Managerial Accounting 17th edition Warren Solutions Manual

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CHAPTER 15 (FIN MAN); CHAPTER 1 (MAN)
INTRODUCTION TO MANAGERIAL ACCOUNTING

DISCUSSION QUESTIONS

1. Managerial accounting is the process of developing information and management tools to achieve an organization's objectives. The management process is composed of four basic functions: strategic planning, measurement, evaluation, and control. Strategic planning is the process of developing long-term objectives. Measurement is the process of developing and agreeing upon performance metrics on how well the company is achieving its objectives. Evaluation is the process by which management monitors operations by comparing actual and expected results. Control is the process by which management takes actions to encourage specific behaviors or outcomes.

2. Financial accounting and managerial accounting are different in several ways. Financial accounting information is reported in statements that are useful to persons or groups outside of a company. These statements objectively report the results of operations for fixed periods of time and the financial condition of the business under generally accepted accounting principles. Managerial accounting information uses both subjective and objective information to meet the specific needs of management. This non-GAAP information can be reported periodically or as needed by management and can be reported for the entire entity or for segments of the organization. This information includes (i) historical data, which provide objective measures of past operations, and (ii) estimated data, which provide subjective estimates about future decisions.

3. **a.** Vertical units are structured as separate businesses within a company and normally develop and sell products directly to customers. Horizontal units are not responsible for developing and selling products, but provide services to other horizontal and vertical units within the company.
b. The accounting and legal departments are horizontal units within a company.
c. A consumer products division would be considered a vertical unit within a company.

4. Direct materials cost

5. Prime costs are the combination of direct materials and direct labor costs, while conversion costs are the combination of direct labor costs and manufacturing overhead costs.

6. Product costs are composed of three elements of manufacturing costs: direct materials cost, direct labor cost, and manufacturing overhead cost. These costs are treated as assets until the product is sold. Period costs consist of selling and administrative expenses that are used in generating revenue during the current period. They are recognized as expenses on the current period's income statement.

7. The three inventory accounts for a manufacturing business are as follows:
a. Finished goods inventory consists of completed (or finished) products that have not been sold.
b. Work in process inventory consists of the direct materials, direct labor, and manufacturing overhead costs for products that have entered the manufacturing process, but are not yet completed.
c. Materials inventory consists of the costs of the direct and indirect materials that have not entered the manufacturing process.

8. The cost of finished goods and the cost of work in process include the following:
a. Direct materials—the costs of materials that enter directly into the finished product.
b. Direct labor—the wages of factory workers who convert materials into a finished product.
c. Manufacturing overhead—the costs, other than direct materials and direct labor, that are incurred in the manufacturing process.

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DISCUSSION QUESTIONS (Continued)

9. The manufacturing costs incurred during a period include direct materials used in production plus the direct labor and manufacturing overhead costs incurred during the period. The cost of goods manufactured for a period is computed by adjusting the manufacturing costs incurred during the period for the effects of beginning and ending work in process. Beginning work in process inventory is added and ending work in process is subtracted from the manufacturing costs incurred during a period to arrive at the cost of goods manufactured for the period.

10. A retail business purchases merchandise (products) in a finished state for resale to customers. The cost of product sold is called *cost of goods sold.* A manufacturer makes the product it sells using direct materials, direct labor, and manufacturing overhead, which make up the cost of goods manufactured included in the "Cost of goods sold" section of the income statement.

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BASIC EXERCISES

BE 15–1 (FIN MAN); BE 1–1 (MAN)

Strategic planning (a)
Evaluation (c)
Control (b)

BE 15–2 (FIN MAN); BE 1–2 (MAN)

a. Direct Materials
b. Direct Labor
c. Manufacturing Overhead
d. Manufacturing Overhead

BE 15–3 (FIN MAN); BE 1–3 (MAN)

a. P
b. B
c. C
d. C

BE 15–4 (FIN MAN); BE 1–4 (MAN)

a. Period cost
b. Product cost
c. Period cost
d. Product cost

BE 15–5 (FIN MAN); BE 1–5 (MAN)

a.	**Work in process inventory, June 1**		**$ 70,200**
	Cost of direct materials used in production	**$260,000**	
	Direct labor	**340,000**	
	Manufacturing overhead	**182,300**	
	Total manufacturing costs incurred in June		**782,300**
	Total manufacturing costs		**$852,500**
	Work in process inventory, June 30		**(74,000)**
	Cost of goods manufactured		**$778,500**
b.	**Finished goods inventory, June 1**		**$ 33,300**
	Cost of goods manufactured		**778,500**
	Cost of finished goods available for sale		**$811,800**
	Finished goods inventory, June 30		**(44,100)**
	Cost of goods sold		**$767,700**

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BE 15–6 (FIN MAN); BE 1–6 (MAN)

a.

Number of Guests	Nights per Visit	Guest Nights
4,400	1	4,400
1,800	2	3,600
750	3	2,250
600	4	2,400
20	5	100
		12,750

b. 15,000 available room nights (500 rooms × 30 nights in June)

c.

$$\text{Occupancy Rate} = \frac{\text{Guest Nights}}{\text{Available Room Nights}}$$

$$\text{Occupancy Rate} = \frac{12{,}750}{15{,}000} = 85\%$$

d. The utilization (occupancy) rate has improved from 82% in the prior year to 85% in the current year.

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EXERCISES

Ex. 15–1 (FIN MAN); Ex. 1–1 (MAN)

a. Direct materials cost
b. Manufacturing overhead cost
c. Direct materials cost
d. Direct materials cost
e. Direct materials cost
f. Manufacturing overhead cost
g. Direct materials cost
h. Manufacturing overhead cost
i. Direct labor cost

Ex. 15–2 (FIN MAN); Ex. 1–2 (MAN)

a. Manufacturing overhead cost
b. Direct materials cost
c. Manufacturing overhead cost
d. Manufacturing overhead cost
e. Direct materials cost
f. Manufacturing overhead cost
g. Direct materials cost
h. Manufacturing overhead cost
i. Direct materials cost
j. Direct labor cost

Ex. 15–3 (FIN MAN); Ex. 1–3 (MAN)

b, e, g, h

Ex. 15–4 (FIN MAN); Ex. 1–4 (MAN)

a. Period cost
b. Period cost
c. Product cost
d. Product cost
e. Product cost
f. Period cost
g. Product cost
h. Period cost
i. Product cost
j. Period cost
k. Period cost
l. Product cost
m. Product cost
n. Period cost
o. Period cost
p. Product cost
q. Product cost

Ex. 15–5 (FIN MAN); Ex. 1–5 (MAN)

a. cost object
b. product
c. conversion
d. operational planning
e. cost
f. work in process inventory
g. decreases

Ex. 15–6 (FIN MAN); Ex. 1–6 (MAN)

a. electricity used to run assembly line
b. prime
c. strategic
d. period
e. evaluation
f. indirect
g. product

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Ex. 15–7 (FIN MAN); Ex. 1–7 (MAN)

a. indirect
b. direct
c. indirect
d. indirect
e. direct
f. indirect
g. indirect
h. indirect
i. indirect
j. indirect
k. indirect
l. direct

Ex. 15–8 (FIN MAN); Ex. 1–8 (MAN)

a. The errors in the manufacturing cost report are as follows:

1. The maintenance salaries of $84,400 and indirect materials of $56,200 should be included as manufacturing overhead.

2. The manufacturing overhead incorrectly includes the following items: sales salaries of $348,750, promotional expenses of $315,000, corporate office insurance and property taxes of $219,400, and corporate office depreciation of $90,000. These items should not be included as manufacturing overhead.

b. The corrected report is as follows:

Marching Ants Inc. Manufacturing Costs For the Quarter Ended June 30		
Cost of direct materials used in production		$ 551,300
Direct labor		478,100
Manufacturing overhead:		
Maintenance salaries	$ 84,400	
Indirect materials	56,200	
Supervisor salaries	517,500	
Heat, light, and power	140,650	
Insurance and property taxes—plant	151,900	
Depreciation—plant and equipment	123,750	
Total manufacturing overhead		1,074,400
Total		$2,103,800

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Ex. 15–9 (FIN MAN); Ex. 1–9 (MAN)

a.

Sorensen Manufacturing Company Income Statement For the Month Ended January 31		
Revenues		$1,200,000
Cost of goods sold		(675,000)
Gross profit		$ 525,000
Operating expenses:		
Selling expenses	$215,000	
Administrative expenses	125,000	
Total operating expenses		(340,000)
Net income		$ 185,000

b. Inventory balances on January 31:

Materials ($250,000 – $180,000)	$70,000
Work in Process ($180,000 + $450,000 + $180,000 – $760,000)	$50,000
Finished Goods ($760,000 – $675,000)	$85,000

Ex. 15–10 (FIN MAN); Ex. 1–10 (MAN)

Diesel Additives Company Balance Sheet August 31		
Current assets:		
Cash		$167,500
Accounts receivable		348,200
Inventories:		
Materials	$26,800	
Work in process	61,100	
Finished goods	89,400	
Total inventories		177,300
Supplies		13,800
Prepaid insurance		9,000
Total current assets		$715,800

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Ex. 15–11 (FIN MAN); Ex. 1–11 (MAN)

Materials inventory, September 1		$ 235,200
Materials purchased during September		815,900
Cost of materials available for use		$1,051,100
Materials inventory, September 30		(203,000)
Cost of direct materials used in production		$ 848,100

Ex. 15–12 (FIN MAN); Ex. 1–12 (MAN)

a. $352,410 ($19,660 + $332,750)
b. $328,910 ($352,410 – $23,500)
c. $474,120 ($515,770 – $41,650)
d. $461,770 ($515,770 – $54,000)
e. $165,000 ($1,240,000 – $1,075,000)
f. $172,000 ($1,240,000 – $1,068,000)

Ex. 15–13 (FIN MAN); Ex. 1–13 (MAN)

Work in process inventory, January 1		$ 430,400
Manufacturing costs incurred during January:		
Cost of direct materials used in production	$1,287,200	
Direct labor	1,720,500	
Manufacturing overhead	3,600,700	
Total manufacturing costs incurred		6,608,400
Total manufacturing costs		$7,038,800
Work in process inventory, January 31		(391,200)
Cost of goods manufactured		$6,647,600

Ex. 15–14 (FIN MAN); Ex. 1–14 (MAN)

a. $942,500 ($116,600 + $825,900)
b. $812,500 ($942,500 – $130,000)
c. $501,120 ($540,000 – $38,880)
d. $470,000 ($540,000 – $70,000)
e. $920,000 ($1,100,000 – $180,000)
f. $155,000 ($1,100,000 – $945,000)

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Ex. 15–15 (FIN MAN); Ex. 1–15 (MAN)

a.

Firetree Manufacturing Company Statement of Cost of Goods Manufactured For the Month Ended March 31			
Work in process inventory, March 1			$ 428,700
Direct materials:			
Materials inventory, March 1	$ 240,000		
Purchases	2,673,500		
Cost of materials available for use	$2,913,500		
Materials inventory, March 31	(195,200)		
Cost of direct materials used in production		$2,718,300	
Direct labor		3,200,000	
Manufacturing overhead:			
Indirect labor	$ 320,000		
Machinery depreciation	213,000		
Heat, light, and power	174,000		
Supplies	36,100		
Property taxes	30,000		
Miscellaneous costs	48,200		
Total manufacturing overhead		821,300	
Total manufacturing costs incurred in March			6,739,600
Total manufacturing costs			$7,168,300
Work in process inventory, March 31			(510,400)
Cost of goods manufactured			$6,657,900

b.

Finished goods inventory, March 1	$ 582,100
Cost of goods manufactured	6,657,900
Cost of finished goods available for sale	$7,240,000
Finished goods inventory, March 31	(614,400)
Cost of goods sold	$6,625,600

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Ex. 15–16 (FIN MAN); Ex. 1–16 (MAN)

a.	Finished goods inventory, January 1		$ 880,000
	Cost of goods manufactured		4,490,000
	Cost of finished goods available for sale		$5,370,000
	Finished goods inventory, January 31		(775,000)
	Cost of goods sold		$4,595,000
b.	Sales		$ 6,600,000
	Cost of goods sold		(4,595,000)
	Gross profit		$ 2,005,000
c.	Gross profit		$2,005,000
	Operating expenses:		
	Selling expenses	$530,000	
	Administrative expenses	340,000	
	Total operating expenses		(870,000)
	Net income		$1,135,000

Ex. 15–17 (FIN MAN); Ex. 1–17 (MAN)

a.	Sales		$ 792,000
	Less gross profit		(462,000)
	Cost of goods sold		$ 330,000
b.	Cost of goods manufactured		$ 396,000
	Less cost of goods sold		(330,000)
	Finished goods inventory		$ 66,000
c.	Purchased materials		$244,200
	Less materials inventory		(33,000)
	Direct materials cost		$211,200
d.	Total manufacturing costs		$ 455,400
	Less: Direct materials	$211,200	
	Manufacturing overhead costs (indirect labor and factory depreciation)*	198,000	(409,200)
	Direct labor cost		$ 46,200

* $171,600 + $26,400

e.	Total manufacturing costs		$ 455,400
	Less cost of goods manufactured		(396,000)
	Work in process inventory		$ 59,400

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PROBLEMS

Prob. 15–1A (FIN MAN); Prob. 1–1A (MAN)

Cost	Product Costs			Period Costs	
	Direct Materials Cost	Direct Labor Cost	Manufacturing Overhead Cost	Selling Expense	Administrative Expense
a.					X
b.				X	
c.	X				
d.	X				
e.			X		
f.				X	
g.					X
h.			X		
i.			X		
j.			X		
k.	X				
l.	X				
m.	X				
n.			X		
o.	X				
p.			X		
q.			X		
r.	X				
s.			X		
t.				X	
u.			X		
v.					X
w.			X		
x.				X	
y.		X			
z.			X		

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Prob. 15–2A (FIN MAN); Prob. 1–2A (MAN)

Cost	Product Costs			Period Costs	
	Direct Materials Cost	Direct Labor Cost	Manufacturing Overhead Cost	Selling Expense	Administrative Expense
a.			X		
b.	X				
c.	X				
d.			X		
e.				X	
f.				X	
g.			X		
h.					X
i.			X		
j.			X		
k.			X		
l.					X
m.					X
n.			X		
o.			X		
p.					X
q.			X		
r.			X		
s.			X		
t.			X		
u.					X
v.				X	
w.		X			
x.			X		

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Instructor Manual

Warren/Jones/Tayler, Managerial Accounting, 17e, 2026, 9798214040820;
Chapter 1, Introduction to Managerial Accounting

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Purpose and Perspective of the Chapter

The purpose of Chapter 1 is to introduce students to managerial accounting and how it differs from financial accounting. Managerial accounting provides information to internal users. Managers use this information to plan, measure, evaluate, and control the performance of the business. Managerial accounting information includes historical data to evaluate performance and estimated data to assist in making future decisions. Financial accounting is reported at fixed intervals and provides information to assist external users in making decisions. These external users include shareholders, creditors, government agencies, and the general public.

Students will also learn how managerial accounting relates to manufacturing and service businesses. Within manufacturing, costs can be divided into three categories: direct materials, direct labor, and manufacturing overhead. Direct costs can be directly connected to a specific cost object, while indirect costs are those that cannot be traced conveniently to a cost object. Costs other than direct materials and direct labor that are incurred in the manufacturing process are classified as manufacturing overhead cost. Costs can be divided into product and period costs. Product costs consist of manufacturing costs, direct materials, direct labor, and manufacturing overhead. Period costs are selling and administrative costs.

Financial statements for manufacturing entities are somewhat more complex than for retail or service businesses. For example, manufacturers have three inventory accounts on their balance sheets for raw materials, work in process, and finished goods. These inventories are reported, along with the costs of production, in a cost of goods manufactured statement. This information is used to determine the cost of goods sold on the income statement.

Finally, service businesses look at utilization rates to measure the use of fixed assets in serving customers. Examples are provided of service industries and businesses, and differences are explained between the use of managerial accounting in manufacturing and service entities.

Chapter Objectives

The following objectives are addressed in this chapter:

Obj. 1 Describe how managerial accounting supports the management process, its differences with financial accounting, and its place within the organization.

Obj. 2 Describe the nature of manufacturing operations, including different types and classifications of costs.

Obj. 3 Describe financial statements for a manufacturing business, including the balance sheet, statement of cost of goods manufactured, and income statement.

Obj. 4 Compute utilization rates in evaluating the performance of service companies.

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Complete List of Chapter Activities and Assessments

The following table organizes activities and assessments by objective, so that you can see how all this content relates to objectives and make decisions about which content you would like to emphasize in your class based on your objectives. For additional guidance, refer to the Teaching Online Guide.

Chapter Objective	Activity/Assessment	Source (i.e., PPT slide, Workbook)
Obj. 1	Discussion Activity 1	PPT Slides 11–12
Obj. 2	Knowledge Check Activity 1	PPT Slides 20–21
Obj. 2	Knowledge Check Activity 2	PPT Slides 25–26
Obj. 3	Knowledge Check Activity 3	PPT Slides 34–35
Obj. 4	Discussion Activity 2	PPT Slides 40–41

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Key Terms

Chief accounting officer (CAO): A vice president of accounting who reports to the CFO and oversees technical accounting, accounting policy, credit, collections, tax, treasury, and internal audit functions.

Chief executive officer (CEO): The highest-ranking person in a company.

Chief financial officer (CFO): An executive vice president responsible for overseeing the financial activities of an entire company.

Control: The process by which management takes actions to encourage specific behaviors or outcomes.

Controller: The manager of the accounting function of a vertical (business unit).

Conversion costs: The combination of direct labor and manufacturing overhead costs.

Cost: A sacrifice made to obtain some benefit.

Cost object: A product, sales territory, department, or activity to which costs are assigned, depending on the decision-making needs of management.

Cost of goods manufactured: The total cost of making and finishing a product.

Cost of goods sold: The cost of merchandise sold recognized as an expense; the cost of finished goods available for sale minus the ending finished goods inventory.

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Data analytics: The science of analyzing large amounts of raw data, sometimes called "big data," to discover patterns, identify anomalies, or gain other useful insights for decision making.

Direct costs: Costs that are identified with and traced to a cost object.

Direct labor cost: The wages of factory workers who are directly involved in converting materials into a finished product.

Direct materials cost: The cost of materials that are an integral part of the finished product.

Evaluation: The management process by which management monitors operations by comparing actual and expected results.

Factory burden: Costs, other than direct materials and direct labor costs, that are incurred in the manufacturing process. Also called *manufacturing overhead cost*, *factory overhead*, or simply *overhead*.

Factory overhead: Costs, other than direct materials and direct labor costs, that are incurred in the manufacturing process. Also called *manufacturing overhead cost*, *factory burden*, or simply *overhead*.

Financial accounting: The branch of accounting that is concerned with recording transactions using generally accepted accounting principles (GAAP) for a business or other economic unit and with a periodic preparation of various statements from such records.

Finished goods inventory: The direct materials costs, direct labor costs, and manufacturing overhead costs of finished products that have not been sold.

Horizontals: Departments within a company that do not develop products but provide services to the various verticals and other horizontals.

Indirect costs: Costs that are not identified with or traced to a cost object.

Indirect labor: Labor costs that are not directly traced to the finished product; any labor needed to make a product that is not directly traced to the product.

Indirect materials: Materials costs that are not directly traced to the finished product; any materials needed to make a product that are not directly traced to the product.

Management accounting: The branch of accounting that uses both historical and estimated data in providing information that management uses in conducting daily operations, in planning future operations, and in developing overall business strategies. Also called *managerial accounting*.

Management by exception: The philosophy of focusing evaluation on "unexpected" good or bad performance.

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Management process: The four basic management functions of (1) strategic planning, (2) measurement, (3) evaluation, and (4) control.

Managerial accounting: The branch of accounting that uses both historical and estimated data in providing information that management uses in conducting daily operations, in planning future operations, and in developing overall business strategies. Also called *management accounting*.

Manufacturing overhead cost: Costs, other than direct materials and direct labor costs, that are incurred in the manufacturing process. Also called *factory overhead*, *factory burden*, or simply *overhead*.

Materials inventory: The cost of materials that have not yet entered into the manufacturing process.

Measurement: The management process where managers develop and agree upon performance metrics on how well the company is achieving its objectives.

Operational planning: Developing short-term actions for managing the day-to-day operations of a company.

Overhead: Costs, other than direct materials and direct labor costs, that are incurred in the manufacturing process. Also called *manufacturing overhead cost*, *factory overhead*, or *factory burden*.

Period costs: Selling and administrative expenses incurred in marketing the product, delivering the product, or managing the company and not directly related to manufacturing the product.

Prime costs: The combination of direct materials and direct labor costs.

Product costs: The three components of manufacturing cost: direct materials, direct labor, and manufacturing overhead costs.

Statement of cost of goods manufactured: A statement prepared by manufacturing companies that summarizes the cost of goods manufactured during the period.

Strategic planning: Developing long-term actions to achieve a company's objectives.

Utilization rate: A measure of the use of a fixed asset in serving customers relative to the asset's capacity.

Verticals: Business units often structured as separate businesses within a parent company that develop products sold directly to consumers.

Work in process inventory: The direct materials costs, the direct labor costs, and the applied manufacturing overhead costs that have entered into the manufacturing process but are associated with products that have not been finished.

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WHAT'S NEW IN THIS CHAPTER

See the Transition Guide for a list of improvements in this chapter from the previous edition.

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CHAPTER OUTLINE

The following outline organizes activities (including any existing discussion questions in PowerPoints or other supplements) and assessments by chapter (and therefore by topic), so that you can see how all the content relates to the topics covered in the text.

I. Managerial Accounting (1-1, PPT Slides 3–12, BUSPROG: Analytic, AICPA: FN-Measurement)

   a. Managerial accounting, sometimes called management accounting, is the process of developing information and management tools to achieve an organization's objectives.
   b. The management process is composed of the following four basic functions:
      - Strategic planning
      - Measurement
      - Evaluation
      - Control
   c. Strategic planning is where the management process begins to develop long-term objectives and normally involves a time horizon of five to ten years.
   d. Operational planning develops short-term actions for managing the day-to-day operations of the company.
   e. Measurement is the process where managers develop and agree upon performance metrics on how well the company is achieving its objectives.
   f. Evaluation is the process by which management monitors operations by comparing actual and expected results.
   g. Control is the process by which management takes actions to encourage specific behaviors or outcomes.
   h. Exhibit 1 (PPT Slide 5) provides the managerial accounting schema which describes the primary roles of managerial accounting.
   i. Considerations and choices in developing costing information include:
      i. What cost system to use to record and report the cost of a product
      ii. How to allocate overhead costs, such as equipment depreciation, to products
      iii. How to allocate support department costs, such as factory janitorial costs, to products
      iv. How to allocate joint manufacturing costs to products

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v. How to report fixed production costs, such as factory supervisory salaries
vi. How to determine and report variances (differences) between actual and planned costs

j. Managerial accounting develops a variety of tools for management to use in analyzing information and making decisions, including:
- Cost-volume-profit analysis for determining the sales necessary to break even or earn a target profit
- Budgeting for resource planning
- Decentralization for assessing operations that are centralized or distributed throughout the company
- Differential analysis for comparing the profitability of various options
- Capital investment analysis for use in deciding among long-term assets to purchase

k. Exhibit 2 (PPT Slide 8) shows the differences between financial accounting and managerial accounting.

l. Most large companies are organized in terms of "verticals" and "horizontals."
i. Verticals are sometimes referred to as business units, because they are often structured as separate businesses within the parent company. Verticals develop products that are sold directly to customers.
ii. Horizontals are departments within the company that are not responsible for developing products. Horizontals provide services to the various verticals and other horizontals.

m. Exhibit 3 (PPT Slide 10) shows a partial organization chart for McAfee.

n. **Discussion Activity 1:** *What do you think of the role of managerial accounting in manufacturing and service industries? In groups of three to four students, select an industry, such as airlines, telecommunications, health care, smartphone manufacturers, pharmaceuticals, among others. Discuss how using managerial accounting techniques can directly benefit the specific industry chosen. Select a spokesperson from your group to share your findings with the class.* (PPT Slides 11–12)
- No matter the industry chosen, the managerial accounting toolbox can be very helpful in decision making. For example, airlines want to know how many passengers are needed for individual flights to be profitable, and they often cancel or add flights based on these analyses. In a manufacturing environment, factories will adjust their production based on the budgeted sales and the break-even sales required to cover their costs.
- With all the needs of businesses in various industries, there will be a robust discussion of how managerial accounting can help with significant management decisions.

II. Manufacturing Operations (1-2, PPT Slides 13–26, BUSPROG: Analytic, AICPA: FN-Measurement)

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a. The operations of a business can be classified as service, retail, or manufacturing. Most of the managerial accounting concepts that apply to manufacturing businesses also apply to service and retail businesses.
b. As a basis for illustration of manufacturing operations, a guitar manufacturer, Legend Guitars, is used in this chapter.
c. Exhibit 4 (PPT Slide 13) illustrates the guitar-making operations of Legend Guitars.
d. A cost is a sacrifice made to obtain some benefit and, in managerial accounting, costs are often assigned to a cost object.
e. A cost object can be anything to which costs are assigned and will vary depending upon the decision-making needs of management.
f. Direct costs are identified with and can be traced to a cost object.
g. Indirect costs are not identified with or traced to a cost object.
h. Exhibit 5 (PPT Slide 14) shows the direct costs at Legend Guitars, and Exhibit 6 (PPT Slide 14) shows Legend Guitars' indirect costs.
i. Exhibit 7 (PPT Slide 15) shows how costs are classified as direct and indirect at Legend Guitars.
j. Exhibit 8 (PPT Slide 16) shows the three manufacturing costs of Legend Guitars: direct materials, direct labor, and manufacturing overhead.
k. Manufactured products begin with raw materials that are converted into finished products.
l. To be classified as a direct materials cost, the cost must be both of the following:
    - An integral part of the finished product
    - A significant portion of the total cost of the product
m. Examples of direct materials costs include the following:
    - The cost of the wood used in producing a guitar
    - The cost of electronic components for a television
    - Silicon wafers for microcomputer chips
    - Tires for an automobile
n. Most manufacturing processes use employees to convert materials into finished products.
o. The cost of employee wages that is an integral part of the finished product is classified as direct labor cost.
p. A direct labor cost must meet both of the following criteria:
    - An integral part of the finished product
    - A significant portion of the total cost of the product
q. Examples of direct labor costs include the following:
    - The wages of employees who cut guitars out of raw lumber and assemble them
    - Mechanics' wages for repairing an automobile
    - Assemblers' wages for assembling a laptop computer
r. Costs other than direct materials and direct labor that are incurred in the manufacturing process are combined and classified as manufacturing overhead cost (sometimes called factory burden or factory overhead).
s. All manufacturing overhead costs are indirect costs of the product.
t. Some manufacturing overhead costs include the following:
    - Heating and lighting the factory

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- Repairing and maintaining factory equipment
- Property taxes on factory buildings and land
- Insurance on factory buildings
- Depreciation of factory plant and equipment

u. **Knowledge Check Activity 1:** *For a manufacturer, which of the following would be considered a manufacturing overhead cost?* (PPT Slides 20–21)
   - The answer is electricity costs in a furniture manufacturing facility.
   - Costs other than direct materials cost and direct labor that are incurred in the manufacturing process, such as electricity costs, are considered manufacturing overhead costs.

v. Exhibit 9 (PPT Slide 22) illustrates the prime costs and conversion costs at Legend Guitars.

w. Exhibit 10 (PPT Slide 23) shows examples of product costs and period costs at Legend Guitars.

x. Exhibit 11 (PPT Slide 24) shows a flowchart of product costs, period costs, and financial statements.

y. **Knowledge Check Activity 2:** *Which of the following would be considered a period cost?* (PPT Slides 25–26)
   - The answer is sales manager's salary.
   - Any cost that is incurred in the factory or manufacturing process is a product cost. The sales manager's salary would be an administrative cost, which is considered a period cost.

III. Financial Statements for a Manufacturing Business (1-3, PPT Slides 27–35, BUSPROG: Analytic, AICPA: FN-Measurement)

a. The statement of stockholders' equity and statement of cash flows for a manufacturing business are similar to those for service and retail businesses.

b. However, the balance sheet and income statement for a manufacturing business are more complex.

c. This is because a manufacturer makes the products that it sells and, thus, must record and report product costs.

d. The reporting of product costs primarily affects the balance sheet and the income statement.

e. A manufacturing business reports three types of inventory on its balance sheet as follows:
   i. Materials inventory (sometimes called raw materials inventory) consists of the costs of the direct and indirect materials that have not yet entered the manufacturing process.
   ii. Work in process inventory consists of the direct materials, direct labor, and manufacturing overhead costs for products that have entered the manufacturing process but are not yet completed (in process).
   iii. Finished goods inventory consists of completed (or finished) products that have not been sold.

f. Exhibit 12 (PPT Slide 29) shows a balance sheet presentation of inventory in retail and manufacturing companies.

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g. Exhibit 13 (PPT Slide 30) shows income statements for retail and manufacturing businesses.
h. A retail business determines its cost of goods sold by first adding its net purchases for the period to its beginning inventory.
i. This determines inventory available for sale during the period. The ending inventory is then subtracted to determine the cost of goods sold.
j. A manufacturing business makes the products it sells using direct materials, direct labor, and manufacturing overhead.
    - A manufacturing business must determine its cost of goods manufactured during the period.
    - The cost of goods manufactured is determined by preparing a statement of cost of goods manufactured.
k. Exhibit 14 (PPT Slide 32) shows a manufacturing company's income statement with a statement of cost of goods manufactured.
l. Exhibit 15 (PPT Slide 33) illustrates the flow of manufacturing costs.
m. **Knowledge Check Activity 3:** *Which of the following is calculated for both a manufacturer and a retail business?* (PPT Slides 34–35)
    - The answer is cost of goods sold.
    - Both a manufacturer and a retail business would need to calculate their cost of goods sold to report on the income statement. Only a manufacturer would need to calculate the ending balances of raw materials and work in process inventories, as well as create a statement of cost of goods manufactured.

IV. Analysis for Decision Making: Utilization Rates (1-4, PPT Slides 36–41, BUSPROG: Analytic, AICPA: FN-Measurement)

a. A utilization rate measures the use of a fixed asset in serving customers relative to the asset's capacity.
b. A higher utilization rate is considered favorable, while a lower utilization rate is considered unfavorable.
c. Different service industries will have different names and computations used for measuring utilization rates.
d. In the hotel industry, for example, utilization is measured by the occupancy rate, which is computed as:
    - Occupancy Rate = Guest Nights/Available Room Nights
    - Guest Nights = Number of Guests × Number of Nights per Visit (per time period)
    - Available Room Nights = Number of Available Rooms × Number of Nights per Time Period
e. Exhibit 16 (PPT Slide 37) lists examples of service industries, services, and companies.
f. Exhibit 17 (PPT Slides 38–39) lists managerial accounting differences between manufacturing and service companies.
g. **Discussion Activity 2:** *Service businesses often have a unique item that can be used as a utilization rate, such as the example of guest nights in the hotel industry. In groups of three to four students, think about service businesses and what they may use for a possible utilization rate. Consider transportation, shipping, banking, and repair service industries, among others. Share your findings with your class.* (PPT Slides 40–41)

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- Students likely found many examples in service businesses and possible utilizations rates. For example, companies such as FedEx and UPS may use a rate per mile on their delivery truck and airplanes. Auto repair facilities may use specific machinery that reflects the costs associated with services, such as a machine used for front-end alignments.
- Businesses continue to rely on fixed assets and technological advancements to lower costs and provide services.

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ADDITIONAL DISCUSSION QUESTIONS

The following are discussion questions that do not appear in the text, PPTs, or courseware – they are for you to use as you wish. You can assign these questions several ways: in a discussion forum in your LMS; as whole-class discussions in person; or as a partner or group activity in class.

1. Discussion: Managerial Accounting Tools (Managerial Accounting, 1-1, PPT Slide 7) Duration 10 minutes.
    a. What are some of the more popular managerial accounting tools, and how do they help management in decision making?
        i. Answer: One of the more popular managerial accounting tools is cost-volume-profit analysis, which is also known as break-even. It is important for both manufacturers and service businesses to know how many products or services they must sell to cover their costs. Once that amount is determined, they know they will be attaining profit. Without knowing the break-even point, businesses are not able to ascertain when they will be profitable. Another popular tool is budgeting. In addition to planning for revenues, control of expenses is a very important part of managing a business. Budgets provide a roadmap of likely scenarios that can be used to communicate a company's goals throughout an organization. They can also be used to determine why the goals were not met. A budget provides a "blueprint" of goals for a company to attain, and it is more likely to be successful if it is carefully planned by multiple levels of management and employee input.
2. Discussion: Difference Between Direct and Indirect Costs (Manufacturing Operations, 1-2, PPT Slide 14) Duration 10 minutes.
    a. What is the difference between direct and indirect costs, and why are they kept separate?
        i. Answer: Direct costs can be traced to a specific object or task. For example, when manufacturing products, a part that is identifiable, such as a tire on an automobile, is easily traced to each car that is produced. These costs can be tracked with a specific quantity known for each product. Essentially, direct costs are easier to "see" and know the specific costs per item

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produced. Indirect costs are much more challenging to identify per product. Items such as factory rent, indirect labor from factory supervisors, or depreciation on machinery cannot easily be traced to each individual product made. For example, heating or cooling a production facility will depend on outdoor temperature changes, thus energy costs cannot be easily traced to individual products. Likewise, the production supervisors' salaries will remain the same regardless of how many products were actually made within a specific time period. Of course, indirect costs must be tracked as well, to determine the overall cost of goods manufactured.

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Additional Resources

The following are activities and assignments developed by Cengage but not included in the text, PPTs, or courseware – they are for you to use if you wish.

1. **Writing Exercise:** *Violating GAAP* (Analytic, Critical Thinking, 1-1, PPT Slides 4–8) Duration 15 minutes.
    a. Instruct students to write an answer to the following question: Why is it permissible to violate generally accepted accounting principles (GAAP) when preparing reports used strictly by company management?
        i. Answer: Since these reports are for internal use only, they do not provide any influence to investors about decisions to invest in the company. These reports are for management to aid in the decision-making process. It should be clear to all users that these reports may not follow GAAP.
2. **Internet Activity:** *Becoming a Certified Management Accountant* (Analytic, Critical Thinking, 1-1, PPT Slides 3–12) Duration 15 minutes.
    a. Go online to the Institute of Certified Management Accountants' website: imanet.org. Click on Certifications and then the CMA Overview. In groups of 3–4 students, look at the data listed on the webpage, including exam content, exam pass rates, qualifications to take the exam, and any other valuable information that you can share with the class. Would you consider pursuing this certification? If so, state your reasons.
        i. Answer: Students will find various statistics and other information on the webpage, including pass rates, specific topic areas tested on the exam, the number of CMAs worldwide, and perhaps some videos of success stories for CMA certification holders. Encourage students to consider this specialty area in accounting, especially if they prefer a corporate environment or have entrepreneurial aspirations.

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