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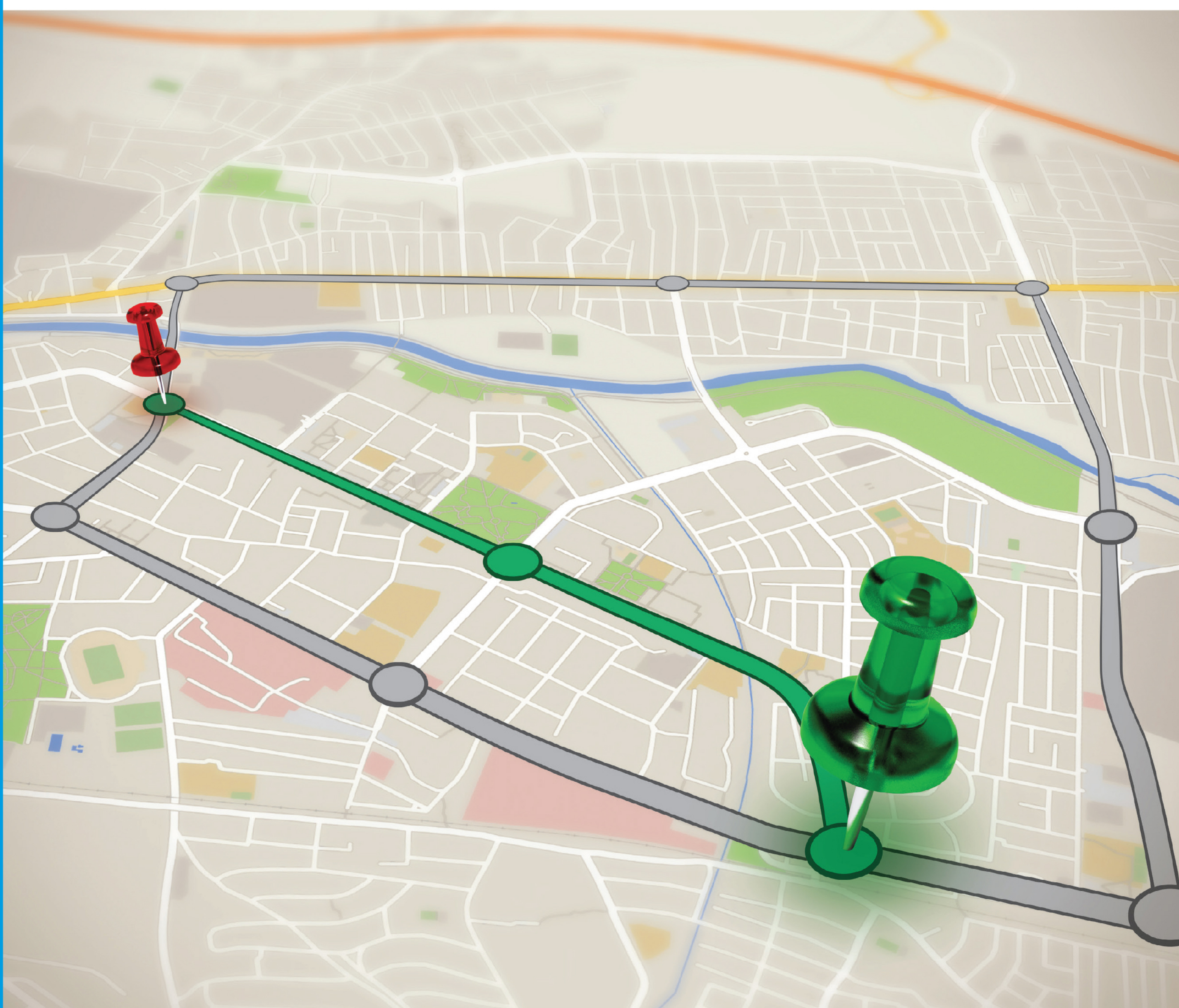
Managerial Accounting



Managerial Accounting 15e

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***Managerial Accounting*, 15e**
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Preface

Roadmap for Success

Warren/Tayler *Managerial Accounting*, *15e*, provides a sound pedagogy for giving students a solid foundation in managerial accounting. Warren/Tayler covers the fundamentals AND motivates students to learn by showing how accounting is important to businesses.

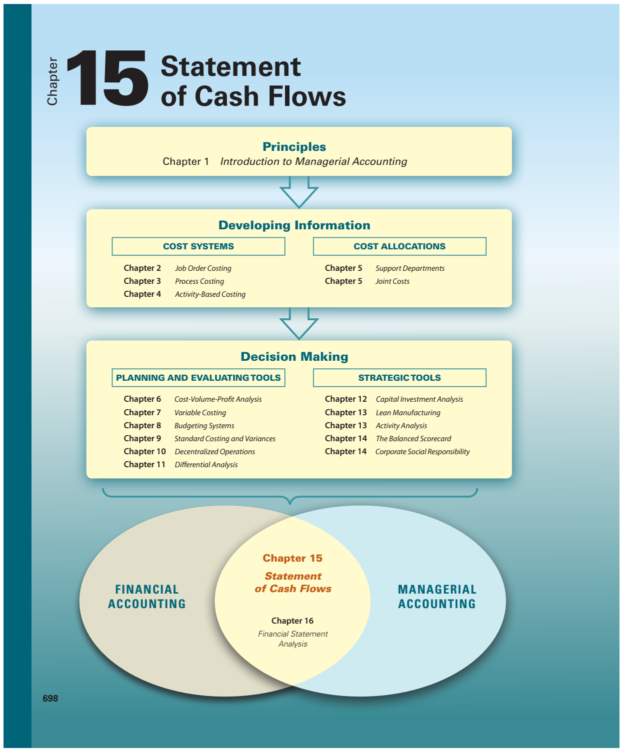
Warren/Tayler is successful because it reaches students with a combination of new and tried-and-tested pedagogy.

This revision includes a range of new and existing features that help Warren/Tayler provide students with the context to see how accounting is valuable to business. These include:

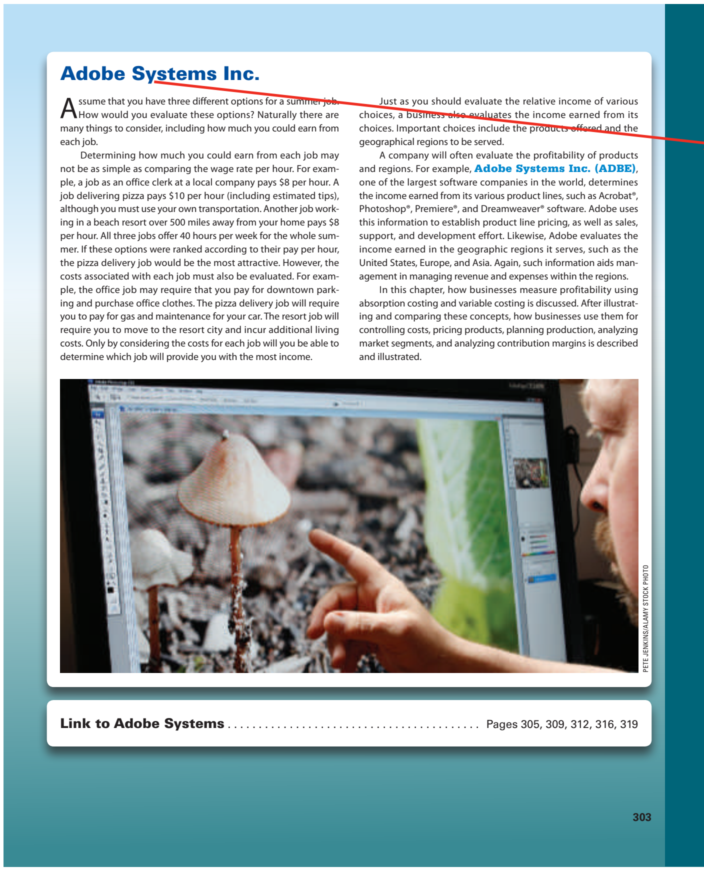
- New! Make a Decision section
- New! Pathways Challenge
- New! Certified Management Accountant (CMA®) Examination Questions

Warren/Tayler also includes a thorough grounding in the fundamentals that any business student will need to be successful. These key features include:

- Presentation style designed around the way students learn
- Updated schema
- At the start of each chapter, **a schema, or roadmap, shows students what they are going to learn and how it is connected to the larger picture**. The schema illustrates how the chapter content lays the foundation with managerial concepts and principles. Then it moves students through developing the information and ultimately into evaluating and analyzing information in order to make decisions.



- **Link to the "opening company" of each chapter** calls out examples of how the concepts introduced in the chapter are connected to the opening company. **This shows how accounting is used in the real world by real companies.**



Adobe Systems Inc.

Assume that you have three different options for a summer job. How would you evaluate these options? Naturally there are many things to consider, including how much you could earn from each job.

Determining how much you could earn from each job may not be as simple as comparing the wage rate per hour. For example, a job as an office clerk at a local company pays $8 per hour. A job delivering pizza pays $10 per hour (including estimated tips), although you must use your own transportation. Another job working in a beach resort over 500 miles away from your home pays $8 per hour. All three jobs offer 40 hours per week for the whole summer. If these options were ranked according to their pay per hour, the pizza delivery job would be the most attractive. However, the costs associated with each job must also be evaluated. For example, the office job may require that you pay for downtown parking and purchase office clothes. The pizza delivery job will require you to pay for gas and maintenance for your car. The resort job will require you to move to the resort city and incur additional living costs. Only by considering the costs for each job will you be able to determine which job will provide you with the most income.

Just as you should evaluate the relative income of various choices, a business also evaluates the income earned from its choices. Important choices include the products offered and the geographical regions to be served.

A company will often evaluate the profitability of products and regions. For example, **Adobe Systems Inc. (ADBE)**, one of the largest software companies in the world, determines the income earned from its various product lines, such as Acrobat®, Photoshop®, Premiere®, and Dreamweaver® software. Adobe uses this information to establish product line pricing, as well as sales, support, and development effort. Likewise, Adobe evaluates the income earned in the geographic regions it serves, such as the United States, Europe, and Asia. Again, such information aids management in managing revenue and expenses within the regions.

In this chapter, how businesses measure profitability using absorption costing and variable costing is discussed. After illustrating and comparing these concepts, how businesses use them for controlling costs, pricing products, planning production, analyzing market segments, and analyzing contribution margins is described and illustrated.

PETE JENKINS/ALAMY STOCK PHOTO

Link to Adobe Systems .... Pages 305, 309, 312, 316, 319

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Link to Adobe Systems In a recent absorption costing income statement, **Adobe Systems** reported (in millions) total revenue of $5,854, cost of revenue of $820, gross profit of $5,034, operating expenses of $3,541, and operating income of $1,493.

- To aid comprehension and to demonstrate the impact of transactions, **journal entries include the net effect of the transaction on the accounting equation**.

A summary of the materials requisitions is used as a basis for the journal entry recording the materials used for the month. For direct materials, this entry increases (debits) Work in Process and decreases (credits) Materials as follows:

A = L + E
\+ −

b.	Work in Process	13,000	
	Materials		13,000
	Materials requisitioned to jobs ($2,000 + $11,000).		

- Located in each chapter, **Why It Matters** shows students how accounting is important to businesses with which they are familiar. A Concept Clip icon indicates which Why It Matters features have an accompanying concept clip video in CNOWv2.

CONCEPT CLIP

Why It Matters

CONCEPT CLIP

Coca-Cola Company: Go West Young Man

A major decision early in the history of **Coca-Cola (KO)** was to expand outside of the United States to the rest of the world. As a result, Coca-Cola is known today the world over. What is revealing is how this decision has impacted the revenues and profitability of Coca-Cola across its international and North American segments. The following table shows the percent of revenues and percent of operating income from the international and North American geographic segments.

	Revenues	Operating Income
International segments	58.4%	65.6%
North American segment	41.6	34.4
Total	100%	100%

The first column shows that the international segments provide over 58% of the revenues, while North America provides almost 42% of the revenues. However, the operating income tells a different story. More than 65% of Coca-Cola's profitability comes from international segments. Given the revenue segmentation, this suggests that the international profit margins must be higher than the North American profit margin. Indeed this is the case, as can be seen in the following table:

	Profit Margin
International average	48.4%
North America	24.2%

The average profit margin for all the international segments is two times as large as the North American segment. These results reflect the heart of the Coca-Cola marketing strategy. In international markets, Coca-Cola is able to charge relatively higher prices due to high demand and less competition as compared to the North American market.

Source: The Coca-Cola Company, *Form 10-K for the Fiscal Year Ended December 31, 2017*.

- **New! Pathways Challenge** encourages students' interest in accounting and emphasizes the critical thinking aspect of accounting. A suggested answer to the Pathways Challenge is provided at the end of the chapter.

Pathways Challenge

This is Accounting!

Economic Activity

Absorption costing is required by generally accepted accounting principles (GAAP) for reporting to external stakeholders. Thus, auto manufacturers like **Ford Motor Company (F)** and **General Motors Company (GM)** use absorption costing in preparing their financial statements. Under absorption costing, fixed manufacturing costs are included in inventory. Thus, the more cars the auto companies make, the lower the fixed cost per car and the smaller the cost of goods sold. In the years preceding the U.S. financial crisis and economic downturn of 2008, Ford and General Motors produced more cars than were sold to customers.[1]

Critical Thinking/Judgment

If Ford and General Motors have high fixed costs and low variable costs, how would producing more cars affect their operating income under absorption costing? under variable costing?
If absorption costing allows companies like Ford and General Motors to change their operating income by increasing or decreasing production, why does GAAP require absorption costing?

Suggested answer at end of chapter.

Pathways Challenge

This is Accounting!

Information/Consequences

By producing more cars than were sold, **Ford (F)** and **General Motors (GM)** increased their operating income reported under absorption costing. This is because a portion of their fixed manufacturing costs were included in ending inventory rather than cost of goods sold.

Under variable costing, producing more cars would not affect operating income, because all fixed manufacturing costs are included in cost of goods sold regardless of how many cars are produced.

A reason often given for why GAAP requires absorption costing is that it focuses on operating income "over the long term." In other words, while operating income may vary from year to year, all manufacturing costs are eventually reported on the income statement as cost of goods sold or as a write-down of inventory using the lower-of-cost-or-market rule. Thus, over the life of a company, the total amount of operating income will be the same regardless of whether absorption or variable costing is used.

Suggested Answer

- To aid learning and problem solving, throughout each chapter the **Check Up Corner** exercises provide students with step-by-step guidance on how to solve problems. Problem-solving tips help students avoid common errors.

Check Up Corner 10-1 Cost Center Responsibility Measures

Delinco Tech Inc. manufactures corrosion-resistant water pumps and fluid meters. Its Commercial Products Division is organized as a cost center. The division's budget for the month ended July 31 is as follows (in thousands):

Materials	$140,000
Factory wages	77,000
Supervisor salaries	15,500
Utilities	8,700
Depreciation of plant equipment	9,000
Maintenance	3,200
Insurance	750
Property taxes	800
	$254,950

During July, actual costs incurred in the Commercial Products Division were as follows:

Materials	$152,000
Factory wages	77,800
Supervisor salaries	15,500
Utilities	8,560
Depreciation of plant equipment	9,000
Maintenance	3,025
Insurance	750
Property taxes	820
	$267,455

Prepare a budget performance report for the director of the Commercial Products Division for July.

Solution:

The report shows the budgeted costs and actual costs along with the differences.

Budget Performance Report
Director, Commercial Products Division
For the Month Ended July 31

	Actual	Budget	Over Budget	(Under) Budget
Materials	$152,000	$140,000	$12,000	
Factory wages	77,800	77,000	800	
Supervisor salaries	15,500	15,500		
Utilities	8,560	8,700		$(140)
Depreciation of plant equipment	9,000	9,000		
Maintenance	3,025	3,200		(175)
Insurance	750	750		
Property taxes	820	800	20	
	$267,455	$254,950	$12,820	$(315)

The report allows cost center managers to focus on areas of significant differences.

Each difference is classified as *over* budget or *under* budget.

Check Up Corner

- **Analysis for Decision Making** highlights how companies use accounting information to make decisions and evaluate their business. This provides students with context of why accounting is important to companies.

Analysis for Decision Making

Objective 6
Describe and illustrate the use of staffing budgets for nonmanufacturing businesses.

Nonmanufacturing Staffing Budgets

The budgeting illustrated in this chapter is similar to budgeting used for nonmanufacturing businesses. However, many nonmanufacturing businesses often do not have direct materials purchases budgets, direct labor cost budgets, or factory overhead cost budgets. Thus, the budgeted income statement is simplified in many nonmanufacturing settings.

A primary budget in nonmanufacturing businesses is the labor, or staffing, budget. This budget, which is highly flexible to service demands, is used to manage staffing levels. For example, a theme park will have greater staffing in the summer vacation months than in the fall months. Likewise, a retailer will have greater staffing during the holidays than on typical weekdays.

To illustrate, Concord Hotel operates a hotel in a business district. The hotel has 150 rooms that average 120 guests per night during the weekdays and 50 guests per night during the weekend. The housekeeping staff is able to clean 10 rooms per employee. The number of housekeepers required for an average weekday and weekend is determined as follows:

	Weekday	Weekend
Number of guests per day	120	50
Rooms per housekeeper	÷ 10	÷ 10
Number of housekeepers per day	12	5

If each housekeeper is paid $15 per hour for an eight-hour shift per day, the annual budget for the staff is as follows:

	Weekday	Weekend	Total
Number of housekeepers per day	12	5	
Hours per shift	× 8	× 8	
Days per year	× 260*	× 104**	
Number of hours per year	24,960	4,160	
Rate per hour	× $15	× $15	
Housekeeping staff annual budget	$374,400	$62,400	$436,800

* 52 weeks × 5 days
** 52 weeks × 2 days

The budget can be used to plan and manage the staffing of the hotel. For example, if a wedding were booked for the weekend, the budgeted increase in staffing could be compared with the increased revenue from the wedding to verify the profit plan.

- **Make a Decision** in the end-of-chapter material gives students a chance to analyze real-world business decisions.

Make a Decision
Cost-Volume-Profit Analysis for Service Companies

MAD 6-1 Analyze Global Air's cost-volume-profit relationships **Obj. 6**

Global Air is considering a new flight between Atlanta and Los Angeles. The average fare per seat for the flight is $760. The costs associated with the flight are as follows:

Fixed costs for the flight:	
Crew salaries	$ 5,000
Operating costs	50,000
Aircraft depreciation	25,000
Total	$80,000
Variable costs per passenger:	
Passenger check-in	$ 20
Operating costs	100
Total	$120

The airline estimates that the flight will sell 175 seats.

a. Determine the break-even number of passengers per flight.
b. Based on your answer in (a), should the airline add this flight to its schedule?
c. How much profit should each flight produce?
d. What additional issues might the airline consider in this decision?

MAD 6-2 Analyze Ocean Escape Cruise Lines' cost-volume-profit relationships **Obj. 6**

Ocean Escape Cruise Lines has a boat with a capacity of 1,200 passengers. An eight-day ocean cruise involves the following costs:

Crew	$240,000
Fuel	60,000
Fixed operating costs	800,000

The variable costs per passenger for the eight-day cruise include the following:

Meals	$900
Variable operating costs	400

The price of the cruise is $2,400 per passenger.

a. Determine the break-even number of passengers for the eight-day cruise.
b. Assume 900 passengers booked the cruise. What would be the profit or loss for the cruise?
c. Assume the cruise was booked to capacity. What would be the profit or loss for the cruise?
d. If the cruise cannot book enough passengers to break even, how might the cruise line respond?

- At the end of each chapter, **Let's Review** is a new chapter summary and self-assessment feature that is designed to help busy students prepare for an exam. It includes a summary of each learning objective's key points, key terms, multiple-choice questions, exercises, and a sample problem that students may use to practice.
- Sample multiple-choice questions allow students to practice with the type of assessments they are likely to see on an exam.
- Short exercises and a longer problem allow students to apply their knowledge.
- **Answers** provided at the end of the Let's Review section let students check their knowledge immediately.
- **Take It Further** in the end-of-chapter activities allows instructors to assign other special activities related to ethics, communication, and teamwork.
- **NEW! Certified Management Accountant (CMA®) Examination Questions** help students prepare for the CMA exam so they can earn CMA certification.

CENGAGENOWv2

CengageNOWv2

CengageNOWv2 is a powerful course management and online homework resource that provides control and customization to optimize the student learning experience. Included are many proven resources, such as algorithmic activities, a test bank, course management tools, reporting and assessment options, and much more.

NEW! Excel Online

Cengage and Microsoft have partnered in CNOWv2 to provide students with a uniform, authentic Excel experience. It provides instant feedback, built-in video tips, and easily accessible spreadsheet work. These features allow you to spend more time teaching college accounting applications and less time troubleshooting Excel.

These new algorithmic activities offer pre-populated data directly in Microsoft Excel Online. Each student receives his or her own version of the problem to perform the necessary data calculations in Excel Online. Their work is constantly saved in Cengage cloud storage as a part of homework assignments in CNOWv2. It's easily retrievable so students can review their answers without cumbersome file management and numerous downloads/uploads.

Motivation: Set Expectations and Prepare Students for the Course

CengageNOWv2 helps motivate students and get them ready to learn by reshaping their misconceptions about the introductory accounting course and providing a powerful tool to engage students.

CengageNOWv2 Start-Up Center

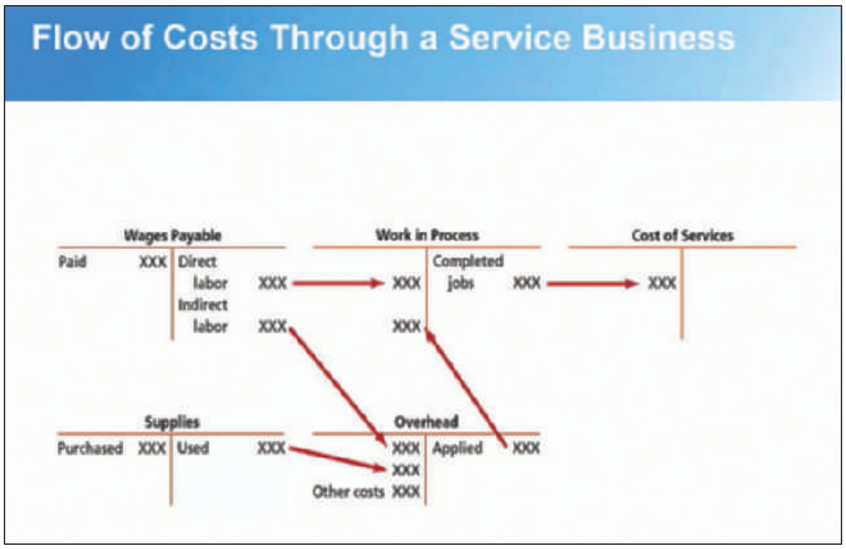
Students are often surprised by the amount of time they need to spend outside of class working through homework assignments in order to succeed. The CengageNOWv2 Start-Up Center will help students identify what they need to do and where they need to focus in order to be successful with a variety of new resources.

- What Is Accounting? Module ensures students understand course expectations and how to be successful in the introductory accounting course. This module consists of two assignable videos: *Introduction to Accounting* and *Success Strategies*. The Student Advice Videos offer advice from real students about what it takes to do well in the course.
- Math Review Module, designed to help students get up to speed with necessary math skills, includes math review assignments and Show Me How math review videos to ensure that students have an understanding of basic math skills.
- How to Use CengageNOWv2 Module focuses on learning accounting, not on a particular software system. Quickly familiarize your students with CengageNOWv2 and direct them to all of its built-in student resources.

Motivation: Prepare Them for Class

With all the outside obligations accounting students have, finding time to read the textbook before class can be a struggle. Point students to the key concepts they need to know before they attend class.

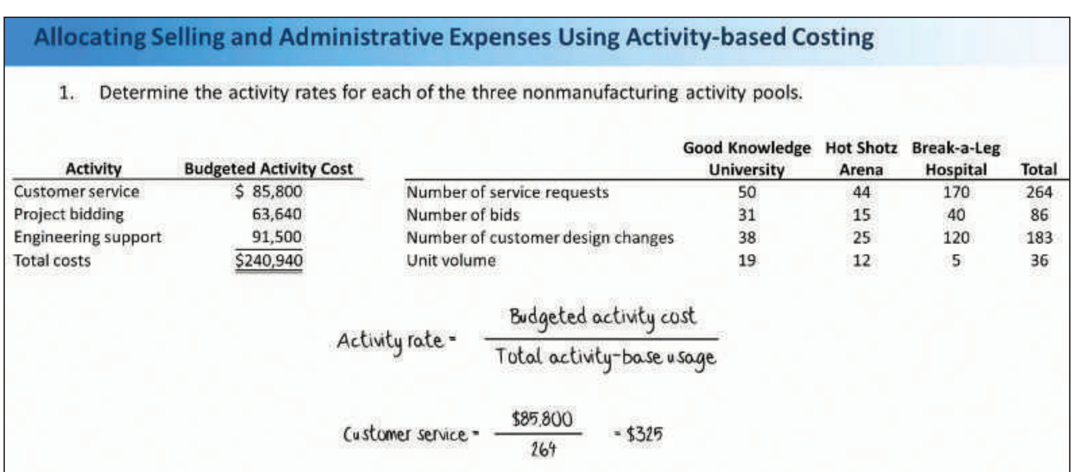
- **Video: Tell Me More.** Short Tell Me More lecture activities explain the core concepts of the chapter through an engaging auditory and visual presentation. Available either on a stand-alone basis or as an assignment, they are ideal for all class formats—flipped model, online, hybrid, or face-to-face.



Provide Help Right When Students Need It

The best way to learn accounting is through practice, but students often get stuck when attempting homework assignments on their own.

- **Video: Show Me How.** Created for the most frequently assigned end-of-chapter items, Show Me How problem demonstration videos provide a step-by-step model of a similar problem. Embedded tips help students avoid common mistakes and pitfalls.



SHOW ME HOW

Help Students Go Beyond Memorization to True Understanding

Students often struggle to understand how concepts relate to one another. For most students, an introductory accounting course is their first exposure to both business transactions and the accounting system. While these concepts are already difficult to master individually, their combination and interdependency in the introductory accounting course often pose a challenge for students.

- **Mastery Problems.** Mastery Problems enable you to assign problems and activities designed to test students' comprehension and mastery of difficult concepts.

MindTap eReader

The MindTap eReader for Warren/Tayler's *Managerial Accounting* is the most robust digital reading experience available. Hallmark features include:

- Fully optimized for the iPad.
- Note taking, highlighting, and more.
- Embedded digital media.
- The MindTap eReader also features ReadSpeaker®, an online text-to-speech application that vocalizes, or "speech-enables," online educational content. This feature is ideally suited for both instructors and learners who would like to listen to content instead of (or in addition to) reading it.

Cengage Unlimited

Cengage Unlimited is a first of-its-kind digital subscription designed specifically to lower costs. Students get total access to everything Cengage has to offer on demand—in one place. That's 20,000 eBooks, 2,300 digital learning products, and dozens of study tools across 70 disciplines and over 675 courses. Currently available in select markets. Details at **www.cengage.com/unlimited**.

New to This Edition

In all chapters, the following improvements have been made:

- Chapter schemas revised throughout.
- *Link to* page references added at the beginning of the chapter allow students to easily locate the ties to the opening company throughout the chapter.
- New learning objective for Analysis for Decision Making.
- Stock ticker symbol has been inserted for all real-world (publicly listed) companies. This helps students to use financial websites to locate real company data.
- New Pathways Challenge feature added, consistent with the work of the Pathways Commission. This feature emphasizes the critical thinking aspect of accounting. A Suggested Answer to the Pathways Challenge is provided at the end of the chapter.
- New Make a Decision section at the end of the Analysis for Decision Making directs students and instructors to the real-world company end-of-chapter materials related to Analysis for Decision Making. Also, the continuing company analysis is identified and referenced in this Make a Decision section.
- New items have been added to the Take It Further section at the end of the chapter.
- New Certified Management Accountant (CMA®) Examination Questions help students prepare for the CMA exam so they can earn CMA certification.

Chapter 1

- "Managerial Accounting in the Organization" section significantly revised to discuss horizonal and vertical business units; McAfee, Inc., is used as an illustration.
- New Why It Matters features the IMA and CMA.
- New Why It Matters features vertical and horizontal functions for service companies.
- Discussion of sustainability and accounting moved to new Chapter 14.

Chapter 2

- Discussion of sustainability and accounting moved to new Chapter 14.
- Added one new Analysis for Decision Making item.

Chapter 3

- Why It Matters feature (Sustainable Papermaking) moved to Chapter 14.
- Lean manufacturing discussion with related homework items moved to Chapter 13.
- Added one new Analysis for Decision Making item.

Chapter 4

- Added Learning Objective 7: Describe and illustrate the use of activity-based costing information in decision making.

Chapter 5—NEW Chapter

- Learning Objectives:
  - Describe support departments and support department costs.
  - Describe the allocation of support department costs using a single plantwide rate, multiple department rates, and activity-based costing.
  - Allocate support department costs to production departments using the direct method, sequential method, and reciprocal services method.
  - Describe joint products and joint costs.
  - Allocate joint costs using the physical units, weighted average, market value at split-off, and net realizable value methods.
  - Describe and illustrate the use of support department and joint cost allocations to evaluate the performance of production managers.

Chapter 6

- Added one new Analysis for Decision Making item.

Chapter 7

- Contribution margin analysis deleted from chapter.
- Revenue variance added as an appendix to Chapter 9.

Chapter 8

- Added one new Analysis for Decision Making item.

Chapter 9

- Added new appendix on revenue variances.
- Nonfinancial performance measures (previously Learning Objective 6) moved to new Chapter 14.
- Added four new revenue variance exercises.
- Added one new Analysis for Decision Making item.

Chapter 10

- Balanced scorecard discussion moved to new Chapter 14.
- Added one new Analysis for Decision Making item.

Chapter 11

- Total cost and variable cost concepts for product pricing were moved to an end-of-chapter appendix.
- Added one new Make a Decision item.

Chapter 12

- Analysis for Decision Making on capital investment for sustainability has been moved to new Chapter 14.
- Added new Analysis for Decision Making entitled "Uncertainty: Sensitivity and Expected Value Analyses."
- Added six new Make a Decision items.

Chapter 13

- Added Objective 4: Describe and illustrate the use of lean principles and activity analysis in a service or administrative setting.

Chapter 14—NEW chapter

- Learning objectives:
  - Describe the concept of a performance measurement system.
  - Describe and illustrate the basic elements of a balanced scorecard.
  - Describe and illustrate the balance scorecard, including the use and impact of strategy maps, measure maps, strategic learning, scorecard cascading, and cognitive biases.
  - Describe corporate social responsibility (CSR), including methods of measuring and encouraging social responsibility using the balanced scorecard.
  - Use capital investment analysis to evaluate CSR projects.

Acknowledgements

The many enhancements to this edition of *Managerial Accounting* are the direct result of reviews, surveys, and focus groups with instructors at institutions across the country. We would like to take this opportunity to thank those who have helped us better understand the challenge of the financial accounting course and provided valuable feedback on our content and digital assets.

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Dr. Carl S. Warren is Professor Emeritus of Accounting at the University of Georgia, Athens. Dr. Warren has taught classes at the University of Georgia, University of Iowa, Michigan State University, and University of Chicago. He has focused his teaching efforts on principles of accounting and auditing. Dr. Warren received his Ph.D. from Michigan State University and his BBA and MA from the University of Iowa. During his career, Dr. Warren published numerous articles in professional journals, including *The Accounting Review, Journal of Accounting Research, Journal of Accountancy, The CPA Journal*, and *Auditing: A Journal of Practice and Theory*. Dr. Warren has served on numerous committees of the American Accounting Association, the American Institute of Certified Public Accountants, and the Institute of Internal Auditors. He has consulted with numerous companies and public accounting firms. His outside interests include handball, golfing, skiing, backpacking, motorcycling, and fly-fishing. He also enjoys interacting with his five grandchildren, Bella and Mila (twins), Jeremy, and Brooke and Robbie (twins).

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Gibson Guitars

Gibson guitars have been used by musical legends over the years, including B.B. King, Chet Atkins, Brian Wilson (Beach Boys), Jimmy Page (Led Zeppelin), Jackson Browne, John Fogerty, Jose Feliciano, Miranda Lambert, Sheryl Crow, and Wynonna Judd. For example, Sheryl Crow has used her 1964 Gibson Country Western guitar in all of her recordings.

Known for its quality, **Gibson Guitars** celebrated its 120th anniversary in 2014. Staying in business for over 120 years requires a thorough understanding of how to manufacture high-quality guitars.[1] In addition, it requires knowledge of how to account for the costs of making guitars. For example, Gibson needs cost information to answer the following questions:

- What should be the selling price of its guitars?
- How many guitars does it have to sell in a year to cover its costs and earn a profit?
- How many employees should the company have working on each stage of the manufacturing process?
- How would purchasing automated equipment affect the costs of its guitars?

This chapter introduces managerial accounting concepts that are useful in addressing these questions. This chapter begins by describing managerial accounting and its relationship to financial accounting. Following this overview, the management process is described along with the role of managerial accounting. Finally, characteristics of managerial accounting reports, managerial accounting terms, and uses of managerial accounting information are described and illustrated.

Sources: http://www.gibson.com/Gibson/History.aspx. Chris Kornelis, *The Wall Street Journal*, "How Sheryl Crow Finally Broke Her Starbucks Habit," May 24, 2017.

FABIO PAGANI/SHUTTERSTOCK.COM

Link to Gibson Guitars .... Pages 4, 5, 6, 7, 9, 11, 16

[1] In May 2016, Gibson Guitars filed for bankruptcy. Gibson blamed its financial woes on the debt it had incurred by acquiring companies that produced headphones, turntables, and speakers. After satisfying its creditors and reorganizing, Gibson plans to focus its future operations on its core competency—the manufacture of guitars.

What's Covered

Introduction to Managerial Accounting

Role of Managerial Accounting
- Differences with Financial Accounting (Obj. 1)
- Management Organization (Obj. 1)
- Management Process (Obj. 1)
- Uses of Managerial Accounting Information (Obj. 1)

Manufacturing Operations
- Nature of Manufacturing (Obj. 2)
- Direct and Indirect Costs (Obj. 2)
- Manufacturing Costs (Obj. 2)

Manufacturing Financial Statements
- Balance Sheet (Obj. 3)
- Income Statement (Obj. 3)

Learning Objectives

Obj. 1 Describe managerial accounting, including its differences with financial accounting, its place in the organization, and its uses.

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

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

Analysis for Decision Making

Obj. 4 Describe and illustrate utilization rates in evaluating performance for service companies.

Objective 1
Describe managerial accounting, including its differences with financial accounting, its place in the organization, and its uses.

Managerial Accounting

Managers make numerous decisions during the day-to-day operations of a business and in planning for the future. Managerial accounting provides much of the information used for these decisions.

Some examples of managerial accounting information along with the chapter in which it is described and illustrated follow:

- Classifying manufacturing and other costs and reporting them in the financial statements (Chapter 1)
- Determining the cost of manufacturing a product or providing a service (Chapters 2, 3, 4, and 5)
- Evaluating the impact of cost allocation and activity-based costing (Chapters 4, 5)
- Estimating the behavior of costs for various levels of activity and assessing cost-volume-profit relationships (Chapter 6)
- Evaluating operating performance using cost behavior relationships (Chapter 7)
- Planning for the future by preparing budgets (Chapter 8)
- Evaluating manufacturing costs by comparing actual with expected results (Chapter 9)
- Evaluating decentralized operations by comparing actual and budgeted costs as well as computing various measures of profitability (Chapter 10)
- Evaluating special decision-making situations by comparing differential revenues and costs, pricing products, and managing bottlenecks (Chapter 11)
- Evaluating alternative proposals for long-term investments in fixed assets (Chapter 12)
- Planning operations using principles of lean manufacturing and activity analysis (Chapter 13)
- Evaluating company performance using the balanced scorecard and corporate responsibility metrics (Chapter 14)

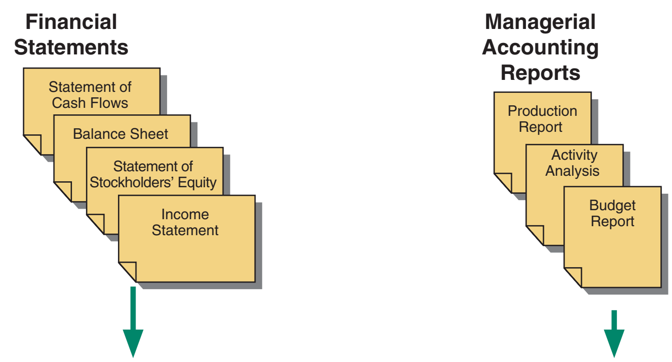
Link to Gibson Guitars

Orville Gibson started producing guitars in 1894 in Kalamazoo, Michigan. He produced guitars and mandolins based upon the arch-top design of violins.

Differences Between Managerial and Financial Accounting

Accounting information is often classified into two types: financial and managerial. Exhibit 1 shows the relationship between financial accounting and managerial accounting.

Exhibit 1
Financial Accounting and Managerial Accounting



	Financial Statements	Managerial Accounting Reports
Users of Information	External users and company management	Management
Nature of Information	Objective	Objective and subjective
Guidelines for Preparation	Prepared according to GAAP	Prepared according to management needs
Timeliness of Reporting	Prepared at fixed intervals	Prepared at fixed intervals and on an as-needed basis
Focus of Reporting	Company as a whole	Company as a whole or segment

Financial accounting information is reported at fixed intervals (monthly, quarterly, yearly) in general-purpose financial statements. These financial statements—the income statement, statement of stockholders' equity, balance sheet, and statement of cash flows—are prepared according to generally accepted accounting principles (GAAP). These statements are used by external users such as the following:

- Shareholders
- Creditors
- Government agencies
- The general public

Gibson Mandolin-Guitar Mfg. Co., Ltd. was formed in 1902 in Kalamazoo, Michigan, with the support of five investors.

Link to Gibson Guitars

Managers of a company also use general-purpose financial statements. For example, in planning future operations, managers often begin by evaluating the current income statement and statement of cash flows.

Managerial accounting information is designed to meet the specific needs of a company's management. This information includes the following:

- Historical data, which provide *objective measures* of past operations
- Estimated data, which provide *subjective estimates* about future decisions

Management uses both types of information in directing daily operations, planning future operations, and developing business strategies.

Unlike the financial statements prepared in financial accounting, managerial accounting reports do *not* always have to be:

- Prepared according to generally accepted accounting principles (GAAP). This is because GAAP may not always be relevant to the specific decision-making needs of management.

- Prepared at fixed intervals (monthly, quarterly, yearly). Although some management reports are prepared at fixed intervals, most reports are prepared as management needs the information.
- Prepared for the business as a whole. Most management reports are prepared for products, projects, sales territories, or other segments of the company.

Link to Gibson Guitars

Chicago Musical Instrument Company purchased **Gibson** in 1944.

Managerial Accounting in the Organization

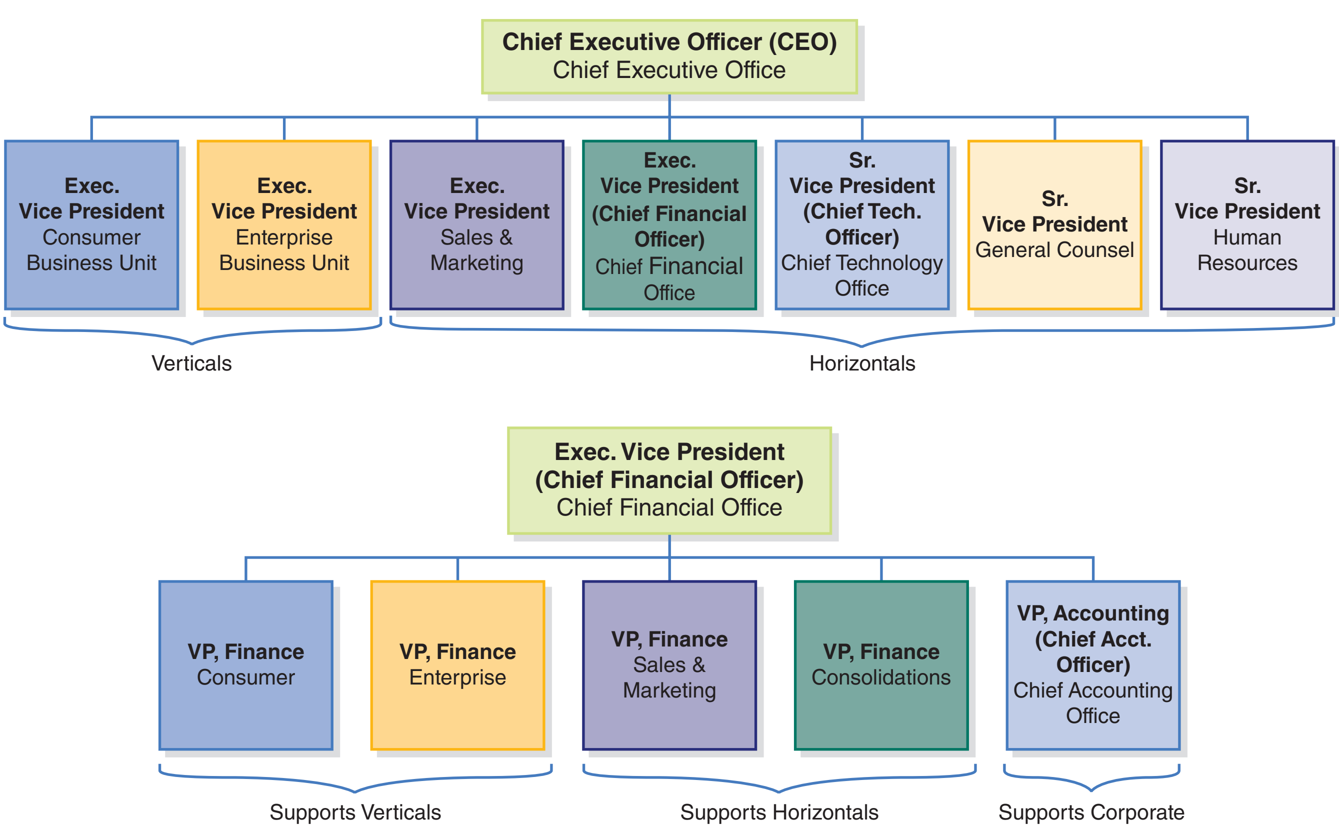
While no two company structures are identical, most large companies are organized in terms of "verticals" and "horizontals." **Verticals** are sometimes referred to as *business units*, because they are often structured as separate businesses within the parent company. These verticals normally develop products that are sold directly to customers. Verticals prepare their own income statements, also referred to as *profit and loss (P&L) statements*, which report their ongoing performance and profitability.

Horizontals are departments within the company that are not responsible for developing products. The role of horizontals is to provide services to the various verticals and other horizontals. As such, horizontals do not report profit and loss (P&L) statements. Marketing, human resources, information technology, legal, facilities, accounting, and finance are normally horizontal departments within a company.

At **McAfee, Inc. (MFE)**, a cyber security provider, the Chief Financial Office functions as a horizontal department that serves McAfee's two main verticals: the Consumer Business Unit and the Enterprise Business Unit. Rather than hire and train separate accounting and finance departments within each vertical, it is more efficient to centralize this function as a horizontal department.

To illustrate, a partial organizational chart of McAfee's Chief Executive Office and Chief Financial Office are shown in Exhibit 2.

Exhibit 2 Partial Organization Chart for McAfee



As shown in Exhibit 2, the **chief financial officer (CFO)** is an executive vice president, who, along with leadership of the other verticals and horizontals, reports directly to the **chief executive officer (CEO)**. Each of the two verticals (Consumer Business Unit and Enterprise Business Unit) has a "VP of Finance" that reports to the CFO. In addition, the Sales & Marketing and Consolidations horizontals have their own "VP of Finance" that reports to the CFO.[2] The "VP of Accounting" is called the **chief accounting officer (CAO)** and oversees technical accounting, accounting policy, credit, collections, tax, treasury, and internal audit at McAfee. The functions reporting to the CFO sometimes are grouped together and are referred to as *corporate finance*.

Finance and accounting professionals often work within verticals and other horizontals managing budgets, tracking key metrics, and generating accounting reports. Doing so requires coordinating and interacting closely with operational employees. As a result, the functions of these professionals are sometimes referred to as *operations finance* or as *financial planning and analysis*. Although finance and accounting professionals often work within verticals and other horizontals, they do not normally report directly to the heads of those units or departments. Instead, they report to an accounting and finance VP, who in turn reports to the CFO. This allows the accounting and finance professionals to maintain their independence.

At some companies, the manager of the accounting function of a vertical (business unit) is referred to as the **controller**. At smaller companies, controller may be used to refer to the chief financial officer. At still other companies, controller may be used to signify rank within the accounting and finance function. For example, the head accountant of a manufacturing facility at **Deere & Company (DE)** is called a controller. In contrast, at **Intel Corporation (INTC)**, accounting and finance employees start as *analysts,* are promoted to *senior analysts*, then to *managers*, and then to *controllers*.

As discussed above, few accounting and finance professionals are called "managerial accountants." However, the work of accounting and finance professionals requires a thorough knowledge and understanding of managerial accounting, which, in turn, provides a valuable foundation for advancing to senior management positions.

One of **Gibson**'s most influential managers was Ted McCarty, who was the company president from 1950–1966. During this period, Gibson was known for its innovations. For example, in 1954, McCarty invented the tune-o-matic bridge with adjustable saddles.

Link to Gibson Guitars

Why It Matters

Certified Management Accountants

The Institute of Management Accountants (IMA®) is a worldwide association of over 100,000 accounting and finance professionals across more than 140 countries. The IMA works to support the management accounting profession with programs involving continuing education, certification, networking, ethics, research, and scholarships. In the United States, there are over 1.3 million accountants and auditors, most of whose work involves management accounting. The projected growth rate of the accounting profession over the coming decade is 11%, which is 4% higher than the projected average growth rate of all professions.

To meet the growing needs of the accounting profession, IMA offers the Certified Management Accountant (CMA) certificate. The CMA is not a state or local certificate, but a globally recognized credential. The CMA is earned by passing a two-part examination. Part 1 covers financial reporting, planning and budgeting, performance management, cost management, and internal controls. Part 2 covers financial statement analysis, corporate finance, decision analysis, risk management, investment decisions, and professional ethics. Those passing the examination have proven that they have mastered the skills required to oversee the management accounting and finance functions within a company or other entity. For more information, visit the IMA's website at www.imanet.org.

Source: ***U.S. Bureau of Labor Statistics:*** www.bls.gov/ooh/business-and-*financial/accountants-and-auditors.htm#tab-6.*

[2] Consolidations supports the aggregation of financial statements from other units.

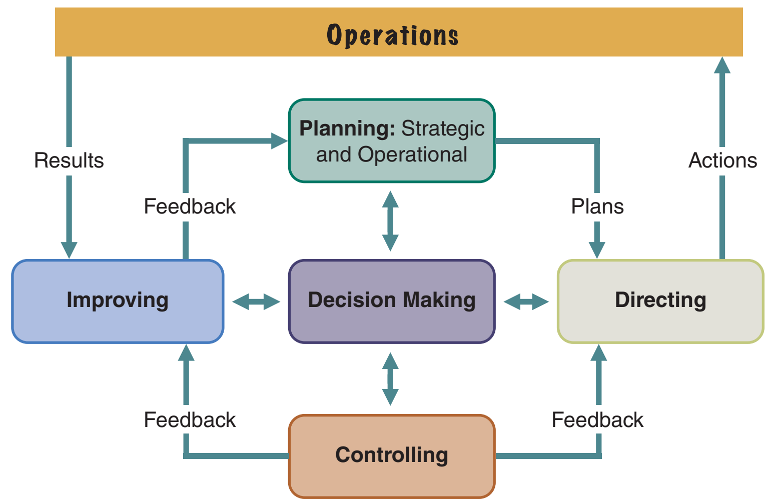
The Management Process

Managerial accounting supports management and the management process. The **management process** has the following five basic phases, as shown in Exhibit 3:

- Planning
- Directing
- Controlling
- Improving
- Decision making

As Exhibit 3 illustrates, the five phases interact with one another.

Exhibit 3
The Management Process



Planning Management uses **planning** in developing the company's **objectives (goals)** and translating these objectives into courses of action. For example, a company may set an objective to increase market share by 15% by introducing three new products. The actions to achieve this objective might be as follows:

- Increase the advertising budget
- Open a new sales territory
- Increase the research and development budget

Planning may be classified as follows:

- **Strategic planning**, which is developing long-term actions to achieve the company's objectives. These long-term actions are called **strategies**, which often involve periods of 5 to 10 years.

Why It Matters

Vertical and Horizontal Functions for Service Companies

Functions that are normally performed by vertical and horizontal units may be applied to service companies. Some examples are as follows:

Service Industry	Vertical Function	Horizontal Function
Airline	Crew, baggage handling, and gate staff	Information systems, accounting, human resources
Hotel	Housekeeping and reception staff	Maintenance, hotel manager, grounds
Hospital	Doctors, nurses, other caregivers	Admissions, records, billing
Banking	Tellers, loan officers, trust officers, and brokers	Branch manager, information systems
Telecommunications	Sales, customer service, and customer installation staff	Information systems, regional management, and network maintenance

- **Operational planning**, which develops short-term actions for managing the day-to-day operations of the company.

Directing The process by which managers run day-to-day operations is called **directing**. An example of directing is a production supervisor's efforts to keep the production line moving without interruption (downtime). A credit manager's development of guidelines for assessing the ability of potential customers to pay their bills is also an example of directing.

Controlling Monitoring operating results and comparing actual results with the expected results is **controlling**. This **feedback** allows management to isolate areas for further investigation and possible remedial action. It may also lead to revising future plans. This philosophy of controlling by comparing actual and expected results is called **management by exception**.

Improving Feedback is also used by managers to support continuous process improvement. **Continuous process improvement** is the philosophy of continually improving employees, business processes, and products. The objective of continuous improvement is to eliminate the *source* of problems in a process. In this way, the right products (services) are delivered in the right quantities at the right time.

Decision Making Inherent in each of the preceding management processes is **decision making**. In managing a company, management must continually decide among alternative actions. For example, in directing operations, managers must decide on an operating structure, training procedures, and staffing of day-to-day operations.

Managerial accounting supports managers in all phases of the management process. For example, accounting reports comparing actual and expected operating results help managers plan and improve current operations. Such a report might compare the actual and expected costs of defective materials. If the cost of defective materials is unusually high, management might decide to change suppliers.

Gibson struggled financially from 1966–1986. The company was purchased and sold several times and experienced declining sales.

Link to Gibson Guitars

Ethics: Do It!

Environmental Managerial Accounting

Throughout the last decade, environmental issues have become an increasingly important part of the business environment for most companies. Companies and managers must now consider the environmental impact of their business decisions in the same way that they would consider other operational issues. To help managers make sound business decisions, the emerging field of environmental management accounting focuses on computing the environmental-related costs of business decisions. Environmental managerial accountants evaluate a variety of issues such as the volume and level of emissions, the estimated costs of different levels of emissions, and the impact that environmental costs have on product cost. Managers use these results to consider the environmental effects of their business decisions.

Uses of Managerial Accounting Information

As mentioned earlier, managerial accounting provides information and reports for managers to use in operating a business. Some examples of how managerial accounting could be used by a guitar manufacturer include the following:

- The cost of manufacturing each guitar could be used to determine its selling price.
- Comparing the costs of guitars over time can be used to monitor and control costs.
- Performance reports could be used to identify any large amounts of scrap or employee downtime. For example, large amounts of unusable wood (scrap) after the cutting process should be investigated to determine the underlying cause. Such scrap may be caused by saws that have not been properly maintained.