CHAPTER 19

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Managerial Accounting

Chapter Preview

This chapter focuses on issues illustrated in the following Feature Story about **Current Designs** and its parent company **Wenonah Canoe**. To succeed, the company needs to determine and control the costs of material, labor, and overhead, and understand the relationship between costs and profits. Managers often make decisions that determine their company's fate—and their own. Managers are evaluated on the results of their decisions. Managerial accounting provides tools to assist management in making decisions and to evaluate the effectiveness of those decisions.

Feature Story

Just Add Water … and Paddle

Mike Cichanowski grew up on the Mississippi River in Winona, Minnesota. At a young age, he learned to paddle a canoe so he could explore the river. Before long, Mike began crafting his own canoes from bent wood and fiberglass in his dad's garage. Then, when his canoe-making shop outgrew the garage, he moved it into an old warehouse. When that was going to be torn down, Mike came to a critical juncture in his life. He took out a bank loan and built his own small shop, giving birth to the company **Wenonah Canoe**.

Wenonah Canoe soon became known as a pioneer in developing techniques to get the most out of new materials such as plastics, composites, and carbon fibers—maximizing strength while minimizing weight.

In the 1990s, as kayaking became popular, Mike made another critical decision when he acquired **Current Designs**, a premier Canadian kayak manufacturer. This venture

allowed Wenonah to branch out with new product lines while providing Current Designs with much-needed capacity expansion and manufacturing expertise. Mike moved Current Designs' headquarters to Minnesota and made a big (and potentially risky) investment in a new production facility. Today, the company's 90 employees produce about 12,000 canoes and kayaks per year. These are sold across the country and around the world.

Mike will tell you that business success is "a three-legged stool." The first leg is the knowledge and commitment to make a great product. Wenonah's canoes and Current Designs' kayaks are widely regarded as among the very best. The second leg is the ability to sell your product. Mike's company started off making great canoes, but it took a little longer to figure out how to sell them. The third leg is not something that most of you would immediately associate with entrepreneurial success. It is what goes on behind the scenes—accounting. Good accounting information is absolutely critical to the countless decisions, big and small, that ensure the survival and growth of the company.

Bottom line: No matter how good your product is, and no matter how many units you sell, if you don't have a firm grip on your numbers, you are up a creek without a paddle.

Source: www.wenonah.com.

Watch the *What Is Managerial Accounting*? video in WileyPLUS for an introduction to managerial accounting and the topics presented in the remaining chapters.

Chapter Outline

LEARNING OBJECTIVES

LO 1 Identify the features of managerial accounting and the functions of management.	• Comparing managerial and financial accounting • Management functions • Organizational structure	**DO IT! 1** Managerial Accounting Overview
LO 2 Describe the classes of manufacturing costs and the differences between product and period costs.	• Manufacturing costs • Product vs. period costs • Illustration of cost concepts	**DO IT! 2** Managerial Cost Concepts
LO 3 Demonstrate how to compute cost of goods manufactured and prepare financial statements for a manufacturer.	• Income statement • Cost of goods manufactured • Cost of goods manufactured schedule • Balance sheet	**DO IT! 3** Cost of Goods Manufactured
LO 4 Discuss trends in managerial accounting.	• Service industries • Value chain • Balanced scorecard • Business ethics • Corporate social responsibility	**DO IT! 4** Trends in Managerial Accounting

Go to the Review and Practice section at the end of the chapter for a review of key concepts and practice applications with solutions.
Visit WileyPLUS with ORION for additional tutorials and practice opportunities.

Managerial Accounting Basics

LEARNING OBJECTIVE 1

Identify the features of managerial accounting and the functions of management.

Managerial accounting provides economic and financial information for managers and other internal users. The skills that you learn in this course will be vital to your future success in business. You don't believe us? Let's look at some examples of some of the crucial activities of employees at **Current Designs** and where those activities are addressed in this textbook.

In order to know whether it is making a profit, Current Designs needs accurate information about the cost of each kayak (Chapters 20 and 21). To be profitable, Current Designs adjusts the number of kayaks it produces in response to changes in economic conditions and consumer tastes. It needs to understand how changes in the number of kayaks it produces impact its production costs and profitability (Chapter 22). Further, Current Designs' managers often consider alternative courses of action. For example, should the company accept a special order from a customer, produce a particular kayak component internally or outsource it, or continue or discontinue a particular product line (Chapter 23)?

In order to plan for the future, Current Designs prepares budgets (Chapter 24), and it then compares its budgeted numbers with its actual results to evaluate performance and identify areas that need to change (Chapters 25 and 26). Finally, it sometimes needs to make substantial investment decisions, such as the building of a new plant or the purchase of new equipment (Chapter 27).

Someday, you are going to face decisions just like these. You may end up in sales, marketing, management, production, or finance. You may work for a company that provides medical care, produces software, or serves up mouth-watering meals. No matter what your position is and no matter what your product, the skills you acquire in this class will increase your chances of business success. Put another way, in business you can either guess or you can make an informed decision. As a CEO of **Microsoft** once noted: "If you're supposed to be making money in business and supposed to be satisfying customers and building market share, there are numbers that characterize those things. And if somebody can't speak to me quantitatively about it, then I'm nervous." This course gives you the skills you need to quantify information so you can make informed business decisions.

Comparing Managerial and Financial Accounting

There are both similarities and differences between managerial and financial accounting. First, each field of accounting deals with the economic events of a business. For example, *determining* the unit cost of manufacturing a product is part of managerial accounting. *Reporting* the total cost of goods manufactured and sold is part of financial accounting. In addition, both managerial and financial accounting require that a company's economic events be quantified and communicated to interested parties. **Illustration 19.1** summarizes the principal differences between financial accounting and managerial accounting.

Management Functions

Managers' activities and responsibilities can be classified into three broad functions:

1. Planning.
2. Directing.
3. Controlling.

ILLUSTRATION 19.1 **Differences between financial and managerial accounting**

Feature	Financial Accounting	Managerial Accounting
Primary Users of Reports	External users: stockholders, creditors, and regulators.	Internal users: officers and managers.
Types and Frequency of Reports	Financial statements. Quarterly and annually.	Internal reports. As frequently as needed.
Purpose of Reports	General-purpose.	Special-purpose for specific decisions.
Content of Reports	Pertains to business as a whole. Highly aggregated (condensed). Limited to double-entry accounting and cost data. Generally accepted accounting principles.	Pertains to subunits of the business. Very detailed. Extends beyond double-entry accounting to any relevant data. Evaluated based on relevance to decisions.
Verification Process	Audited by CPA.	No independent audits.

In performing these functions, managers make decisions that have a significant impact on the organization.

Planning requires managers to look ahead and to establish objectives. These objectives are often diverse: maximizing short-term profits and market share, maintaining a commitment to environmental protection, and contributing to social programs. For example, **Hewlett-Packard**, in an attempt to gain a stronger foothold in the computer industry, greatly reduced its prices to compete with **Dell**. A key objective of management is to **add value** to the business under its control. Value is usually measured by the price of the company's stock and by the potential selling price of the company.

Directing involves coordinating a company's diverse activities and human resources to produce a smooth-running operation. This function relates to implementing planned objectives and providing necessary incentives to motivate employees. For example, manufacturers such as **Campbell Soup Company**, **General Motors**, and **Dell** need to coordinate purchasing, manufacturing, warehousing, and selling. Service corporations such as **American Airlines**, **Federal Express**, and **AT&T** coordinate scheduling, sales, service, and acquisitions of equipment and supplies. Directing also involves selecting executives, appointing managers and supervisors, and hiring and training employees.

The third management function, **controlling**, is the process of keeping the company's activities on track. In controlling operations, managers determine whether planned goals are met. When there are deviations from targeted objectives, managers decide what changes are needed to get back on track. Scandals at companies like **Enron**, **Lucent**, and **Xerox** attest to the fact that companies need adequate controls to ensure that the company develops and distributes accurate information.

How do managers achieve control? A smart manager in a very small operation can make personal observations, ask good questions, and know how to evaluate the answers. But using this approach in a larger organization would result in chaos. Imagine the president of **Current Designs** attempting to determine whether the company is meeting its planned objectives without some record of what has happened and what is expected to occur. Thus, large businesses typically use a formal system of evaluation. These systems include such features as budgets, responsibility centers, and performance evaluation reports—all of which are features of managerial accounting.

Decision-making is not a separate management function. Rather, it is the outcome of the exercise of good judgment in planning, directing, and controlling.

Organizational Structure

Most companies prepare **organization charts** to show the interrelationships of activities and the delegation of authority and responsibility within the company. **Illustration 19.2** shows a typical organization chart.

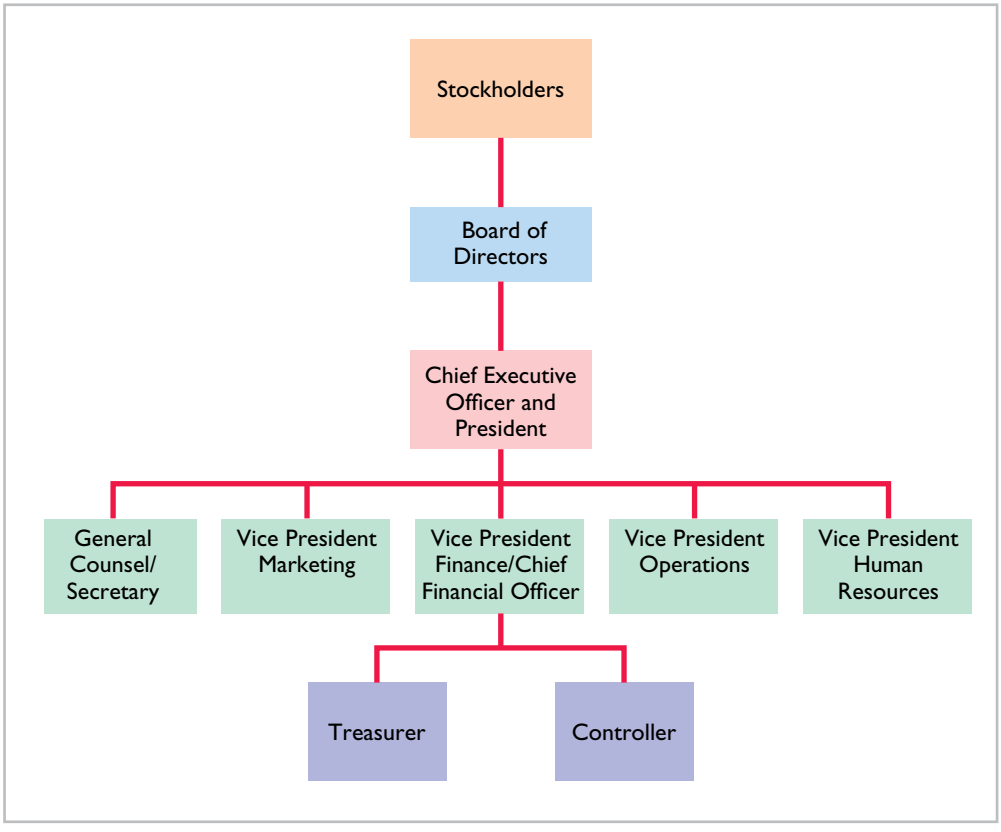


ILLUSTRATION 19.2
A typical corporate organization chart

Stockholders own the corporation, but they manage it indirectly through a **board of directors** they elect. The board formulates the operating policies for the company or organization. The board also selects officers, such as a president and one or more vice presidents, to execute policy and to perform daily management functions.

The **chief executive officer (CEO)** has overall responsibility for managing the business. As the organization chart shows, the CEO delegates responsibilities to other officers.

Responsibilities within the company are frequently classified as either line or staff positions. Employees with **line positions** are directly involved in the company's primary revenue-generating operating activities. Examples of line positions include the vice president of operations, vice president of marketing, plant managers, supervisors, and production personnel. Employees with **staff positions** are involved in activities that support the efforts of the line employees. In a company like **General Electric** or **Facebook**, employees in finance, legal, and human resources have staff positions. While activities of staff employees are vital to the company, these employees are nonetheless there to serve the line employees who engage in the company's primary operations.

The **chief financial officer (CFO)** is responsible for all of the accounting and finance issues the company faces. The CFO is supported by the **controller** and the **treasurer**. The controller's responsibilities include (1) maintaining the accounting records, (2) ensuring an adequate system of internal control, and (3) preparing financial statements, tax returns, and internal reports. The treasurer has custody of the corporation's funds and is responsible for maintaining the company's cash position.

Also serving the CFO is the internal audit staff. The staff's responsibilities include reviewing the reliability and integrity of financial information provided by the controller and treasurer. Staff members also ensure that internal control systems are functioning properly to

safeguard corporate assets. In addition, they investigate compliance with policies and regulations. In many companies, these staff members also determine whether resources are used in the most economical and efficient fashion.

The vice president of operations oversees employees with line positions. For example, the company might have multiple plant managers, each of whom reports to the vice president of operations. Each plant also has department managers, such as fabricating, painting, and shipping, each of whom reports to the plant manager.

Management Insight DPR Construction

Sam Edwards/Caiaimage/Getty Images

Does a Company Need a CEO?

Can a company function without a person at the top? Nearly all companies have a CEO although some, such as **Oracle**, **Chipotle**, and **Whole Foods**, have operated with two people in the CEO position. **Samsung** even had three CEOs at the same time. On the other hand, **Abercrombie and Fitch** operated for more than two years without a CEO because its CEO unexpectedly quit and a suitable replacement was hard to find. In fact, some companies replace the CEO position with a management committee. These companies feel this structure improves decision-making and increases collaboration. For example, the 4,000 employees of **DPR Construction** are overseen by an eight-person committee. Committee members are rotated off gradually but then continue to advise current members. The company notes that this approach provides more continuity over time than the sometimes sudden and harsh changes that occur when CEOs are replaced.

Source: Rachel Feintzeig, "Companies Manage with No CEO," *Wall Street Journal* (December 13, 2016).

What are some of the advantages cited by companies that choose a structure that lacks a CEO? (Go to WileyPLUS for this answer and additional questions).

DO IT! 1 | Managerial Accounting Overview

Indicate whether the following statements are true or false. If false, explain why.

1. Managerial accountants have a single role within an organization: collecting and reporting costs to management.
2. Financial accounting reports are general-purpose and intended for external users.
3. Managerial accounting reports are special-purpose and issued as frequently as needed.
4. Managers' activities and responsibilities can be classified into three broad functions: cost accounting, budgeting, and internal control.
5. Managerial accounting reports must now comply with generally accepted accounting principles (GAAP).

Solution

1. False. Managerial accountants do determine product costs, but they are also responsible for evaluating how well the company employs its resources. As a result, when the company makes critical strategic decisions, managerial accountants serve as team members alongside personnel from production, marketing, and engineering.
2. True.
3. True.
4. False. Managers' activities are classified into three broad functions: planning, directing, and controlling. Planning requires managers to look ahead to establish objectives. Directing involves coordinating a company's diverse activities and human resources to produce a smooth-running operation. Controlling keeps the company's activities on track.
5. False. Managerial accounting reports are for internal use and thus do not have to comply with GAAP.

Related exercise material: **BE19.1, BE19.2, DO IT! 19.1, and E19.1.**

ACTION PLAN

- Understand that managerial accounting is a field of accounting that provides economic and financial information for managers and other internal users.
- Understand that financial accounting provides information for external users.
- Analyze which users require which different types of information.

Managerial Cost Concepts

LEARNING OBJECTIVE 2

Describe the classes of manufacturing costs and the differences between product and period costs.

In order for managers at **Current Designs** to plan, direct, and control operations effectively, they need good information. One very important type of information relates to costs. Managers should ask questions such as the following.

1. What costs are involved in making a product or performing a service?
2. If we decrease production volume, will costs change?
3. What impact will automation have on total costs?
4. How can we best control costs?

To answer these questions, managers obtain and analyze reliable and relevant cost information. The first step is to understand the various cost categories that companies use.

Manufacturing Costs

Manufacturing consists of activities and processes that convert raw materials into finished goods. Contrast this type of operation with merchandising, which sells products in the form in which they are purchased. Manufacturing costs incurred to produce a product are classified as direct materials, direct labor, and manufacturing overhead.

Direct Materials

To obtain the materials that will be converted into the finished product, the manufacturer purchases raw materials. **Raw materials** are the basic materials and parts used in the manufacturing process.

Raw materials that can be physically and directly associated with the finished product during the manufacturing process are **direct materials**. Examples include flour in the baking of bread, syrup in the bottling of soft drinks, and steel in the making of automobiles. A primary direct material of many Current Designs' kayaks is polyethylene powder. Some of its high-performance kayaks use Kevlar®.

Some raw materials cannot be easily associated with the finished product. These are called indirect materials. **Indirect materials** have one of two characteristics. (1) They do not physically become part of the finished product (such as polishing compounds used by Current Designs for the finishing touches on kayaks). Or, (2) they are impractical to trace to the finished product because their physical association with the finished product is too small in terms of cost (such as cotter pins and lock washers used in kayak rudder assembly). Companies account for indirect materials as part of **manufacturing overhead**.

Direct Labor

The work of factory employees that can be physically and directly associated with converting raw materials into finished goods is **direct labor**. Bottlers at **Coca-Cola**, bakers at **Sara Lee**, and equipment operators at **Current Designs** are employees whose activities are usually classified as direct labor. **Indirect labor** refers to the work of employees that has no physical association with the finished product or for which it is impractical to trace costs to the goods produced. Examples include wages of factory maintenance people, factory time-keepers, and factory supervisors. Like indirect materials, companies classify indirect labor as **manufacturing overhead**.

Manufacturing Overhead

Manufacturing overhead consists of costs that are indirectly associated with the manufacture of the finished product. Overhead costs also include manufacturing costs that cannot be classified as direct materials or direct labor. Manufacturing overhead includes indirect materials, indirect labor, depreciation on factory buildings and machines, and insurance, taxes, and maintenance on factory facilities.

One study of manufactured goods found the following magnitudes of the three different product costs as a percentage of the total product cost: direct materials 54%, direct labor 13%, and manufacturing overhead 33%. Note that the direct labor component is the smallest. This component of product cost is dropping substantially because of automation. Companies are working hard to increase productivity by decreasing labor. In some companies, direct labor has become as little as 5% of the total cost.

Tracing direct materials and direct labor costs to specific products is fairly straightforward. Good recordkeeping can tell a company how much plastic it used in making each type of gear, or how many hours of factory labor it took to assemble a part. But allocating overhead costs to specific products presents problems. How much of the purchasing agent's salary is attributable to the hundreds of different products made in the same plant? What about the grease that keeps the machines running smoothly, or the computers that make sure paychecks are generated on time? Boiled down to its simplest form, the question becomes: Which products cause the incurrence of which costs? In subsequent chapters, we show various methods of allocating overhead to products.

Product Versus Period Costs

ALTERNATIVE TERMINOLOGY

Product costs are also called *inventoriable* costs.

Each of the manufacturing cost components—direct materials, direct labor, and manufacturing overhead—are product costs. As the term suggests, **product costs** are costs that are a necessary and integral part of producing the finished product (see **Alternative Terminology**). Companies record product costs, when incurred, as an asset called inventory. These costs do not become expenses until the company sells the finished goods inventory. At that point, the company records the expense as cost of goods sold.

Period costs are costs that are matched with the revenue of a specific time period rather than included as part of the cost of a salable product. These are nonmanufacturing costs. Period costs include selling and administrative expenses. In order to determine net income, companies deduct these costs from revenues in the period in which they are incurred.

Illustration 19.3 summarizes these relationships and cost terms. Our main concern in this chapter is with product costs.

ILLUSTRATION 19.3
Product versus period costs

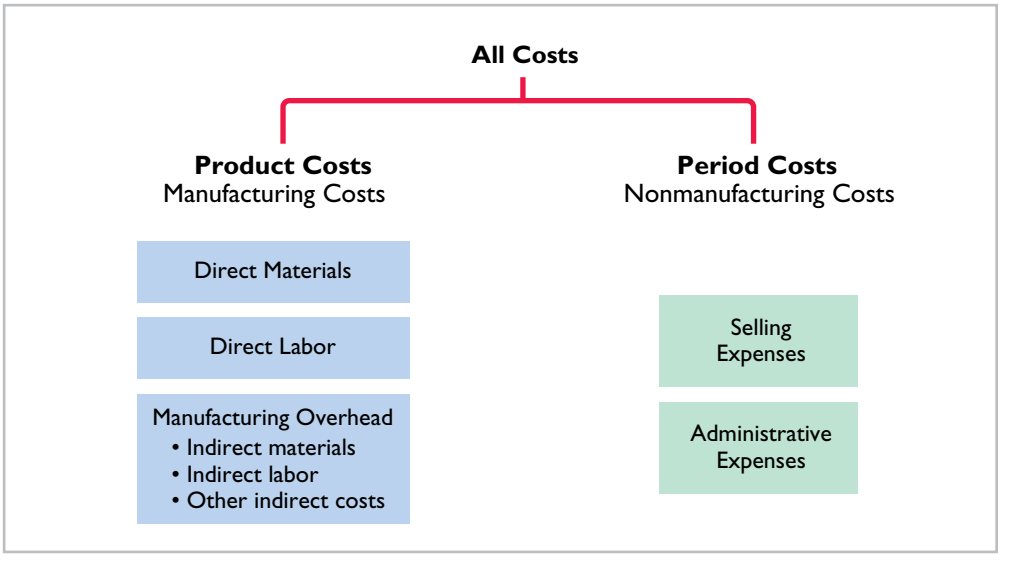


Illustration of Cost Concepts

To improve your understanding of cost concepts, we illustrate them here through an extended example. Suppose you started your own snowboard factory, Terrain Park Boards. Think that's impossible? **Burton Snowboards** was started by Jake Burton Carpenter, when he was only 23 years old. Jake initially experimented with 100 different prototype designs before settling on a final design. Then Jake, along with two relatives and a friend, started making 50 boards per day in Londonderry, Vermont. Unfortunately, while they made a lot of boards in their first year, they were only able to sell 300 of them. To get by during those early years, Jake taught tennis and tended bar to pay the bills.

Here are some of the costs that your snowboard factory, Terrian Park Boards, would incur.

1. The materials cost of each snowboard (wood cores, fiberglass, resins, metal screw holes, metal edges, and ink) is $30.
2. The labor costs (for example, to trim and shape each board using jig saws and band saws) are $40.
3. Depreciation on the factory building and equipment (for example, presses, grinding machines, and lacquer machines) used to make the snowboards is $25,000 per year.
4. Property taxes on the factory building (where the snowboards are made) are $6,000 per year.
5. Advertising costs (mostly online and catalogue) are $60,000 per year.
6. Sales commissions related to snowboard sales are $20 per snowboard.
7. Salaries for factory maintenance employees are $45,000 per year.
8. The salary of the plant manager is $70,000.
9. The cost of shipping is $8 per snowboard.

Illustration 19.4 shows how Terrain Park Boards would assign these manufacturing and selling costs to the various categories.

ILLUSTRATION 19.4
Assignment of costs to cost categories

Terrian Park Boards

Cost Item	Product Costs: Direct Materials	Product Costs: Direct Labor	Product Costs: Manufacturing Overhead	Period Costs
1. Material cost ($30 per board)	X			
2. Labor costs ($40 per board)		X		
3. Depreciation on factory equipment ($25,000 per year)			X	
4. Property taxes on factory building ($6,000 per year)			X	
5. Advertising costs ($60,000 per year)				X
6. Sales commissions ($20 per board)				X
7. Maintenance salaries (factory facilities, $45,000 per year)			X	
8. Salary of plant manager ($70,000 per year)			X	
9. Cost of shipping boards ($8 per board)				X

Total manufacturing costs are the sum of the **product costs**—direct materials, direct labor, and manufacturing overhead—incurred in the current period. If Terrain Park Boards produces 10,000 snowboards the first year, the total manufacturing costs would be $846,000, as shown in **Illustration 19.5**.

ILLUSTRATION 19.5
Computation of total manufacturing costs

Cost Number and Item	Manufacturing Cost
1. Material cost ($30 × 10,000)	$300,000
2. Labor cost ($40 × 10,000)	400,000
3. Depreciation on factory equipment	25,000
4. Property taxes on factory building	6,000
7. Maintenance salaries (factory facilities)	45,000
8. Salary of plant manager	70,000
Total manufacturing costs	**$846,000**

Once it knows the total manufacturing costs, Terrain Park Boards can compute the manufacturing cost per unit. Assuming 10,000 units, the cost to produce one snowboard is $84.60 ($846,000 ÷ 10,000 units).

The cost concepts discussed in this chapter are used extensively in subsequent chapters. So study Illustration 19.4 carefully. If you do not understand any of these classifications, go back and reread the appropriate section.

DO IT! 2 | Managerial Cost Concepts

A bicycle company has these costs: tires, salaries of employees who put tires on the wheels, factory building depreciation, advertising expenditures, factory machine lubricants, spokes, salary of factory manager, salary of accountant, handlebars, and salaries of factory maintenance employees. Classify each cost as direct materials, direct labor, overhead, or a period cost.

ACTION PLAN

- **Direct materials: any raw materials physically and directly associated with the finished product.**
- **Direct labor: the work of factory employees directly associated with the finished product.**
- **Manufacturing overhead: any costs indirectly associated with the finished product.**
- **Costs that are not product costs are period costs.**

Solution

Direct materials: Tires, spokes, and handlebars. **Direct labor:** Salaries of employees who put tires on the wheels. **Manufacturing overhead:** Factory building depreciation, factory machine lubricants, salary of factory manager, and salaries of factory maintenance employees. **Period costs:** Advertising expenditures and salary of accountant.

Related exercise material: **BE19.3, BE19.4, BE19.5, BE19.6, DO IT! 19.2, E19.2, E19.3, E19.4, E19.5, E19.6, and E19.7.**

Manufacturing Costs in Financial Statements

LEARNING OBJECTIVE 3

Demonstrate how to compute cost of goods manufactured and prepare financial statements for a manufacturer.

The financial statements of a manufacturer are very similar to those of a merchandiser. For example, you will find many of the same sections and same accounts in the financial statements of **Procter & Gamble** that you find in the financial statements of **Dick's Sporting Goods**. The principal differences between their financial statements occur in two places: the cost of goods sold section in the income statement and the current assets section in the balance sheet.

Income Statement

Under a periodic inventory system, the income statements of a merchandiser and a manufacturer differ in the cost of goods sold section. Merchandisers compute cost of goods sold by adding the beginning inventory to the **cost of goods purchased** and subtracting the ending inventory. Manufacturers compute cost of goods sold by adding the beginning finished goods inventory to the **cost of goods manufactured** and subtracting the ending finished goods inventory. **Illustration 19.6**, which assumes a periodic inventory system, shows these different methods.

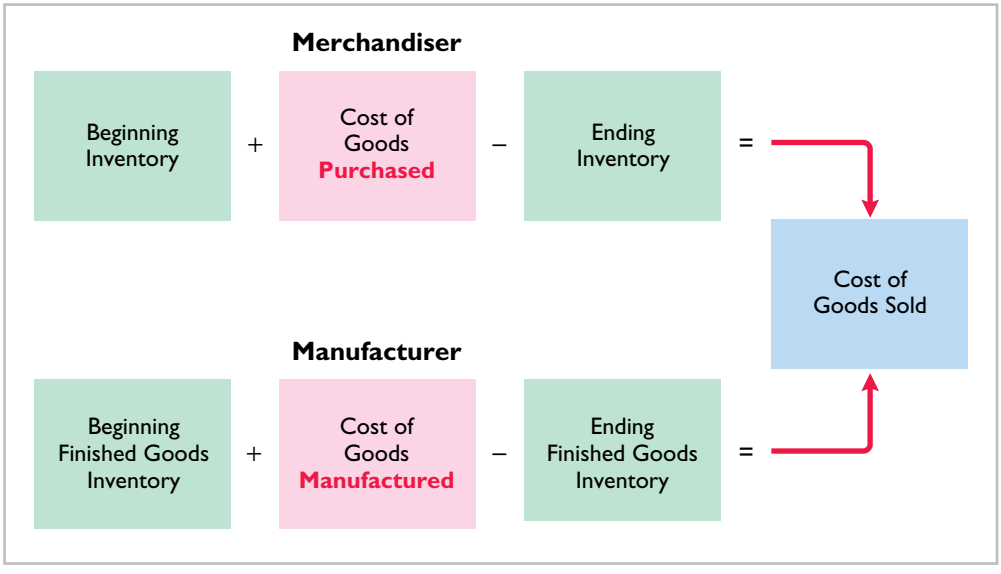


ILLUSTRATION 19.6 **Cost of goods sold components**

A number of accounts are involved in determining the cost of goods manufactured. To eliminate excessive detail, income statements typically show only the total cost of goods manufactured. A separate statement, called a Cost of Goods Manufactured Schedule, presents the details (see Illustration 19.9).

Illustration 19.7 shows the different presentations of the cost of goods sold sections for merchandising and manufacturing companies. The other sections of an income statement are similar for merchandisers and manufacturers.

ILLUSTRATION 19.7 **Cost of goods sold sections of merchandising and manufacturing income statements**

Merchandising Company Income Statement (partial) For the Year Ended December 31, 2020		Manufacturing Company Income Statement (partial) For the Year Ended December 31, 2020	
Cost of goods sold		Cost of goods sold	
Inventory, Jan. 1	$ 70,000	Finished goods inventory, Jan. 1	$ 90,000
Cost of goods purchased	650,000	Cost of goods manufactured (see Illustration 19.9)	370,000
Cost of goods available for sale	720,000	Cost of goods available for sale	460,000
Less: Inventory, Dec. 31	400,000	Less: Finished goods inventory, Dec. 31	80,000
Cost of goods sold	$ 320,000	Cost of goods sold	$380,000

Cost of Goods Manufactured

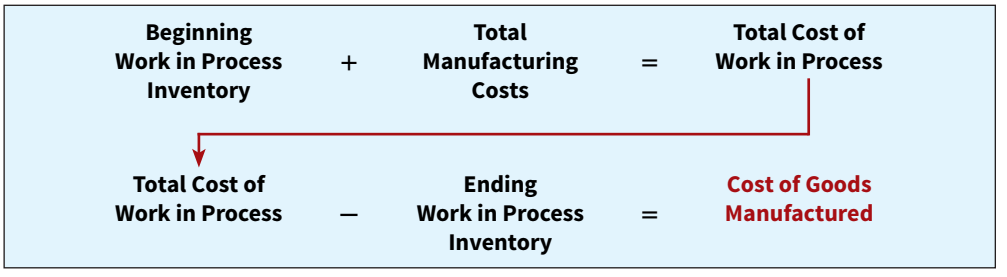
An example may help show how companies determine the cost of goods manufactured. Assume that on January 1, **Current Designs** has a number of kayaks in various stages of production. In total, these partially completed manufactured units are called **beginning work in process inventory**. These are kayaks that were worked on during the prior year but were not completed. As a result, these kayaks will be completed during the current year. The cost of beginning work in process inventory is based on the **manufacturing costs incurred in the prior period**.

Current Designs first incurs manufacturing costs in the current year to complete the kayaks that were in process on January 1. It then incurs manufacturing costs for production of new orders. The sum of the direct materials costs, direct labor costs, and manufacturing overhead incurred in the current year is the **total manufacturing costs** for the current period.

We now have two cost amounts: (1) the cost of the beginning work in process and (2) the total manufacturing costs for the current period. The sum of these costs is the **total cost of work in process** for the year.

At the end of the year, Current Designs may have some kayaks that are only partially completed. The costs of these units become the cost of the **ending work in process inventory**. To find the **cost of goods manufactured**, we subtract this cost from the total cost of work in process. **Illustration 19.8** shows the formula for determining the cost of goods manufactured.

ILLUSTRATION 19.8
Cost of goods manufactured formula



Cost of Goods Manufactured Schedule

The **cost of goods manufactured schedule** reports cost elements used in calculating cost of goods manufactured. **Illustration 19.9** shows the schedule for Current Designs (using assumed data). The schedule presents detailed data for direct materials and for manufacturing overhead.

You should be able to distinguish between "Total manufacturing costs" and "Cost of goods manufactured." As Illustration 19.9 shows, total manufacturing costs is the sum of all manufacturing costs (direct materials, direct labor, and manufacturing overhead) **incurred during the period**. Cost of goods manufactured is the cost of those goods that were **completed during the period**. If we add beginning work in process inventory to the total manufacturing costs incurred during the period and then subtract the ending work in process inventory (the formula given in Illustration 19.8), we arrive at the cost of goods manufactured during the period.

ILLUSTRATION 19.9
Cost of goods manufactured schedule

Current Designs
Cost of Goods Manufactured Schedule
For the Year Ended December 31, 2020

Work in process, January 1			**$ 18,400**
Direct materials			
Raw materials inventory, January 1	$ 16,700		
Raw materials purchases	152,500		
Total raw materials available for use	169,200		
Less: Raw materials inventory, December 31	22,800		
Direct materials used		$146,400	
Direct labor		175,600	
Manufacturing overhead			
Indirect labor	14,300		
Factory repairs	12,600		
Factory utilities	10,100		
Factory depreciation	9,440		
Factory insurance	8,360		
Total manufacturing overhead		54,800	
Total manufacturing costs			**376,800**
Total cost of work in process			395,200
Less: Work in process, December 31			**25,200**
Cost of goods manufactured			**$370,000**

Balance Sheet

The balance sheet for a merchandising company shows just one category of inventory. In contrast, the balance sheet for a manufacturer may have three inventory accounts, as shown in **Illustration 19.10** for Current Designs' kayak inventory.

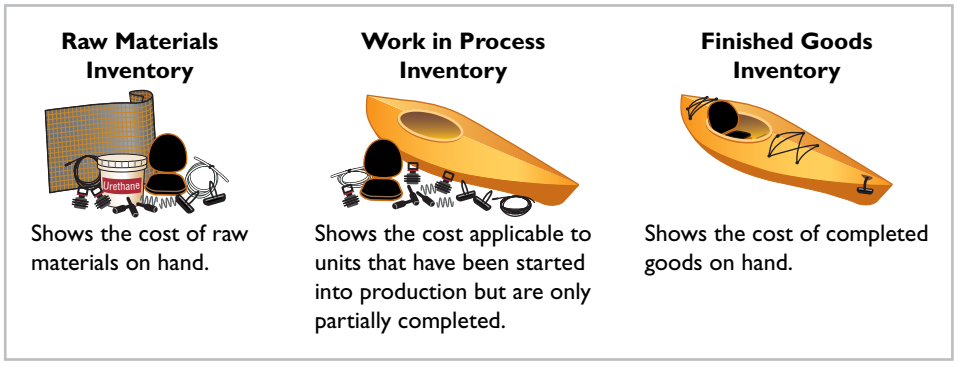


ILLUSTRATION 19.10 **Inventory accounts for a manufacturer**

Finished Goods Inventory is to a manufacturer what Inventory is to a merchandiser. Each of these classifications represents the goods that the company has available for sale. The current assets sections presented in **Illustration 19.11** contrast the presentations of inventories for merchandising and manufacturing companies. The remainder of the balance sheet is similar for the two types of companies.

ILLUSTRATION 19.11 **Current assets sections of merchandising and manufacturing balance sheets**

Merchandising Company Balance Sheet December 31, 2020		Manufacturing Company Balance Sheet December 31, 2020		
Current assets		Current assets		
Cash	$100,000	Cash		$180,000
Accounts receivable (net)	210,000	Accounts receivable (net)		210,000
Inventory	**400,000**	**Inventory**		
Prepaid expenses	22,000	**Finished goods**	**$80,000**	
Total current assets	$732,000	**Work in process**	**25,200**	
		Raw materials	**22,800**	**128,000**
		Prepaid expenses		18,000
		Total current assets		$536,000

Each step in the accounting cycle for a merchandiser applies to a manufacturer. For example, prior to preparing financial statements, manufacturers make adjusting entries. The adjusting entries are essentially the same as those of a merchandiser. The closing entries are also similar for manufacturers and merchandisers.

DO IT! 3 | Cost of Goods Manufactured

The following information is available for Keystone Company.

		March 1	March 31
Raw materials inventory		$12,000	$10,000
Work in process inventory		2,500	4,000
Materials purchased in March	$ 90,000		
Direct labor in March	75,000		
Manufacturing overhead in March	220,000		

Prepare the cost of goods manufactured schedule for the month of March 2020.

ACTION PLAN

- Start with beginning work in process as the first item in the cost of goods manufactured schedule.
- Sum direct materials used, direct labor, and manufacturing overhead to determine total manufacturing costs.

Solution

Keystone Company
Cost of Goods Manufactured Schedule
For the Month Ended March 31, 2020

Work in process, March 1			$ 2,500
Direct materials			
Raw materials, March 1	$ 12,000		
Raw materials purchases	90,000		
Total raw materials available for use	102,000		
Less: Raw materials, March 31	10,000		
Direct materials used		$ 92,000	
Direct labor		75,000	
Manufacturing overhead		220,000	
Total manufacturing costs			387,000
Total cost of work in process			389,500
Less: Work in process, March 31			4,000
Cost of goods manufactured			$385,500

Related exercise material: **BE19.7, BE19.8, BE19.9, BE19.10, DO IT! 19.3, E19.8, E19.9, E19.10, E19.11, E19.12, E19.13, E19.14, E19.15, E19.16, and E19.17.**

ACTION PLAN (*cont.*)

- **Sum beginning work in process and total manufacturing costs to determine total cost of work in process.**
- **Cost of goods manufactured is the total cost of work in process less ending work in process.**

Managerial Accounting Today

LEARNING OBJECTIVE 4

Discuss trends in managerial accounting.

The business environment never stands still. Regulations are always changing, global competition continues to intensify, and technology is a source of constant upheaval. In this rapidly changing world, managerial accounting needs to continue to innovate in order to provide managers with the information they need.

Service Industries

Much of the U.S. economy has shifted toward an emphasis on services. Today, more than 50% of U.S. workers are employed by service companies. Airlines, marketing agencies, cable companies, and governmental agencies are just a few examples of service companies. How do service companies differ from manufacturing companies? One difference is that services are consumed immediately by customers. For example, when a restaurant produces a meal, that meal is not put in inventory but is instead consumed immediately. An airline uses special equipment to provide its product, but again, the output of that equipment is consumed immediately by the customer in the form of a flight. And a marketing agency performs services for its clients that are immediately consumed by the customer in the form of a marketing plan. For a manufacturing company, like **Boeing**, it often has a long lead time before its airplane is used or consumed by the customer.

This chapter's examples featured manufacturing companies because accounting for the manufacturing environment requires the use of the broadest range of accounts. That is, the accounts used by service companies represent a subset of those used by manufacturers because service companies are not producing inventory. Neither the restaurant, the airline, or the marketing agency discussed above produces an inventoriable product. However, just like a manufacturer, each needs to keep track of the costs of its services in order to know whether it is generating a profit (see **Ethics Note**). A successful restaurateur needs to know the cost of each offering on the menu, an airline needs to know the cost of flight service to each destination,

ETHICS NOTE

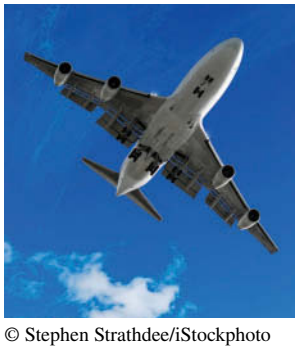
Do telecommunications companies have an obligation to provide service to remote or low-user areas for a fee that may be less than the cost of the service?

and a marketing agency needs to know the cost to develop a marketing plan. Thus, the techniques shown in this chapter, to accumulate manufacturing costs to determine manufacturing inventory, are equally useful for determining the costs of performing services.

For example, let's consider the costs that **Hewlett-Packard (HP)** might incur on a consulting engagement. A significant portion of its costs would be salaries of consulting personnel. It might also incur travel costs, materials, software costs, and depreciation charges on equipment. In the same way that it needs to keep track of the cost of manufacturing its computers and printers, HP needs to know what its costs are on each consulting job. It could prepare a cost of services performed schedule similar to the cost of goods manufactured schedule in Illustration 19.9. The structure would be essentially the same as the cost of goods manufactured schedule, but section headings would be reflective of the costs of the particular service organization.

Many of the examples we present in subsequent chapters will be based on service companies, as well as a number of end-of-chapter materials.

Service Company Insight Allegiant Airlines



© Stephen Strathdee/iStockphoto

Low Fares but Decent Profits

When other airlines were cutting flight service due to recession, **Allegiant Airlines** increased capacity by 21%. Sounds crazy, doesn't it? But it must know something because while the other airlines were losing money, it was generating profits. In fact, it often has the industry's highest profit margins. Consider also that its average one-way fare is only $83. So how does it make money? As a low-budget airline, it focuses on controlling costs.

Allegiant purchases used planes for $3 million each rather than new planes for $40 million. It flies out of small towns, so wages are low and competition is nonexistent. It minimizes hotel costs by having its flight crews finish their day in their home cities. The company also only flies a route if its 150-passenger planes are nearly full (it averages about 90% of capacity). The bottom line is that Allegiant knows its costs to the penny. Knowing what your costs are might not be glamorous, but it sure beats losing money.

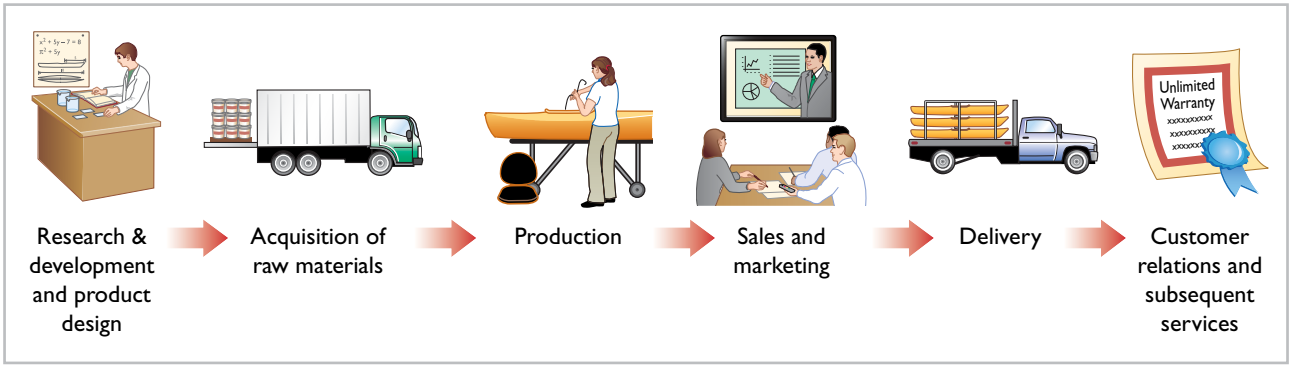
Sources: Susan Carey, "For Allegiant, Getaways Mean Profits," *Wall Street Journal Online* (February 18, 2009); and Scott Mayerowitz, "Tiny Allegiant Air Thrives on Low Costs, High Fees," *http://bigstory.ap.org* (June 28, 2013).

What are some of the line items that would appear in the cost of services performed schedule of an airline? (Go to WileyPLUS for this answer and additional questions.)

Focus on the Value Chain

The **value chain** refers to all business processes associated with providing a product or performing a service. **Illustration 19.12** depicts the value chain for a manufacturer. Many of the most significant business innovations in recent years have resulted either directly, or indirectly, from a focus on the value chain. For example, so-called **lean manufacturing**, originally pioneered by Japanese automobile manufacturer **Toyota** but now widely practiced, reviews all business processes in an effort to increase productivity and eliminate waste, all while continually trying to improve quality.

ILLUSTRATION 19.12 **A manufacturer's value chain**



Just-in-time (JIT) inventory methods, which have significantly lowered inventory levels and costs for many companies, are one innovation that resulted from the focus on the value chain. Under the JIT inventory method, goods are manufactured or purchased just in time for sale. For example, **Dell** can produce and deliver a custom computer within 48 hours of a customer's order. However, JIT also necessitates increased emphasis on product quality. Because JIT companies do not have excess inventory on hand, they cannot afford to stop production because of defects or machine breakdowns. If they stop production, deliveries will be delayed and customers will be unhappy. For example, a design flaw in an **Intel** computer chip was estimated to cost the company $1 billion in repairs and reduced revenue.

As a consequence, many companies now focus on **total quality management (TQM)** to reduce defects in finished products, with the goal of zero defects. **Toyota** was one of the pioneers of TQM processes as early as the 1940s. Some of the largest companies in the world, including **Ford** and **ExxonMobil**, have benefitted from these practices.

Another innovation, the **theory of constraints**, involves identification of "bottlenecks"—constraints within the value chain that limit a company's profitability. Once a major constraint has been identified and eliminated, the company moves on to fix the next most significant constraint. **General Motors** found that by applying the theory of constrains to its distribution system, it could more effectively meet the demands of its dealers and minimize the amount of excess inventory in its distribution system. This also reduced its need for overtime labor.

Technology has played a big role in the focus on the value chain and the implementation of lean manufacturing. For example, **enterprise resource planning (ERP) systems**, such as those provided by **SAP**, provide a comprehensive, centralized, integrated source of information to manage all major business processes—from purchasing, to manufacturing, to sales, to human resources. ERP systems have, in some large companies, replaced as many as 200 individual software packages. In addition, the focus on improving efficiency in the value chain has also resulted in adoption of automated manufacturing processes. Many companies now use computer-integrated manufacturing. These systems often reduce the reliance on manual labor by using robotic equipment. This increases overhead costs as a percentage of total product costs.

As overhead costs have increased because of factory automation, the accuracy of overhead cost allocation to specific products has become more important. Managerial accounting devised an approach, called **activity-based costing (ABC)**, which allocates overhead based on each product's use of particular activities in making the product. In addition to providing more accurate product costing, ABC also can contribute to increased efficiency in the value chain. For example, suppose one of a company's overhead pools is allocated based on the number of setups that each product requires. If a particular product's cost is high because it is allocated a lot of overhead due to a high number of setups, management will be motivated to try to reduce the number of setups and thus reduce its overhead allocation.

Management Insight Inditex SA

Miguel Vidal/REUTERS/Alamy Stock Photo

Supplying Today's (Not Yesterday's) Fashions

In terms of total sales dollars, **Inditex SA** is the planet's largest fashion retailer. What does it do differently than its competitors? How did it double its sales over a recent seven-year period while competitors such as **Gap Inc.** stumbled badly? Inditex distinguishes itself in its value chain's ability to react quickly to constantly changing customer tastes. First, designers and commercial staff sit side by side in a massive, open workspace facility, taking direct input from sales staff around the world regarding new product ideas. Manufacturing facilities are located relatively near to company headquarters, allowing more direct input and oversight into production. Also, all goods (other than online sales) are shipped straight from the production facility to stores, rather than warehouses. As a result of its unique approach to how it designs, manufactures and distributes its goods, Inditex can actually sometimes get a new product from initial idea to the store shelf in two weeks rather than the industry norm of two to eight months. And because Inditex provides customers with designs that competitors don't have yet, it can charge higher prices while also continuing to look for ways to increase efficiency and thus cut costs.

Source: Patricia Kowsmann, "Fast Fashion: How a Zara Coat Went from Design to Fifth Avenue in 25 Days," *Wall Street Journal* (December 6, 2016).

What steps has Inditex taken that make its value chain unique? (Go to WileyPLUS for this answer and additional questions).

Balanced Scorecard

As companies implement various business practice innovations, managers sometimes focus too enthusiastically on the latest innovation, to the detriment of other areas of the business. For example, by focusing on total quality management, companies sometimes lose sight of cost/benefit considerations. Similarly, in focusing on reducing inventory levels through just-in-time inventory methods, companies sometimes lose sales due to inventory shortages. The **balanced scorecard** corrects for this limited perspective: This approach uses both financial and nonfinancial measures to evaluate all aspects of a company's operations in an integrated fashion. The performance measures are linked in a cause-and-effect fashion to ensure that they all tie to the company's overall objectives. For example, to increase return on assets, the company could try to increase sales. To increase sales, the company could try to increase customer satisfaction. To increase customer satisfaction, the company could try to reduce product defects. Finally, to reduce product defects, the company could increase employee training. The balanced scorecard, which is discussed further in Chapter 26, is now used by many companies, including **Hilton Hotels**, **Wal-Mart Stores, Inc.**, and **HP**.

Business Ethics

All employees within an organization are expected to act ethically in their business activities. Given the importance of ethical behavior to corporations and their owners (stockholders), an increasing number of organizations provide codes of business ethics for their employees.

Creating Proper Incentives

Companies like **Amazon.com**, **IBM**, and **Nike** use complex systems to monitor, control, and evaluate the actions of managers. Unfortunately, these systems and controls sometimes unwittingly create incentives for managers to take unethical actions. For example, because budgets are also used as an evaluation tool, some managers try to "game" the budgeting process by underestimating their division's predicted performance so that it will be easier to meet their performance targets. On the other hand, if budgets are set at unattainable levels, managers sometimes take unethical actions to meet the targets in order to receive higher compensation or, in some cases, to keep their jobs.

For example, at one time, airline manufacturer **Boeing** was plagued by a series of scandals including charges of over-billing, corporate espionage, and illegal conflicts of interest. Some long-time employees of Boeing blamed the decline in ethics on a change in the corporate culture that took place after Boeing merged with **McDonnell Douglas**. They suggested that evaluation systems implemented after the merger to evaluate employee performance gave employees the impression that they needed to succeed no matter what actions were required to do so.

In a recent example, the largest bank in the United States, **Wells Fargo**, admitted that it had fired 5,300 employees for opening more than 2 million accounts without customer approval or knowledge. According to the director of the Consumer Financial Protection Bureau, "Wells Fargo employees secretly opened unauthorized accounts to hit sales targets and receive bonuses."

Code of Ethical Standards

In response to corporate scandals, the U.S. Congress enacted the **Sarbanes-Oxley Act (SOX)** to help prevent lapses in internal control. One result of SOX was to clarify top management's responsibility for the company's financial statements. CEOs and CFOs are now required to certify that financial statements give a fair presentation of the company's operating results and its financial condition. In addition, top managers must certify that the company maintains an adequate system of internal controls to safeguard the company's assets and ensure accurate financial reports.

Another result of SOX is that companies now pay more attention to the composition of the board of directors. In particular, the audit committee of the board of directors must be comprised entirely of independent members (that is, non-employees) and must contain at least one financial expert. Finally, the law substantially increases the penalties for misconduct.

To provide guidance for managerial accountants, the Institute of Management Accountants (IMA) has developed a code of ethical standards, entitled *IMA Statement of Ethical Professional Practice.* Management accountants should not commit acts in violation of these standards. Nor should they condone such acts by others within their organizations. Throughout the textbook, we will address various ethical issues managers face.

Corporate Social Responsibility

The balanced scorecard attempts to take a broader, more inclusive view of corporate profitability measures. Many companies, however, have begun to evaluate not just corporate profitability but also **corporate social responsibility**. In addition to profitability, corporate social responsibility considers a company's efforts to employ sustainable business practices with regard to its employees, society, and the environment. This is sometimes referred to as the **triple bottom line** because it evaluates a company's performance with regard to **people, planet, and profit**. Recent reports indicate that over 50% of the 500 largest U.S. companies provide sustainability reports. Make no mistake, these companies are still striving to maximize profits—in a competitive world, they won't survive long if they don't. In fact, you might recognize a few of the names on a recent list (published by Corporate Knights) of the 100 most sustainable companies in the world. Are you surprised that **General Electric**, **adidas**, **BMW**, **Coca-Cola**, or **Apple** made the list? These companies have learned that with a long-term, sustainable approach, they can maximize profits while also acting in the best interest of their employees, their communities, and the environment. In fact, a monetary bonus was provided by 87% of the companies on the list to managers that met sustainability goals. At various points within this textbook, we will discuss situations where real companies use the very skills that you are learning to evaluate decisions from a sustainable perspective, such as in the following Insight box.

People, Planet, and Profit Insight — Phantom Tac

Geanina Bechea/Shutterstock

People Matter

Many clothing factories in developing countries are known for unsafe buildings, poor working conditions, and wage and labor violations. One of the owners of **Phantom Tac**, a clothing manufacturer in Bangladesh, did make efforts to develop sustainable business practices. This owner, David Mayor, provided funding for a training program for female workers. He also developed a website to educate customers about the workers' conditions. But Phantom Tac also had to make a profit. Things got tight when one of its customers canceled orders because Phantom Tac failed a social compliance audit. The company had to quit funding the training program and the website.

Recently, Bangladesh's textile industry has seen some significant improvements in working conditions and safety standards. As Brad Adams, Asia director of **Human Rights Watch**, notes, "The (Dhaka) government has belatedly begun to register unions, which is an important first step, but it now needs to ensure that factory owners stop persecuting their leaders and actually allow them to function."

Sources: Jim Yardley, "Clothing Brands Sidestep Blame for Safety Lapses," *The New York Times Online* (December 30, 2013); and Palash Ghosh, "Despite Low Pay, Poor Work Conditions, Garment Factories Empowering Millions of Bangladeshi Women," *International Business Times* (March 25, 2014).

What are some of the common problems for many clothing factories in developing countries? (Go to WileyPLUS for this answer and additional questions.)

Sustainable business practices present numerous issues for management and managerial accountants. First, companies need to decide what items need to be measured, generally those that are of utmost importance to its stakeholders. For example, a particular company might be most concerned with minimizing water pollution or maximizing employee safety. Then, for each item identified, the company determines measurable attributes that provide relevant information regarding the company's performance with regard to that item, such as the amount of waste released into public waterways or the number of accidents per 1,000 hours worked. Finally, the company needs to consider the materiality of the item, the cost of measuring these attributes, and the reliability of the measurements. If the company uses this information to make decisions, then accuracy is critical. Of particular concern is whether the measurements can be verified by an outside third party.

Unlike financial reporting, which is overseen by the Financial Accounting Standards Board, the reporting of sustainable business practices currently has no agreed-upon

standard-setter. A number of organizations have, however, published guidelines. The guidelines published by the **Global Reporting Initiative** are among the most widely recognized and followed. **Illustration 19.13** provides a list of major categories provided by the Global Reporting Initiative for sustainability reporting and a sample of aspects that companies might consider within each category.

ILLUSTRATION 19.13 **Sample categories in Global Reporting Initiative guidelines**

		Social			
Economic	**Environmental**	**Labor Practices and Decent Work**	**Human Rights**	**Society**	**Product Responsibility**
Economic performance Market presence Indirect economic impacts Procurement practices	Energy Biodiversity Effluents and waste Compliance	Occupational health and safety Training and education Diversity and equal opportunity Labor practices grievance mechanisms	Non-discrimination Child labor Indigenous rights Supplier human rights assessment	Anti-corruption Anti-competitive behavior Supplier assessment for impacts on society Grievance mechanisms for impacts on society	Customer health and safety Product and service labeling Marketing communications Customer privacy

Source: Global Reporting Initiative, *G4 Sustainability Reporting Guidelines,* p. 9. The full report is available at *www.globalreporting.org.*

DO IT! 4 | Trends in Managerial Accounting

Match the descriptions that follow with the corresponding terms.

Descriptions:

1. _____ All activities associated with providing a product or performing a service.
2. _____ A method of allocating overhead based on each product's use of activities in making the product.
3. _____ Systems implemented to reduce defects in finished products with the goal of achieving zero defects.
4. _____ A performance-measurement approach that uses both financial and nonfinancial measures, tied to company objectives, to evaluate a company's operations in an integrated fashion.
5. _____ Inventory system in which goods are manufactured or purchased just as they are needed for use.
6. _____ A company's efforts to employ sustainable business practices with regards to its employees, society, and the environment.
7. _____ A code of ethical standards developed by the Institute of Management Accountants.

Terms:

a. Activity-based costing
b. Balanced scorecard
c. Corporate social responsibility
d. Just-in-time (JIT) inventory
e. Total quality management (TQM)
f. Statement of Ethical Professional Practice
g. Value chain

ACTION PLAN

- **Develop a forward-looking view, in order to advise and provide information to various members of the organization.**
- **Understand current business trends and issues.**

Solution

1. g **2.** a **3.** e **4.** b **5.** d **6.** c **7.** f

Related exercise material: **BE19.11, DO IT! 19.4, and E19.18.**

Review and Practice

Learning Objectives Review

1 Identify the features of managerial accounting and the functions of management.

The *primary users* of managerial accounting reports, issued as frequently as needed, are internal users, who are officers, department heads, managers, and supervisors in the company. The purpose of these reports is to provide special-purpose information for a particular user for a specific decision. The content of managerial accounting reports pertains to subunits of the business. It may be very detailed, and may extend beyond the double-entry accounting system. The reporting standard is relevance to the decision being made. No independent audits are required in managerial accounting.

The functions of management are planning, directing, and controlling. Planning requires management to look ahead and to establish objectives. Directing involves coordinating the diverse activities and human resources of a company to produce a smooth-running operation. Controlling is the process of keeping the activities on track.

2 Describe the classes of manufacturing costs and the differences between product and period costs.

Manufacturing costs are typically classified as either (1) direct materials, (2) direct labor, or (3) manufacturing overhead. Raw materials that can be physically and directly associated with the finished product during the manufacturing process are called direct materials. The work of factory employees that can be physically and directly associated with converting raw materials into finished goods is considered direct labor. Manufacturing overhead consists of costs that are indirectly associated with the manufacture of the finished product.

Product costs are costs that are a necessary and integral part of producing the finished product. Product costs are also called inventoriable costs. These costs do not become expenses until the company sells the finished goods inventory. Period costs are costs that are identified with a specific time period rather than with a salable product. These costs relate to nonmanufacturing costs and therefore are not inventoriable costs.

3 Demonstrate how to compute cost of goods manufactured and prepare financial statements for a manufacturer.

Companies add the cost of the beginning work in process to the total manufacturing costs for the current year to arrive at the total cost of work in process for the year. They then subtract the ending work in process from the total cost of work in process to arrive at the cost of goods manufactured.

The difference between a merchandising and a manufacturing income statement is in the cost of goods sold section. A manufacturing cost of goods sold section shows beginning and ending finished goods inventories and the cost of goods manufactured.

The difference between a merchandising and a manufacturing balance sheet is in the current assets section. The current assets section of a manufacturing company's balance sheet presents three inventory accounts: finished goods inventory, work in process inventory, and raw materials inventory.

4 Discuss trends in managerial accounting.

Managerial accounting has experienced many changes in recent years, including a shift toward service companies as well as an emphasis on ethical behavior. Improved practices include a focus on managing the value chain through techniques such as just-in-time inventory, total quality management, activity-based costing, and theory of constraints. The balanced scorecard is now used by many companies in order to attain a more comprehensive view of the company's operations. Finally, companies are now evaluating their performance with regard to their corporate social responsibility.

Glossary Review

Activity-based costing (ABC) A method of allocating overhead based on each product's use of activities in making the product. (p. 19-16).

Balanced scorecard A performance-measurement approach that uses both financial and nonfinancial measures, tied to company objectives, to evaluate a company's operations in an integrated fashion. (p. 19-17).

Board of directors The group of officials elected by the stockholders of a corporation to formulate operating policies and select officers who will manage the company. (p. 19-5).

Chief executive officer (CEO) Corporate officer who has overall responsibility for managing the business and delegates responsibilities to other corporate officers. (p. 19-5).

Chief financial officer (CFO) Corporate officer who is responsible for all of the accounting and finance issues of the company. (p. 19-5).

Controller Financial officer responsible for a company's accounting records, system of internal control, and preparation of financial statements, tax returns, and internal reports. (p. 19-5).

Corporate social responsibility The efforts of a company to employ sustainable business practices with regard to its employees, society, and the environment. (p. 19-18).

Cost of goods manufactured Total cost of work in process less the cost of the ending work in process inventory. (p. 19-12).

Direct labor The work of factory employees that can be physically and directly associated with converting raw materials into finished goods. (p. 19-7).

Direct materials Raw materials that can be physically and directly associated with manufacturing the finished product. (p. 19-7).

Enterprise resource planning (ERP) system Software that provides a comprehensive, centralized, integrated source of information used to manage all major business processes. (p. 19-16).

Indirect labor Work of factory employees that has no physical association with the finished product or for which it is impractical to trace the costs to the goods produced. (p. 19-7).

Indirect materials Raw materials that do not physically become part of the finished product or for which it is impractical to trace to the finished product because their physical association with the finished product is too small. (p. 19-7).

Just-in-time (JIT) inventory Inventory system in which goods are manufactured or purchased just in time for sale. (p. 19-16).

Line positions Jobs that are directly involved in a company's primary revenue-generating operating activities. (p. 19-5).

Managerial accounting A field of accounting that provides economic and financial information for managers and other internal users. (p. 19-3).

Manufacturing overhead Manufacturing costs that are indirectly associated with the manufacture of the finished product. (p. 19-8).

Period costs Costs that are matched with the revenue of a specific time period and charged to expense as incurred. (p. 19-8).

Product costs Costs that are a necessary and integral part of producing the finished product. (p. 19-8).

Sarbanes-Oxley Act (SOX) Law passed by Congress intended to reduce unethical corporate behavior. (p. 19-17).

Staff positions Jobs that support the efforts of line employees. (p. 19-5).

Theory of constraints A specific approach used to identify and manage constraints in order to achieve the company's goals. (p. 19-16).

Total cost of work in process Cost of the beginning work in process plus total manufacturing costs for the current period. (p. 19-12).

Total manufacturing costs The sum of direct materials, direct labor, and manufacturing overhead incurred in the current period. (p. 19-10).

Total quality management (TQM) Systems implemented to reduce defects in finished products with the goal of achieving zero defects. (p. 19-16).

Treasurer Financial officer responsible for custody of a company's funds and for maintaining its cash position. (p. 19-5).

Triple bottom line The evaluation of a company's social responsibility performance with regard to people, planet, and profit. (p. 19-18).

Value chain All business processes associated with providing a product or performing a service. (p. 19-15).

Work in process inventory Partially completed manufactured units. (p. 19-11).

Practice Multiple-Choice Questions

1. (LO 1) Managerial accounting:

a. is governed by generally accepted accounting principles.

b. places emphasis on special-purpose information.

c. pertains to the entity as a whole and is highly aggregated.

d. is limited to cost data.

2. (LO 1) The management of an organization performs several broad functions. They are:

a. planning, directing, and selling.

b. planning, directing, and controlling.

c. planning, manufacturing, and controlling.

d. directing, manufacturing, and controlling.

3. (LO 2) Direct materials are a:

	Product Cost	Manufacturing Overhead Cost	Period Cost
a.	Yes	Yes	No
b.	Yes	No	No
c.	Yes	Yes	Yes
d.	No	No	No

4. (LO 2) Which of the following costs would a computer manufacturer include in manufacturing overhead?

a. The cost of the disk drives.

b. The wages earned by computer assemblers.

c. The cost of the memory chips.

d. Depreciation on testing equipment.

5. (LO 2) Which of the following is **not** an element of manufacturing overhead?

a. Sales manager's salary.

b. Plant manager's salary.

c. Factory repairman's wages.

d. Product inspector's salary.

6. (LO 2) Indirect labor is a:

a. nonmanufacturing cost.

b. raw material cost.

c. product cost.

d. period cost.

7. (LO 2) Which of the following costs are classified as a period cost?

a. Wages paid to a factory custodian.

b. Wages paid to a production department supervisor.

c. Wages paid to a cost accounting department supervisor.

d. Wages paid to an assembly worker.

8. (LO 3) For the year, Redder Company has cost of goods manufactured of $600,000, beginning finished goods inventory of $200,000, and ending finished goods inventory of $250,000. The cost of goods sold is:

a. $450,000.

b. $500,000.

c. $550,000.

d. $600,000.

9. (LO 3) Cost of goods available for sale is a step in the calculation of cost of goods sold of:

a. a merchandising company but not a manufacturing company.

b. a manufacturing company but not a merchandising company.

c. a merchandising company and a manufacturing company.

d. neither a manufacturing company nor a merchandising company.

10. (LO 3) A cost of goods manufactured schedule shows beginning and ending inventories for:

a. raw materials and work in process only.

b. work in process only.

c. raw materials only.

d. raw materials, work in process, and finished goods.

11. **(LO 3)** The formula to determine the cost of goods manufactured is:

a. Beginning raw materials inventory + Total manufacturing costs − Ending work in process inventory.

b. Beginning work in process inventory + Total manufacturing costs − Ending finished goods inventory.

c. Beginning finished goods inventory + Total manufacturing costs − Ending finished goods inventory.

d. Beginning work in process inventory + Total manufacturing costs − Ending work in process inventory.

12. **(LO 4)** After passage of the Sarbanes-Oxley Act:

a. reports prepared by managerial accountants must by audited by CPAs.

b. CEOs and CFOs must certify that financial statements give a fair presentation of the company's operating results.

c. the audit committee, rather than top management, is responsible for the company's financial statements.

d. reports prepared by managerial accountants must comply with generally accepted accounting principles (GAAP).

13. **(LO 4)** Which of the following managerial accounting techniques attempts to allocate manufacturing overhead in a more meaningful fashion?

a. Just-in-time inventory.

b. Total quality management.

c. Balanced scorecard.

d. Activity-based costing.

14. **(LO 4)** Corporate social responsibility refers to:

a. the practice by management of reviewing all business processes in an effort to increase productivity and eliminate waste.

b. an approach used to allocate overhead based on each product's use of activities.

c. the attempt by management to identify and eliminate constraints within the value chain.

d. efforts by companies to employ sustainable business practices with regard to employees and the environment.

Solutions

1. **b.** Managerial accounting emphasizes special-purpose information. The other choices are incorrect because (a) financial accounting is governed by generally accepted accounting principles, (c) financial accounting pertains to the entity as a whole and is highly aggregated, and (d) cost accounting and cost data are a subset of management accounting.

2. **b.** Planning, directing, and controlling are the broad functions performed by the management of an organization. The other choices are incorrect because (a) selling is performed by the sales group in the organization, not by management; (c) manufacturing is performed by the manufacturing group in the organization, not by management; and (d) manufacturing is performed by the manufacturing group in the organization, not by management.

3. **b.** Direct materials are a product cost only. Therefore, choices (a), (c), and (d) are incorrect as direct materials are not manufacturing overhead or a period cost.

4. **d.** Depreciation on testing equipment would be included in manufacturing overhead because it is indirectly associated with the finished product. The other choices are incorrect because (a) disk drives would be direct materials, (b) computer assembler wages would be direct labor, and (c) memory chips would be direct materials.

5. **a.** The sales manager's salary is not directly or indirectly associated with the manufacture of the finished product. The other choices are incorrect because (b) the plant manager's salary, (c) the factory repairman's wages, and (d) the product inspector's salary are all elements of manufacturing overhead.

6. **c.** Indirect labor is a product cost because it is part of the effort required to produce a product. The other choices are incorrect because (a) indirect labor is a manufacturing cost because it is part of the effort required to produce a product, (b) indirect labor is not a raw material cost because raw material costs only include direct materials and indirect materials, and (d) indirect labor is not a period cost because it is part of the effort required to produce a product.

7. **c.** Wages paid to a cost accounting department supervisor would be included in administrative expenses and classified as a period cost. The other choices are incorrect because (a) factory custodian wages are indirect labor which is manufacturing overhead and a product cost, (b) production department supervisor wages are indirect labor which is manufacturing overhead and a product cost, and (d) assembly worker wages is direct labor and is a product cost.

8. **c.** Cost of goods sold is computed as Beginning finished goods inventory ($200,000) + Cost of goods manufactured ($600,000) − Ending finished goods inventory ($250,000), or $200,000 + $600,000 − $250,000 = $550,000. Therefore, choices (a) $450,000, (b) $500,000, and (d) $600,000 are incorrect.

9. **c.** Both a merchandising company and a manufacturing company use cost of goods available for sale to calculate cost of goods sold. Therefore, choices (a) only a merchandising company, (b) only a manufacturing company, and (d) neither a manufacturing company or a merchandising company are incorrect.

10. **a.** A cost of goods manufactured schedule shows beginning and ending inventories for raw materials and work in process only. Therefore, choices (b) work in process only and (c) raw materials only are incorrect. Choice (d) is incorrect because the schedule does not include finished goods.

11. **d.** The formula to determine the cost of goods manufactured is Beginning work in process inventory + Total manufacturing costs − Ending work in process inventory. The other choices are incorrect because (a) raw materials inventory, (b) ending finished goods inventory, and (c) beginning finished goods inventory and ending finished goods inventory are not part of the computation.

12. **b.** CEOs and CFOs must certify that financial statements give a fair presentation of the company's operating results. The other choices are incorrect because (a) reports prepared by financial (not managerial) accountants must be audited by CPAs; (c) SOX clarifies that top management, not the audit committee, is responsible for the company's financial statements; and (d) reports by financial (not managerial) accountants must comply with GAAP.

13. **d.** Activity-based costing attempts to allocate manufacturing overhead in a more meaningful fashion. Therefore, choices (a) just-in-time inventory, (b) total quality management, and (c) balanced scorecard are incorrect.

14. d. Corporate social responsibility refers to efforts by companies to employ sustainable business practices with regard to employees and the environment. The other choices are incorrect because (a) defines lean manufacturing, (b) refers to activity-based costing, and (c) describes the theory of constraints.

Practice Brief Exercises

1. (LO 1) The following are selected data for Lopez Furniture:

Classify manufacturing costs.

Utilities for manufacturing equipment	$120,000
Wood	850,000
Depreciation on factory building	220,000
Wages for production workers	391,000
Fabric	313,000
Delivery expense	144,000
Property taxes on factory	70,000

Using the selected data above, determine total (a) direct materials, (b) direct labor, (c) manufacturing overhead, (d) product costs, and (e) period costs.

Solution

1. a. Wood ($850,000) + Fabric ($313,000) = $1,163,000

b. Wages for production workers, $391,000

c. Utilities ($120,000) + Depreciation ($220,000) + Property taxes ($70,000) = $410,000

d. Direct materials ($1,163,000) + Direct labor ($391,000) + Manufacturing overhead ($410,000) = $1,964,000

e. Delivery expense, $144,000

2. (LO 3) Cody Cellular has the following data: direct labor $100,000, direct materials used $90,000, total manufacturing overhead $110,000, beginning work in process $15,000, and ending work-in-process $24,000. Compute (a) total manufacturing costs, (b) total cost of work in process, and (c) cost of goods manufactured.

Compute total manufacturing costs and total cost of work in process.

Solution

2. a. Direct materials use	$ 90,000
Direct labor	100,000
Total manufacturing overhead	110,000
Total manufacturing costs	$300,000
b. Beginning work in process	$ 15,000
Total manufacturing costs	300,000
Total cost of work in process	$315,000
c. Total cost of work in process	$315,000
Less ending work in process	(24,000)
Cost of goods manufactured	$291,000

3. (LO 3) The following are current asset items in alphabetical order for Asche Company's balance sheet at December 31, 2020. Prepare the current assets section (including a complete heading).

Prepare current assets section.

Accounts receivable	$100,000
Cash	29,000
Finished goods	47,000
Prepaid expenses	20,000
Raw materials	39,000
Short-term investments	51,000
Work in process	44,000

Solution

3.

Asche Company
Balance Sheet
December 31, 2020

Current assets		
Cash		$ 29,000
Short-term investments		51,000
Accounts receivable		100,000
Inventories		
Finished goods	$47,000	
Work in process	44,000	
Raw materials	39,000	130,000
Prepaid expenses		20,000
Total current assets		$330,000

Practice Exercises

Determine the total amount of various types of costs.

1. (LO 2) Fredricks Company reports the following costs and expenses in May.

Factory utilities	$ 15,600	Direct labor	$89,100
Depreciation on factory equipment	12,650	Sales salaries	46,400
Depreciation on delivery trucks	8,800	Property taxes on factory building	2,500
Indirect factory labor	48,900	Repairs to office equipment	2,300
Indirect materials	80,800	Factory repairs	2,000
Direct materials used	137,600	Advertising	18,000
Factory manager's salary	13,000	Office supplies used	5,640

Instructions

From the information, determine the total amount of:

a. Manufacturing overhead.

b. Product costs.

c. Period costs.

Solution

1. a.

Factory utilities	$ 15,600
Depreciation on factory equipment	12,650
Indirect factory labor	48,900
Indirect materials	80,800
Factory manager's salary	13,000
Property taxes on factory building	2,500
Factory repairs	2,000
Manufacturing overhead	$175,450

b.

Direct materials	$137,600
Direct labor	89,100
Manufacturing overhead	175,450
Product costs	$402,150

c.

Depreciation on delivery trucks	$ 8,800
Sales salaries	46,400
Repairs to office equipment	2,300
Advertising	18,000
Office supplies used	5,640
Period costs	$ 81,140

Compute cost of goods manufactured and sold.

2. (LO 3) Tommi Corporation incurred the following costs while manufacturing its product.

Materials used in production	$120,000	Advertising expense	$45,000
Depreciation on plant	60,000	Property taxes on plant	19,000
Property taxes on store	7,500	Delivery expense	21,000
Labor costs of assembly-line workers	110,000	Sales commissions	35,000
Factory supplies used	25,000	Salaries paid to sales clerks	50,000

Work-in-process inventory was $10,000 at January 1 and $14,000 at December 31. Finished goods inventory was $60,500 at January 1 and $50,600 at December 31. (Assume all materials were direct.)

Instructions

a. Compute cost of goods manufactured.

b. Compute cost of goods sold.

Solution

2. a. Work-in-process, 1/1			$ 10,000
Direct materials used		$120,000	
Direct labor		110,000	
Manufacturing overhead			
Depreciation on plant	$60,000		
Factory supplies used	25,000		
Property taxes on plant	19,000		
Total manufacturing overhead		104,000	
Total manufacturing costs			334,000
Total cost of work-in-process			344,000
Less: Ending work-in-process			14,000
Cost of goods manufactured			$330,000
b. Finished goods, 1/1			$ 60,500
Cost of goods manufactured			330,000
Cost of goods available for sale			390,500
Less: Finished goods, 12/31			50,600
Cost of goods sold			$339,900

Practice Problem

Prepare a cost of goods manufactured schedule, an income statement, and a partial balance sheet.

(LO 3) Superior Company has the following cost and expense data for the year ending December 31, 2020.

Raw materials, 1/1/20	$ 30,000	Property taxes, factory building	$ 6,000
Raw materials, 12/31/20	20,000	Sales revenue	1,500,000
Raw materials purchases	205,000	Delivery expenses	100,000
Work in process, 1/1/20	80,000	Sales commissions	150,000
Work in process, 12/31/20	50,000	Indirect labor	105,000
Finished goods, 1/1/20	110,000	Factory machinery rent	40,000
Finished goods, 12/31/20	120,000	Factory utilities	65,000
Direct labor	350,000	Depreciation, factory building	24,000
Factory manager's salary	35,000	Administrative expenses	300,000
Insurance, factory	14,000		

Instructions

a. Prepare a cost of goods manufactured schedule for Superior Company for 2020. (Assume that all raw materials used were direct materials.)

b. Prepare an income statement for Superior Company for 2020.

c. Assume that Superior Company's accounting records show the balances of the following current asset accounts: Cash $17,000, Accounts Receivable (net) $120,000, Prepaid Expenses $13,000, and Short-Term Investments $26,000. Prepare the current assets section of the balance sheet for Superior Company as of December 31, 2020.

Solution

a.

Superior Company
Cost of Goods Manufactured Schedule
For the Year Ended December 31, 2020

Work in process, 1/1			$ 80,000
Direct materials			
Raw materials inventory, 1/1	$ 30,000		
Raw materials purchases	205,000		
Total raw materials available for use	235,000		
Less: Raw materials inventory, 12/31	20,000		
Direct materials used		$215,000	
Direct labor		350,000	
Manufacturing overhead			
Indirect labor	$105,000		
Factory utilities	65,000		
Factory machinery rent	40,000		
Factory manager's salary	35,000		
Depreciation, factory building	24,000		
Insurance, factory	14,000		
Property taxes, factory building	6,000		
Total manufacturing overhead		289,000	
Total manufacturing costs			854,000
Total cost of work in process			934,000
Less: Work in process, 12/31			50,000
Cost of goods manufactured			$ 884,000

b.

Superior Company
Income Statement
For the Year Ended December 31, 2020

Sales revenue			$1,500,000
Cost of goods sold			
Finished goods inventory, January 1	$110,000		
Cost of goods manufactured	884,000		
Cost of goods available for sale	994,000		
Less: Finished goods inventory, December 31	120,000		
Cost of goods sold			874,000
Gross profit			626,000
Operating expenses			
Administrative expenses	300,000		
Sales commissions	150,000		
Delivery expenses	100,000		
Total operating expenses			550,000
Net income			$ 76,000

c.

Superior Company
Balance Sheet (partial)
December 31, 2020

Current assets		
Cash		$ 17,000
Short-term investments		26,000
Accounts receivable (net)		120,000
Inventory		
Finished goods	$120,000	
Work in process	50,000	
Raw materials	20,000	190,000
Prepaid expenses		13,000
Total current assets		$366,000

WileyPLUS

Brief Exercises, DO IT! Exercises, Exercises, Problems, and many additional resources are available for practice in WileyPLUS.

Questions

1. **a.** "Managerial accounting is a field of accounting that provides economic information for all interested parties." Do you agree? Explain.

b. Joe Delong believes that managerial accounting serves only manufacturing firms. Is Joe correct? Explain.

2. Distinguish between managerial and financial accounting as to (a) primary users of reports, (b) types and frequency of reports, and (c) purpose of reports.

3. How do the content of reports and the verification of reports differ between managerial and financial accounting?

4. Linda Olsen is studying for the next accounting mid-term examination. Summarize for Linda what she should know about management functions.

5. "Decision-making is management's most important function." Do you agree? Why or why not?

6. Explain the primary difference between line positions and staff positions, and give examples of each.

7. Jerry Lang is unclear as to the difference between the balance sheets of a merchandising company and a manufacturing company. Explain the difference to Jerry.

8. How are manufacturing costs classified?

9. Mel Finney claims that the distinction between direct and indirect materials is based entirely on physical association with the product. Is Mel correct? Why?

10. Tina Burke is confused about the differences between a product cost and a period cost. Explain the differences to Tina.

11. Identify the differences in the cost of goods sold section of an income statement between a merchandising company and a manufacturing company.

12. The determination of the cost of goods manufactured involves the following factors: (A) beginning work in process inventory, (B) total manufacturing costs, and (C) ending work in process inventory. Identify the meaning of x in the following formulas:

a. A + B = x **b.** A + B − C = x

13. Sealy Company has beginning raw materials inventory $12,000, ending raw materials inventory $15,000, and raw materials purchases $170,000. What is the cost of direct materials used?

14. Tate Inc. has beginning work in process $26,000, direct materials used $240,000, direct labor $220,000, total manufacturing overhead $180,000, and ending work in process $32,000. What are the total manufacturing costs?

15. Using the data in Question 14, what are (a) the total cost of work in process and (b) the cost of goods manufactured?

16. In what order should manufacturing inventories be listed in a balance sheet?

17. How does the output of manufacturing operations differ from that of service operations?

18. Discuss whether the product costing techniques discussed in this chapter apply equally well to manufacturers and service companies.

19. What is the value chain? Describe, in sequence, the main components of a manufacturer's value chain.

20. What is an enterprise resource planning (ERP) system? What are its primary benefits?

21. Why is product quality important for companies that implement a just-in-time inventory system?

22. Explain what is meant by "balanced" in the balanced scorecard approach.

23. In what ways can the budgeting process create incentives for unethical behavior?

24. What rules were enacted under the Sarbanes-Oxley Act to address unethical accounting practices?

25. What is activity-based costing, and what are its potential benefits?

Brief Exercises

BE19.1 (LO 1) Complete the following comparison table between managerial and financial accounting.

Distinguish between managerial and financial accounting.

	Financial Accounting	Managerial Accounting
Primary users of reports		
Types of reports		
Frequency of reports		
Purpose of reports		
Content of reports		
Verification process		

Identify the three management functions.

BE19.2 (LO 1) Listed below are the three functions of the management of an organization.

1. Planning 2. Directing 3. Controlling

Identify which of the following statements best describes each of the above functions.

a. _____ requires management to look ahead and to establish objectives. A key objective of management is to add value to the business.

b. _____ involves coordinating the diverse activities and human resources of a company to produce a smooth-running operation. This function relates to the implementation of planned objectives.

c. _____ is the process of keeping the activities on track. Management determines whether goals are being met and what changes are necessary when there are deviations.

Classify manufacturing costs.

BE19.3 (LO 2) Determine whether each of the following costs should be classified as direct materials (DM), direct labor (DL), or manufacturing overhead (MO).

a. _____ Frames and tires used in manufacturing bicycles.

b. _____ Wages paid to production workers.

c. _____ Insurance on factory equipment and machinery.

d. _____ Depreciation on factory equipment.

Classify manufacturing costs.

BE19.4 (LO 2) Indicate whether each of the following costs of an automobile manufacturer would be classified as direct materials, direct labor, or manufacturing overhead.

a. _____ Windshield.

b. _____ Engine.

c. _____ Wages of assembly line worker.

d. _____ Depreciation of factory machinery.

e. _____ Factory machinery lubricants.

f. _____ Tires.

g. _____ Steering wheel.

h. _____ Salary of painting supervisor.

Identify product and period costs.

BE19.5 (LO 2) Identify whether each of the following costs should be classified as product costs or period costs.

a. _____ Manufacturing overhead.

b. _____ Selling expenses.

c. _____ Administrative expenses.

d. _____ Advertising expenses.

e. _____ Direct labor.

f. _____ Direct materials.

Classify manufacturing costs.

BE19.6 (LO 2) Presented below are Rook Company's monthly manufacturing cost data related to its tablet computer product.

a.	Utilities for manufacturing equipment	$116,000
b.	Raw materials (CPU, chips, etc.)	$ 85,000
c.	Depreciation on manufacturing building	$880,000
d.	Wages for production workers	$191,000

Enter each cost item in the following table, placing an "X" under the appropriate headings.

	Product Costs		
	Direct Materials	**Direct Labor**	**Factory Overhead**
a.			
b.			
c.			
d.			

Compute total manufacturing costs and total cost of work in process.

BE19.7 (LO 3) Francum Company has the following data: direct labor $209,000, direct materials used $180,000, total manufacturing overhead $208,000, and beginning work in process $25,000. Compute (a) total manufacturing costs and (b) total cost of work in process.

Prepare current assets section.

BE19.8 (LO 3) In alphabetical order below are current asset items for Roland Company's balance sheet at December 31, 2020. Prepare the current assets section (including a complete heading).

Accounts receivable	$200,000
Cash	62,000
Finished goods	91,000
Prepaid expenses	38,000
Raw materials	83,000
Work in process	87,000

BE19.9 (LO 3) Presented below are incomplete manufacturing cost data. Determine the missing amounts for three different situations.

Determine missing amounts in computing total manufacturing costs.

	Direct Materials Used	Direct Labor Used	Factory Overhead	Total Manufacturing Costs
1.	$40,000	$61,000	$ 50,000	?
2.	?	$75,000	$140,000	$296,000
3.	$55,000	?	$111,000	$310,000

BE19.10 (LO 3) Use the same data from BE19.9 above and the data below. Determine the missing amounts.

Determine missing amounts in computing cost of goods manufactured.

	Total Manufacturing Costs	Work in Process (1/1)	Work in Process (12/31)	Cost of Goods Manufactured
1.	?	$120,000	$82,000	?
2.	$296,000	?	$98,000	$331,000
3.	$310,000	$463,000	?	$715,000

BE19.11 (LO 4) The Sarbanes-Oxley Act (SOX) has important implications for the financial community. Explain two implications of SOX.

Identify important regulatory changes.

DO IT! Exercises

DO IT! 19.1 (LO 1) Indicate whether the following statements are true or false.

Identify managerial accounting concepts.

1. Managerial accounting reports focus on manufacturing and nonmanufacturing costs.
2. Financial accounting reports pertain to subunits of the business and are very detailed.
3. Managerial accounting reports must follow GAAP and are audited by CPAs.
4. Managers' activities and responsibilities can be classified into three broad functions: planning, directing, and controlling.

DO IT! 19.2 (LO 2) A music company has these costs:

Identify managerial cost classifications.

Advertising	Paper inserts for CD cases
Blank CDs	CD plastic cases
Depreciation of CD image burner	Salaries of sales representatives
Salary of factory manager	Salaries of factory maintenance employees
Factory supplies used	Salaries of employees who burn music onto CDs

Classify each cost as a period or a product cost. Within the product cost category, indicate if the cost is part of direct materials (DM), direct labor (DL), or manufacturing overhead (MO).

DO IT! 19.3 (LO 3) The following information is available for Tomlin Company.

Prepare cost of goods manufactured schedule.

	April 1	April 30
Raw materials inventory	$10,000	$14,000
Work in process inventory	5,000	3,500

Materials purchased in April	$ 98,000
Direct labor in April	80,000
Manufacturing overhead in April	160,000

Prepare the cost of goods manufactured schedule for the month of April.

DO IT! 19.4 (LO 4) Match the descriptions that follow with the corresponding terms.

Identify trends in managerial accounting.

Descriptions:

1. _____ Inventory system in which goods are manufactured or purchased just as they are needed for sale.
2. _____ A method of allocating overhead based on each product's use of activities in making the product.
3. _____ Systems that are especially important to firms adopting just-in-time inventory methods.
4. _____ Provides guidelines for companies to describe their sustainable business practices to external parties.

5. _____ Part of the value chain for a manufacturing company.
6. _____ The U.S. economy is trending toward this.
7. _____ A performance-measurement approach that uses both financial and nonfinancial measures, tied to company objectives, to evaluate a company's operations in an integrated fashion.
8. _____ Requires that top managers certify that the company maintains an adequate system of internal controls.

Terms:

a. Activity-based costing
b. Balanced scorecard
c. Total quality management (TQM)
d. Research and development, and product design
e. Service industries
f. Just-in-time (JIT) inventory
g. Sarbanes-Oxley Act (SOX)
h. Global Reporting Initiative

Exercises

Identify distinguishing features of managerial accounting.

E19.1 (LO 1) Justin Bleeber has prepared the following list of statements about managerial accounting, financial accounting, and the functions of management.

1. Financial accounting focuses on providing information to internal users.
2. Staff positions are directly involved in the company's primary revenue-generating activities.
3. Preparation of budgets is part of financial accounting.
4. Managerial accounting applies only to merchandising and manufacturing companies.
5. Both managerial accounting and financial accounting deal with many of the same economic events.
6. Managerial accounting reports are prepared only quarterly and annually.
7. Financial accounting reports are general-purpose reports.
8. Managerial accounting reports pertain to subunits of the business.
9. Managerial accounting reports must comply with generally accepted accounting principles.
10. The company treasurer reports directly to the vice president of operations.

Instructions

Identify each statement as true or false. If false, indicate how to correct the statement.

Classify costs into three classes of manufacturing costs.

E19.2 (LO 2) Presented below is a list of costs and expenses usually incurred by Barnum Corporation, a manufacturer of furniture, in its factory.

1. Salaries for assembly line inspectors.
2. Insurance on factory machines.
3. Property taxes on the factory building.
4. Factory repairs.
5. Upholstery used in manufacturing furniture.
6. Wages paid to assembly line workers.
7. Factory machinery depreciation.
8. Glue, nails, paint, and other small parts used in production.
9. Factory supervisors' salaries.
10. Wood used in manufacturing furniture.

Instructions

Classify the above items into the following categories: (a) direct materials, (b) direct labor, and (c) manufacturing overhead.

Identify types of cost and explain their accounting.

E19.3 (LO 2) Trak Corporation incurred the following costs while manufacturing its bicycles.

Bicycle components	$100,000	Advertising expense	$45,000
Depreciation on plant	60,000	Property taxes on plant	14,000
Property taxes on store	7,500	Delivery expense	21,000
Labor costs of assembly-line workers	110,000	Sales commissions	35,000
Factory supplies used	13,000	Salaries paid to sales clerks	50,000

Instructions

a. Identify each of the above costs as direct materials, direct labor, manufacturing overhead, or period costs.
b. Explain the basic difference in accounting for product costs and period costs.

E19.4 (LO 2) Knight Company reports the following costs and expenses in May.

Determine the total amount of various types of costs.

Factory utilities	$ 15,500	Direct labor	$69,100
Depreciation on factory equipment	12,650	Sales salaries	46,400
Depreciation on delivery trucks	3,800	Property taxes on factory building	2,500
Indirect factory labor	48,900	Repairs to office equipment	1,300
Indirect materials	80,800	Factory repairs	2,000
Direct materials used	137,600	Advertising	15,000
Factory manager's salary	8,000	Office supplies used	2,640

Instructions

From the information, determine the total amount of:

a. Manufacturing overhead.

b. Product costs.

c. Period costs.

E19.5 (LO 2) Gala Company is a manufacturer of laptop computers. Various costs and expenses associated with its operations are as follows.

Classify various costs into different cost categories.

1. Property taxes on the factory building.

2. Production superintendents' salaries.

3. Memory boards and chips used in assembling computers.

4. Depreciation on the factory equipment.

5. Salaries for assembly-line quality control inspectors.

6. Sales commissions paid to sell laptop computers.

7. Electrical components used in assembling computers.

8. Wages of workers assembling laptop computers.

9. Soldering materials used on factory assembly lines.

10. Salaries for the night security guards for the factory building.

The company intends to classify these costs and expenses into the following categories: (a) direct materials, (b) direct labor, (c) manufacturing overhead, and (d) period costs.

Instructions

List the items (1) through (10). For each item, indicate the cost category to which it belongs.

E19.6 (LO 2) **Service** The administrators of Crawford County's Memorial Hospital are interested in identifying the various costs and expenses that are incurred in producing a patient's X-ray. A list of such costs and expenses is presented below.

Classify various costs into different cost categories.

1. Salaries for the X-ray machine technicians.

2. Wages for the hospital janitorial personnel.

3. Film costs for the X-ray machines.

4. Property taxes on the hospital building.

5. Salary of the X-ray technicians' supervisor.

6. Electricity costs for the X-ray department.

7. Maintenance and repairs on the X-ray machines.

8. X-ray department supplies.

9. Depreciation on the X-ray department equipment.

10. Depreciation on the hospital building.

The administrators want these costs and expenses classified as (a) direct materials, (b) direct labor, or (c) service overhead.

Instructions

List the items (1) through (10). For each item, indicate the cost category to which the item belongs.

E19.7 (LO 2) **Service** National Express reports the following costs and expenses in June 2020 for its delivery service.

Classify various costs into different cost categories.

Indirect materials	$ 6,400	Drivers' salaries	$16,000
Depreciation on delivery equipment	11,200	Advertising	4,600
Dispatcher's salary	5,000	Delivery equipment repairs	300
Property taxes on office building	870	Office supplies	650
CEO's salary	12,000	Office utilities	990
Gas and oil for delivery trucks	2,200	Repairs on office equipment	180

Instructions

Determine the total amount of (a) delivery service (product) costs and (b) period costs.

Compute cost of goods manufactured and sold.

E19.8 (LO 3) Lopez Corporation incurred the following costs while manufacturing its product.

Materials used in product	$120,000	Advertising expense	$45,000
Depreciation on plant	60,000	Property taxes on plant	14,000
Property taxes on store	7,500	Delivery expense	21,000
Labor costs of assembly-line workers	110,000	Sales commissions	35,000
		Salaries paid to sales clerks	50,000
Factory supplies used	23,000		

Work in process inventory was $12,000 at January 1 and $15,500 at December 31. Finished goods inventory was $60,000 at January 1 and $45,600 at December 31.

Instructions

a. Compute cost of goods manufactured.

b. Compute cost of goods sold.

Determine missing amounts in cost of goods manufactured schedule.

E19.9 (LO 3) An incomplete cost of goods manufactured schedule is presented below.

Hobbit Company
Cost of Goods Manufactured Schedule
For the Year Ended December 31, 2020

Work in process (1/1)			$210,000
Direct materials			
Raw materials inventory (1/1)	$?		
Add: Raw materials purchases	158,000		
Total raw materials available for use	?		
Less: Raw materials inventory (12/31)	22,500		
Direct materials used		$180,000	
Direct labor		?	
Manufacturing overhead			
Indirect labor	18,000		
Factory depreciation	36,000		
Factory utilities	68,000		
Total overhead		122,000	
Total manufacturing costs			?
Total cost of work in process			?
Less: Work in process (12/31)			81,000
Cost of goods manufactured			$540,000

Instructions

Complete the cost of goods manufactured schedule for Hobbit Company.

Determine the missing amount of different cost items.

E19.10 (LO 3) Manufacturing cost data for Copa Company are presented below.

	Case A	Case B	Case C
Direct materials used	$ (a)	$68,400	$130,000
Direct labor	57,000	86,000	(g)
Manufacturing overhead	46,500	81,600	102,000
Total manufacturing costs	195,650	(d)	253,700
Work in process 1/1/20	(b)	16,500	(h)
Total cost of work in process	221,500	(e)	337,000
Work in process 12/31/20	(c)	11,000	70,000
Cost of goods manufactured	185,275	(f)	(i)

Instructions

Indicate the missing amount for each letter (a) through (i).

E19.11 (LO 3) Incomplete manufacturing cost data for Horizon Company for 2020 are presented as follows for four different situations.

Determine the missing amount of different cost items, and prepare a condensed cost of goods manufactured schedule.

	Direct Materials Used	Direct Labor Used	Manufacturing Overhead	Total Manufacturing Costs	Work in Process 1/1	Work in Process 12/31	Cost of Goods Manufactured
(1)	$117,000	$140,000	$ 87,000	$ (a)	$33,000	$ (b)	$360,000
(2)	(c)	200,000	132,000	450,000	(d)	40,000	470,000
(3)	80,000	100,000	(e)	265,000	60,000	80,000	(f)
(4)	70,000	(g)	75,000	288,000	45,000	(h)	270,000

Instructions

a. Indicate the missing amount for each letter.

b. Prepare a condensed cost of goods manufactured schedule for situation (1) for the year ended December 31, 2020.

E19.12 (LO 3) Cepeda Corporation has the following cost records for June 2020.

Prepare a cost of goods manufactured schedule and a partial income statement.

Indirect factory labor	$ 4,500	Factory utilities	$ 400
Direct materials used	20,000	Depreciation, factory equipment	1,400
Work in process, 6/1/20	3,000	Direct labor	40,000
Work in process, 6/30/20	3,800	Maintenance, factory equipment	1,800
Finished goods, 6/1/20	5,000	Indirect materials	2,200
Finished goods, 6/30/20	7,500	Factory manager's salary	3,000

Instructions

a. Prepare a cost of goods manufactured schedule for June 2020.

b. Prepare an income statement through gross profit for June 2020 assuming sales revenue is $92,100.

E19.13 (LO 2, 3) Service Keisha Tombert, the bookkeeper for Washington Consulting, a political consulting firm, has recently completed a managerial accounting course at her local college. One of the topics covered in the course was the cost of goods manufactured schedule. Keisha wondered if such a schedule could be prepared for her firm. She realized that, as a service-oriented company, it would have no work in process inventory to consider.

Classify various costs into different categories and prepare cost of services performed schedule.

Listed below are the costs her firm incurred for the month ended August 31, 2020.

Supplies used on consulting contracts	$ 1,700
Supplies used in the administrative offices	1,500
Depreciation on equipment used for contract work	900
Depreciation used on administrative office equipment	1,050
Salaries of professionals working on contracts	15,600
Salaries of administrative office personnel	7,700
Janitorial services for professional offices	700
Janitorial services for administrative offices	500
Insurance on contract operations	800
Insurance on administrative operations	900
Utilities for contract operations	1,400
Utilities for administrative offices	1,300

Instructions

a. Prepare a schedule of cost of contract services performed (similar to a cost of goods manufactured schedule) for the month.

b. For those costs not included in (a), explain how they would be classified and reported in the financial statements.

Prepare a cost of goods manufactured schedule and a partial income statement.

E19.14 (LO 3) The following information is available for Aikman Company.

	January 1, 2020	2020	December 31, 2020
Raw materials inventory	$21,000		$30,000
Work in process inventory	13,500		17,200
Finished goods inventory	27,000		21,000
Materials purchased		$150,000	
Direct labor		220,000	
Manufacturing overhead		180,000	
Sales revenue		910,000	

Instructions

a. Compute cost of goods manufactured.

b. Prepare an income statement through gross profit.

c. Show the presentation of the ending inventories on the December 31, 2020, balance sheet.

d. How would the income statement and balance sheet of a merchandising company be different from Aikman's financial statements?

Indicate in which schedule or financial statement(s) different cost items will appear.

E19.15 (LO 3) University Company produces collegiate apparel. From its accounting records, it prepares the following schedule and financial statements on a yearly basis.

a. Cost of goods manufactured schedule.

b. Income statement.

c. Balance sheet.

The following items are found in its ledger and accompanying data.

1. Direct labor
2. Raw materials inventory, 1/1
3. Work in process inventory, 12/31
4. Finished goods inventory, 1/1
5. Indirect labor
6. Depreciation on factory machinery
7. Work in process, 1/1
8. Finished goods inventory, 12/31
9. Factory maintenance salaries
10. Cost of goods manufactured
11. Depreciation on delivery equipment
12. Cost of goods available for sale
13. Direct materials used
14. Heat and electricity for factory
15. Repairs to roof of factory building
16. Cost of raw materials purchases

Instructions

List the items (1)–(16). For each item, indicate by using the appropriate letter or letters, the schedule and/or financial statement(s) in which the item will appear.

Prepare a cost of goods manufactured schedule, and present the ending inventories on the balance sheet.

E19.16 (LO 3) An analysis of the accounts of Roberts Company reveals the following manufacturing cost data for the month ended June 30, 2020.

Inventory	Beginning	Ending
Raw materials	$9,000	$13,100
Work in process	5,000	7,000
Finished goods	9,000	8,000

Costs incurred: raw materials purchases $54,000, direct labor $47,000, manufacturing overhead $19,900. The specific overhead costs were: indirect labor $5,500, factory insurance $4,000, machinery depreciation

$4,000, machinery repairs $1,800, factory utilities $3,100, and miscellaneous factory costs $1,500. Assume that all raw materials used were direct materials.

Instructions

a. Prepare the cost of goods manufactured schedule for the month ended June 30, 2020.

b. Show the presentation of the ending inventories on the June 30, 2020, balance sheet.

E19.17 (LO 3) Writing McQueen Motor Company manufactures automobiles. During September 2020, the company purchased 5,000 head lamps at a cost of $15 per lamp. Fifty of these lamps were used to replace the head lamps in autos used by traveling sales staff, and 4,600 lamps were put in autos manufactured during the month.

Determine the amount of cost to appear in various accounts, and indicate in which financial statements these accounts would appear.

Of the autos put into production during September 2020, 90% were completed and transferred to the company's storage lot. Of the cars completed during the month, 70% were sold by September 30.

Instructions

a. Determine the cost of head lamps that would appear in each of the following accounts at September 30, 2020: Raw Materials, Work in Process, Finished Goods, Cost of Goods Sold, and Selling Expenses.

b. Write a short memo to the chief accountant, indicating whether and where each of the accounts in (a) would appear on the income statement or on the balance sheet at September 30, 2020.

E19.18 (LO 4) The following is a list of terms related to managerial accounting practices.

Identify various managerial accounting practices.

1. Activity-based costing.

2. Just-in-time inventory.

3. Balanced scorecard.

4. Value chain.

Instructions

Match each of the terms with the statement below that best describes the term.

a. _____ A performance-measurement technique that attempts to consider and evaluate all aspects of performance using financial and nonfinancial measures in an integrated fashion.

b. _____ The group of activities associated with providing a product or performing a service.

c. _____ An approach used to reduce the cost associated with handling and holding inventory by reducing the amount of inventory on hand.

d. _____ A method used to allocate overhead to products based on each product's use of the activities that cause the incurrence of the overhead cost.

Problems: Set A

P19.1A (LO 2) Ohno Company specializes in manufacturing a unique model of bicycle helmet. The model is well accepted by consumers, and the company has enough orders to keep the factory production at 10,000 helmets per month (80% of its full capacity). Ohno's monthly manufacturing cost and other expense data are as follows.

Classify manufacturing costs into different categories and compute the unit cost.

Rent on factory equipment	$11,000
Insurance on factory building	1,500
Raw materials (plastics, polystyrene, etc.)	75,000
Utility costs for factory	900
Supplies for general office	300
Wages for assembly line workers	58,000
Depreciation on office equipment	800
Miscellaneous materials (glue, thread, etc.)	1,100
Factory manager's salary	5,700
Property taxes on factory building	400
Advertising for helmets	14,000
Sales commissions	10,000
Depreciation on factory building	1,500

a. DM $75,000
DL $58,000
MO $22,100
PC $25,100

Instructions

a. Prepare an answer sheet with the following column headings.

Cost Item	Product Costs: Direct Materials	Direct Labor	Manufacturing Overhead	Period Costs

Enter each cost item on your answer sheet, placing the dollar amount under the appropriate headings. Total the dollar amounts in each of the columns.

b. Compute the cost to produce one helmet.

Classify manufacturing costs into different categories and compute the unit cost.

P19.2A (LO 2) Bell Company, a manufacturer of audio systems, started its production in October 2020. For the preceding 3 years, Bell had been a retailer of audio systems. After a thorough survey of audio system markets, Bell decided to turn its retail store into an audio equipment factory.

Raw material costs for an audio system will total $74 per unit. Workers on the production lines are on average paid $12 per hour. An audio system usually takes 5 hours to complete. In addition, the rent on the equipment used to assemble audio systems amounts to $4,900 per month. Indirect materials cost $5 per system. A supervisor was hired to oversee production; her monthly salary is $3,000.

Factory janitorial costs are $1,300 monthly. Advertising costs for the audio system will be $9,500 per month. The factory building depreciation expense is $7,800 per year. Property taxes on the factory building will be $9,000 per year.

a. DM $111,000
DL $ 90,000
MO $ 18,100
PC $ 9,500

Instructions

a. Prepare an answer sheet with the following column headings.

Cost Item	Product Costs: Direct Materials	Direct Labor	Manufacturing Overhead	Period Costs

Assuming that Bell manufactures, on average, 1,500 audio systems per month, enter each cost item on your answer sheet, placing the dollar amount per month under the appropriate headings. Total the dollar amounts in each of the columns.

b. Compute the cost to produce one audio system.

Indicate the missing amount of different cost items, and prepare a condensed cost of goods manufactured schedule, an income statement, and a partial balance sheet.

P19.3A (LO 3) Incomplete manufacturing costs, expenses, and selling data for two different cases are as follows.

	Case 1	Case 2
Direct materials used	$ 9,600	$ (g)
Direct labor	5,000	8,000
Manufacturing overhead	8,000	4,000
Total manufacturing costs	(a)	16,000
Beginning work in process inventory	1,000	(h)
Ending work in process inventory	(b)	3,000
Sales revenue	24,500	(i)
Sales discounts	2,500	1,400
Cost of goods manufactured	17,000	24,000
Beginning finished goods inventory	(c)	3,300
Cost of goods available for sale	22,000	(j)
Cost of goods sold	(d)	(k)
Ending finished goods inventory	3,400	2,500
Gross profit	(e)	7,000
Operating expenses	2,500	(l)
Net income	(f)	5,000

Instructions

a. Indicate the missing amount for each letter.

b. Ending WIP $ 6,600

b. Prepare a condensed cost of goods manufactured schedule for Case 1.

c. Current assets $29,000

c. Prepare an income statement and the current assets section of the balance sheet for Case 1. Assume that in Case 1 the other items in the current assets section are as follows: Cash $3,000, Receivables (net) $15,000, Raw Materials $600, and Prepaid Expenses $400.

P19.4A (LO 3) The following data were taken from the records of Clarkson Company for the fiscal year ended June 30, 2020.

Prepare a cost of goods manufactured schedule, a partial income statement, and a partial balance sheet.

Excel

Raw Materials		Factory Insurance	$ 4,600
Inventory 7/1/19	$ 48,000	Factory Machinery	
Raw Materials		Depreciation	16,000
Inventory 6/30/20	39,600	Factory Utilities	27,600
Finished Goods		Office Utilities Expense	8,650
Inventory 7/1/19	96,000	Sales Revenue	534,000
Finished Goods		Sales Discounts	4,200
Inventory 6/30/20	75,900	Plant Manager's Salary	58,000
Work in Process		Factory Property Taxes	9,600
Inventory 7/1/19	19,800	Factory Repairs	1,400
Work in Process		Raw Materials Purchases	96,400
Inventory 6/30/20	18,600	Cash	32,000
Direct Labor	139,250		
Indirect Labor	24,460		
Accounts Receivable	27,000		

Instructions

a. Prepare a cost of goods manufactured schedule. (Assume all raw materials used were direct materials.)

b. Prepare an income statement through gross profit.

c. Prepare the current assets section of the balance sheet at June 30, 2020.

a. CGM $386,910
b. Gross profit $122,790
c. Current assets $193,100

P19.5A (LO 3) Empire Company is a manufacturer of smart phones. Its controller resigned in October 2020. An inexperienced assistant accountant has prepared the following income statement for the month of October 2020.

Prepare a cost of goods manufactured schedule and a correct income statement.

Excel

Empire Company
Income Statement
For the Month Ended October 31, 2020

Sales revenue		$780,000
Less: Operating expenses		
Raw materials purchases	$264,000	
Direct labor cost	190,000	
Advertising expense	90,000	
Selling and administrative salaries	75,000	
Rent on factory facilities	60,000	
Depreciation on sales equipment	45,000	
Depreciation on factory equipment	31,000	
Indirect labor cost	28,000	
Utilities expense	12,000	
Insurance expense	8,000	803,000
Net loss		$ (23,000)

Prior to October 2020, the company had been profitable every month. The company's president is concerned about the accuracy of the income statement. As her friend, you have been asked to review the income statement and make necessary corrections. After examining other manufacturing cost data, you have acquired additional information as follows.

1. Inventory balances at the beginning and end of October were:

	October 1	October 31
Raw materials	$18,000	$29,000
Work in process	20,000	14,000
Finished goods	30,000	50,000

2. Only 75% of the utilities expense and 60% of the insurance expense apply to factory operations. The remaining amounts should be charged to selling and administrative activities.

Instructions

a. Prepare a schedule of cost of goods manufactured for October 2020.

b. Prepare a correct income statement for October 2020.

a. CGM $581,800
b. NI $ 2,000

Continuing Cases

*Chapters 19–27 include a hypothetical case featuring **Current Designs**, the company described at the beginning of this chapter. Students can also work through this case following an **Excel tutorial** available in **WileyPLUS**. Each chapter's tutorial focuses on a different Excel function or feature.*

Excel

Current Designs

CD19 Mike Cichanowski founded **Wenonah Canoe** and later purchased **Current Designs**, a company that designs and manufactures kayaks. The kayak-manufacturing facility is located just a few minutes from the canoe company's headquarters in Winona, Minnesota.

Current Designs makes kayaks using two different processes. The rotational molding process uses high temperature to melt polyethylene powder in a closed rotating metal mold to produce a complete kayak hull and deck in a single piece. These kayaks are less labor-intensive and less expensive for the company to produce and sell.

Its other kayaks use the vacuum-bagged composite lamination process (which we will refer to as the composite process). Layers of fiberglass or Kevlar® are carefully placed by hand in a mold and are bonded with resin. Then, a high-pressure vacuum is used to eliminate any excess resin that would otherwise add weight and reduce strength of the finished kayak. These kayaks require a great deal of skilled labor as each boat is individually finished. The exquisite finish of the vacuum-bagged composite kayaks gave rise to Current Designs' tag line, "A work of art, made for life."

Current Designs has the following managers:

Mike Cichanowski, CEO
Diane Buswell, Controller
Deb Welch, Purchasing Manager
Bill Johnson, Sales Manager
Dave Thill, Kayak Plant Manager
Rick Thrune, Production Manager for Composite Kayaks

Current Designs

Home Insert Page Layout Formulas Data Review View

P18 fx

	A	B	C			D	E
1							
2			Product Costs				
3	Payee	Purpose	Direct Materials	Direct Labor	Manufacturing Overhead	Period Costs	Amount
4	Winona Agency	Property insurance for the manufacturing plant					3,200
5	Bill Johnson (sales manager)	Payroll check—payment to sales manager					1,700
6	Xcel Energy	Electricity for manufacturing plant					450
7	Winona Printing	Price lists for salespeople					85
8	Jim Kaiser (sales representative)	Sales commissions					1,250
9	Dave Thill (plant manager)	Payroll check—payment to plant manager					1,450
10	Dana Schultz (kayak assembler)	Payroll check—payment to kayak assembler					760
11	Composite One	Bagging film used when kayaks are assembled; it is discarded after use					260
12	Fastenal	Shop supplies—brooms, paper towels, etc.					890
13	Ravago	Polyethylene powder which is the main ingredient for the rotational molded kayaks					3,170
14	Winona County	Property taxes on manufacturing plant					5,480
15	North American Composites	Kevlar® fabric for composite kayaks					4,930
16	Waste Management	Trash disposal for the company office building					660
17	None	Journal entry to record depreciation of manufacturing equipment					4,540

Instructions

a. What are the primary information needs of each manager?

b. Name one special-purpose management accounting report that could be designed for each manager. Include the name of the report, the information it would contain, and how frequently it should be issued.

c. When Diane Buswell, controller for Current Designs, reviewed the accounting records for a recent period, she noted the cost items and amounts shown above (amounts are assumed). Enter the amount for each item in the appropriate cost category. Then sum the amounts in each cost category column.

*The **Waterways case** starts in this chapter and continues in every remaining chapter. You will find the complete case for each chapter in **WileyPLUS**.*

Waterways

WP19 Waterways Corporation is a private corporation formed for the purpose of providing the products and the services needed to irrigate farms, parks, commercial projects, and private lawns. It has a centrally located factory in a U.S. city that manufactures the products it markets to retail outlets across the nation. It also maintains a division that performs installation and warranty servicing in six metropolitan areas.

The mission of Waterways is to manufacture quality parts that can be used for effective irrigation projects that also conserve water. By that effort, the company hopes to satisfy its customers, perform rapid and responsible service, and serve the community and the employees who represent them in each community.

The company has been growing rapidly, so management is considering new ideas to help the company continue its growth and maintain the high quality of its products.

Waterways was founded by Will Winkman, who is the company president and chief executive officer (CEO). Working with him from the company's inception is Will's brother, Ben, whose sprinkler designs and ideas about the installation of proper systems have been a major basis of the company's success. Ben is the vice president who oversees all aspects of design and production in the company.

The factory itself is managed by Todd Senter who hires his line managers to supervise the factory employees. The factory makes all of the parts for the irrigation systems. The purchasing department is managed by Helen Hines.

The installation and training division is overseen by vice president Henry Writer, who supervises the managers of the six local installation operations. Each of these local managers hires his or her own local service people. These service employees are trained by the home office under Henry Writer's direction because of the uniqueness of the company's products.

There is a small human resources department under the direction of Sally Fenton, a vice president who handles the employee paperwork, though hiring is actually performed by the separate departments. Teresa Totter is the vice president who heads the sales and marketing area; she oversees 10 well-trained salespeople.

The accounting and finance division of the company is run by Ann Headman, who is the chief financial officer (CFO) and a company vice president. She is a member of the Institute of Management Accountants and holds a certificate in management accounting. She has a small staff of accountants, including a controller and a treasurer, and a staff of accounting input operators who maintain the financial records.

A partial list of Waterways' accounts and their balances for the month of November follows.

Accounts Receivable	$ 275,000
Advertising Expenses	54,000
Cash	260,000
Depreciation—Factory Equipment	16,800
Depreciation—Office Equipment	2,400
Direct Labor	42,000
Factory Supplies Used	16,800
Factory Utilities	10,200
Finished Goods Inventory, November 30	68,800
Finished Goods Inventory, October 31	72,550
Indirect Labor	48,000
Office Supplies Expense	1,600
Other Administrative Expenses	72,000
Prepaid Expenses	41,250
Raw Materials Inventory, November 30	52,700
Raw Materials Inventory, October 31	38,000
Raw Materials Purchases	184,500
Rent—Factory Equipment	47,000
Repairs—Factory Equipment	4,500

Salaries	325,000
Sales Revenue	1,350,000
Sales Commissions	40,500
Work in Process Inventory, October 31	52,700
Work in Process Inventory, November 30	42,000

Instructions

a. Based on the information given, construct an organizational chart of Waterways Corporation.

b. A list of accounts and their values are given above. From this information, prepare a cost of goods manufactured schedule, an income statement, and a partial balance sheet for Waterways Corporation for the month of November.

Expand Your Critical Thinking

Decision-Making Across the Organization

CT19.1 Wendall Company specializes in producing fashion outfits. On July 31, 2020, a tornado touched down at its factory and general office. The inventories in the warehouse and the factory were completely destroyed as was the general office nearby. Next morning, through a careful search of the disaster site, however, Bill Francis, the company's controller, and Elizabeth Walton, the cost accountant, were able to recover a small part of manufacturing cost data for the current month.

"What a horrible experience," sighed Bill "And the worst part is that we may not have enough records to use in filing an insurance claim."

"It was terrible," replied Elizabeth. "However, I managed to recover some of the manufacturing cost data that I was working on yesterday afternoon. The data indicate that our direct labor cost in July totaled $250,000 and that we had purchased $365,000 of raw materials. Also, I recall that the amount of raw materials used for July was $350,000. But I'm not sure this information will help. The rest of our records are blown away."

"Well, not exactly," said Bill. "I was working on the year-to-date income statement when the tornado warning was announced. My recollection is that our sales in July were $1,240,000 and our gross profit ratio has been 40% of sales. Also, I can remember that our cost of goods available for sale was $770,000 for July."

"Maybe we can work something out from this information!" exclaimed Elizabeth. "My experience tells me that our manufacturing overhead is usually 60% of direct labor."

"Hey, look what I just found," cried Elizabeth. "It's a copy of this June's balance sheet, and it shows that our inventories as of June 30 are Finished goods $38,000, Work in process $25,000, and Raw materials $19,000."

"Super," yelled Bill. "Let's go work something out."

In order to file an insurance claim, Wendall Company needs to determine the amount of its inventories as of July 31, 2020, the date of the tornado touchdown.

Instructions

With the class divided into groups, determine the amount of cost in the Raw Materials, Work in Process, and Finished Goods inventory accounts as of the date of the tornado touchdown.

Managerial Analysis

CT19.2 Tenrack is a fairly large manufacturing company located in the southern United States. The company manufactures tennis rackets, tennis balls, tennis clothing, and tennis shoes, all bearing the company's distinctive logo, a large green question mark on a white flocked tennis ball. The company's sales have been increasing over the past 10 years.

The tennis racket division has recently implemented several advanced manufacturing techniques. Robot arms hold the tennis rackets in place while glue dries, and machine vision systems check for defects. The engineering and design team uses computerized drafting and testing of new products. The following managers work in the tennis racket division:

Jason Dennis, Sales Manager (supervises all sales representatives)
Peggy Groneman, Technical Specialist (supervises computer programmers)
Dave Marley, Cost Accounting Manager (supervises cost accountants)
Kevin Carson, Production Supervisor (supervises all manufacturing employees)
Sally Renner, Engineer (supervises all new-product design teams)

Instructions

a. What are the primary information needs of each manager?

b. Which, if any, financial accounting report(s) is each likely to use?

c. Name one special-purpose management accounting report that could be designed for each manager. Include the name of the report, the information it would contain, and how frequently it should be issued.

Real-World Focus

CT19.3 **The Institute of Management Accountants** (IMA) is an organization dedicated to excellence in the practice of management accounting and financial management.

Instructions

Go to the IMA's website to locate the answers to the following questions.

a. How many members does the IMA have, and what are their job titles?

b. What are some of the benefits of joining the IMA as a student?

c. Use the chapter locator function to locate the IMA chapter nearest you, and find the name of the chapter president.

Communication Activity

CT19.4 Refer to P19.5A and add the following requirement.

Prepare a letter to the president of the company, Shelly Phillips, describing the changes you made. Explain clearly why net income is different after the changes. Keep the following points in mind as you compose your letter.

1. This is a letter to the president of a company, who is your friend. The style should be generally formal, but you may relax some requirements. For example, you may call the president by her first name.
2. Executives are very busy. Your letter should tell the president your main results first (for example, the amount of net income).
3. You should include brief explanations so that the president can understand the changes you made in the calculations.

Ethics Case

CT19.5 Steve Morgan, controller for Newton Industries, was reviewing production cost reports for the year. One amount in these reports continued to bother him—advertising. During the year, the company had instituted an expensive advertising campaign to sell some of its slower-moving products. It was still too early to tell whether the advertising campaign was successful.

There had been much internal debate as how to report advertising cost. The vice president of finance argued that advertising costs should be reported as a cost of production, just like direct materials and direct labor. He therefore recommended that this cost be identified as manufacturing overhead and reported as part of inventory costs until sold. Others disagreed. Morgan believed that this cost should be reported as an expense of the current period, so as not to overstate net income. Others argued that it should be reported as prepaid advertising and reported as a current asset.

The president finally had to decide the issue. He argued that these costs should be reported as inventory. His arguments were practical ones. He noted that the company was experiencing financial difficulty and expensing this amount in the current period might jeopardize a planned bond offering. Also, by reporting the advertising costs as inventory rather than as prepaid advertising, less attention would be directed to it by the financial community.

Instructions

a. Who are the stakeholders in this situation?

b. What are the ethical issues involved in this situation?

c. What would you do if you were Steve Morgan?

All About You

CT19.6 The primary purpose of managerial accounting is to provide information useful for management decisions. Many of the managerial accounting techniques that you learn in this course will be useful for decisions you make in your everyday life.

Instructions

For each of the following managerial accounting techniques, read the definition provided and then provide an example of a personal situation that would benefit from use of this technique.

a. Break-even point (Chapter 22).

b. Budget (Chapter 24).

c. Balanced scorecard (Chapter 26).

d. Capital budgeting (Chapter 27).

Considering Your Costs and Benefits

CT19.7 As noted in this chapter, because of global competition, companies have become increasingly focused on reducing costs. To reduce costs and remain competitive, many companies are turning to outsourcing. Outsourcing means hiring an outside supplier to provide elements of a product or service rather than producing them internally.

Suppose you are the managing partner in a CPA firm with 30 full-time staff. Larger firms in your community have begun to outsource basic tax-return preparation work to India. Should you outsource your basic tax-return work to India as well? You estimate that you would have to lay off six staff members if you outsource the work. The basic arguments for and against are as follows.

YES: The wages paid to Indian accountants are very low relative to U.S. wages. You will not be able to compete unless you outsource.

NO: Tax-return data is highly sensitive. Many customers will be upset to learn that their data is being emailed around the world.

Instructions

Write a response indicating your position regarding this situation. Provide support for your view.