the national chain? Support your answer.
2. If Jim can negotiate a different term with the national chain, what licensing fee makes him indifferent between the two choices (i.e., the status quo of going solo vs. the alternative of being associated with the national chain)?

## Demonstration Problem – Solution

### Part 1

Jim should not expand his business because the projected results show that he will be worse off by \$260 per month. Rent remains the same under either option and is irrelevant to the decision.

Bountiful Flower Shop			
Projected Income Statement			
For One Month			
	Status Quo: Run Business "As Is"	Alternative: Associate with National Chain	Difference
Sales revenue	<u>\$4,000</u>	<u>\$5,600</u> <sup>a</sup>	<u>\$1,600</u>
Costs:			
Flower	800	1,160 <sup>b</sup>	360
Supplies	300	435 <sup>b</sup>	135
Labor	600	870 <sup>b</sup>	270
Utilities	250	275 <sup>c</sup>	25
Rent	720	720	0
Licensing fee	0	1,000	
Other costs	<u>350</u>	<u>420</u> <sup>d</sup>	<u>70</u>
Total costs	<u>\$3,020</u>	<u>\$4,880</u>	<u>\$1,860</u>
Operating profits	<u>\$ 980</u>	<u>\$ 720</u>	<u><u>\$(260)</u></u>

<sup>a</sup> Increase by 40%

<sup>b</sup> Increase by 45%

<sup>c</sup> Increase by 10%

<sup>d</sup> Increase by 20%

## Part 2

Considering the loss of \$260 if Jim associates with the national chain, a licensing fee of \$740 per month (or the proposed monthly licensing fee of \$1,000 – the decrease in operating profits of \$260 that otherwise results) will generate the status quo operating profits of \$980. As a result, any licensing fee of less than \$740 per month will make associating with the national chain a better alternative.