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# MANAGERIAL ACCOUNTING

TOOLS FOR BUSINESS DECISION MAKING

SIXTH EDITION



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# MANAGERIAL ACCOUNTING

TOOLS FOR BUSINESS DECISION MAKING  
SIXTH EDITION

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and Donald E. Kieso, PhD, CPA  
Managerial Accounting, Sixth Edition

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# From the Authors

Dear Student,

**Why This Course?** Remember your biology course in high school? Did you have one of those “invisible man” models (or maybe something more high-tech than that) that gave you the opportunity to look “inside” the human body? This accounting course offers something similar: To understand a business, you have to understand the financial insides of a business organization. A managerial accounting course will help you understand the essential financial components of businesses. Whether you are looking at a large multinational company like *Microsoft* or *Starbucks* or a single-owner software consulting business or coffee shop, knowing the fundamentals of managerial accounting will help you understand what is happening. As an employee, a manager, an investor, a business owner, or a director of your own personal finances—any of which roles you will have at some point in your life—you will make better decisions for having taken this course.

**Why This Book?** Hundreds of thousands of students have used this textbook. Your instructor has chosen it for you because of its trusted reputation. The authors have worked hard to keep the book fresh, timely, and accurate.

“Whether you are looking at a large multinational company like Microsoft or Starbucks or a single-owner software consulting business or coffee shop, knowing the fundamentals of managerial accounting will help you understand what is happening.”

This textbook contains features to help you learn best, whatever your learning style. To understand what your learning style is, spend about 10 minutes to take the learning style quiz at the book’s companion website. Then, look at page xi for how you can apply an understanding of your learning style to this course. When you know more about your own learning style, browse through pages xii–xiii. These pages describe the main features you will find in this textbook and explain their purpose.

**How To Succeed?** We’ve asked many students and many instructors whether there is a secret for success in this course. The nearly unanimous answer turns out to be not much of a secret: “Do the homework.” This is one course where doing is learning, and the more time you spend on the homework assignments—using the various tools that this textbook provides—the more likely you are to learn the essential concepts, techniques, and methods of accounting. Besides the textbook itself, the textbook companion website offers various support resources.

Good luck in this course. We hope you enjoy the experience and that you put to good use throughout a lifetime of success the knowledge you obtain in this course. We are sure you will not be disappointed.

**Jerry J. Weygandt**  
**Paul D. Kimmel**  
**Donald E. Kieso**

# Your Team for Success in Accounting



Wiley Accounting is your partner in accounting education. We want to be the first publisher you think of when it comes to quality content, reliable technology, innovative resources, professional training, and unparalleled support for your accounting classroom.

Your Wiley Accounting Team for Success is comprised of three distinctive advantages that you won't find with any other publisher:

- Author Commitment
- Wiley Faculty Network
- WileyPLUS



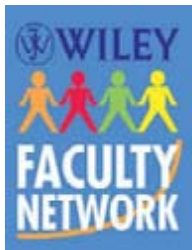
## **Author Commitment:**

*A Proven Author Team  
of Inspired Teachers*

The Team for Success authors bring years of industry and academic experience to the development of each textbook that relates accounting concepts to real-world experiences. This cohesive team brings continuity of writing style, pedagogy, and problem material to each course from Principles to Intermediate so you and your students can seamlessly progress from introductory through advanced courses in accounting.

The authors understand the mindset and time limitations of today's students. They demonstrate an intangible ability to effectively deliver complex information so it is clear and understandable while staying one step ahead of emerging global trends in business.





### **Wiley Faculty Network:**

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The Wiley Faculty Network (WFN) is a global group of seasoned accounting professionals who share best practices in teaching with their peers. Our Virtual Guest

Lecture Series provides the opportunity you need for professional development in an online environment that is relevant, convenient, and collaborative. The quality of these seminars and workshops meets the strictest standards, so we are proud to be able to offer valuable CPE credits to attendees.

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The *WileyPLUS* Account Managers understand the time constraints of busy instructors who want to provide the best resources available to their students with minimal headaches and planning time. They know how intimidating new software can be, so they are sure to make the transition easy and painless.

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Your success as an educator directly correlates to student success, and that's our goal. The Wiley Accounting Team for Success truly strives for YOUR success! Partner with us today!

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# Author Commitment

## Collaboration. Innovation. Experience.

After decades of success as authors of textbooks like this one, Jerry Weygandt, Paul Kimmel, and Don Kieso understand that teaching accounting goes beyond simply presenting data. The authors are truly effective because they know that teaching is about telling compelling stories in ways that make each concept come to life.

### Teacher / Author / Professional

Through their textbooks, supplements, online learning tools, and classrooms, these authors have developed a comprehensive pedagogy that engages students in learning and faculty with teaching.

These authors collaborate throughout the entire process. The end result is a true collaboration where each author brings his individual experience and talent to the development of every paragraph, page, and chapter, thus creating a truly well-rounded, thorough view on any given accounting topic.

### Many Ways in One Direction

Our **Team for Success** has developed a teaching system that addresses every learning style. Each year brings new insights, feedback, ideas, and improvements on how to deliver the material to every student with a passion for the subject in a format that gives them the best chance to succeed.

The key to the team's approach is in understanding that, just as there are many different ways to learn, there are also many different ways to teach.

### In Their Own Words

Visit the Wiley **Team for Success** website to hear from the authors first-hand as they discuss their teaching styles, collaboration, and the future of accounting.

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# Author Commitment



## Jerry Weygandt

Jerry J. Weygandt, PhD, CPA, is Arthur Andersen Alumni Emeritus Professor of Accounting at the University of Wisconsin—Madison. He holds a Ph.D. in accounting from the University of Illinois. Articles by Professor Weygandt have appeared in the *Accounting Review*, *Journal of Accounting Research*, *Accounting Horizons*, *Journal of Accountancy*, and other academic and professional journals. These articles have examined such financial reporting issues as accounting for price-level adjustments, pensions, convertible securities, stock option contracts, and interim reports. Professor Weygandt is author of other accounting and financial reporting books and is a member of the American Accounting Association, the American Institute of Certified Public Accountants, and the Wisconsin Society of Certified Public Accountants. He has served on numerous committees of the American Accounting Association and as a member of the editorial board of the *Accounting Review*; he also has served as President and Secretary-Treasurer of the American Accounting Association. In addition, he has been actively involved with the American Institute of Certified Public Accountants and has been a member of the Accounting Standards Executive Committee (AcSEC) of that organization. He has served on the FASB task force that examined the reporting issues related to accounting for income taxes and served as a trustee of the Financial Accounting Foundation. Professor Weygandt has received the Chancellor's Award for Excellence in Teaching and the Beta Gamma Sigma Dean's Teaching Award. He is on the board of directors of M & I Bank of Southern Wisconsin. He is the recipient of the Wisconsin Institute of CPAs' Outstanding Educator's Award and the Lifetime Achievement Award. In 2001 he received the American Accounting Association's Outstanding Educator Award.



## Paul Kimmel

Paul D. Kimmel, PhD, CPA, received his bachelor's degree from the University of Minnesota and his doctorate in accounting from the University of Wisconsin. He is an Associate Professor at the University of Wisconsin—Milwaukee, and has public accounting experience with Deloitte & Touche (Minneapolis). He was the recipient of the UWM School of Business Advisory Council Teaching Award, the Reggie Taite Excellence in Teaching Award and a three-time winner of the Outstanding Teaching Assistant Award at the University of Wisconsin. He is also a recipient of the Elijah Watts Sells Award for Honorary Distinction for his results on the CPA exam. He is a member of the American Accounting Association and the Institute of Management Accountants and has published articles in *Accounting Review*, *Accounting Horizons*, *Advances in Management Accounting*, *Managerial Finance*, *Issues in Accounting Education*, *Journal of Accounting Education*, as well as other journals. His research interests include accounting for financial instruments and innovation in accounting education. He has published papers and given numerous talks on incorporating critical thinking into accounting education, and helped prepare a catalog of critical thinking resources for the Federated Schools of Accountancy.



## Don Kieso

Donald E. Kieso, PhD, CPA, received his bachelor's degree from Aurora University and his doctorate in accounting from the University of Illinois. He has served as chairman of the Department of Accountancy and is currently the KPMG Emeritus Professor of Accountancy at Northern Illinois University. He has public accounting experience with Price Waterhouse & Co. (San Francisco and Chicago) and Arthur Andersen & Co. (Chicago) and research experience with the Research Division of the American Institute of Certified Public Accountants (New York). He has done post doctorate work as a Visiting Scholar at the University of California at Berkeley and is a recipient of NIU's Teaching Excellence Award and four Golden Apple Teaching Awards. Professor Kieso is the author of other accounting and business books and is a member of the American Accounting Association, the American Institute of Certified Public Accountants, and the Illinois CPA Society. He has served as a member of the Board of Directors of the Illinois CPA Society, then AACSB's Accounting Accreditation Committees, the State of Illinois Comptroller's Commission, as Secretary-Treasurer of the Federation of Schools of Accountancy, and as Secretary-Treasurer of the American Accounting Association. Professor Kieso is currently serving on the Board of Trustees and Executive Committee of Aurora University, as a member of the Board of Directors of Kishwaukee Community Hospital, and as Treasurer and Director of Valley West Community Hospital. From 1989 to 1993 he served as a charter member of the national Accounting Education Change Commission. He is the recipient of the Outstanding Accounting Educator Award from the Illinois CPA Society, the FSA's Joseph A. Silvoso Award of Merit, the NIU Foundation's Humanitarian Award for Service to Higher Education, a Distinguished Service Award from the Illinois CPA Society, and in 2003 an honorary doctorate from Aurora University.

for Students

# WileyPLUS

*WileyPLUS* is an innovative, research-based, online environment for effective teaching and learning.

## What do STUDENTS receive with *WileyPLUS*?

*WileyPLUS* increases confidence through an innovative **design** that allows greater **engagement**, which leads to improved learning **outcomes**.

## Design

The *WileyPLUS* design integrates relevant resources, including the entire digital textbook, in an easy-to-navigate framework that helps students study more effectively and ensures student engagement. Innovative features, such as calendars and visual progress tracking, as well as a variety of self-evaluation tools, are all designed to improve time-management and increase student confidence.

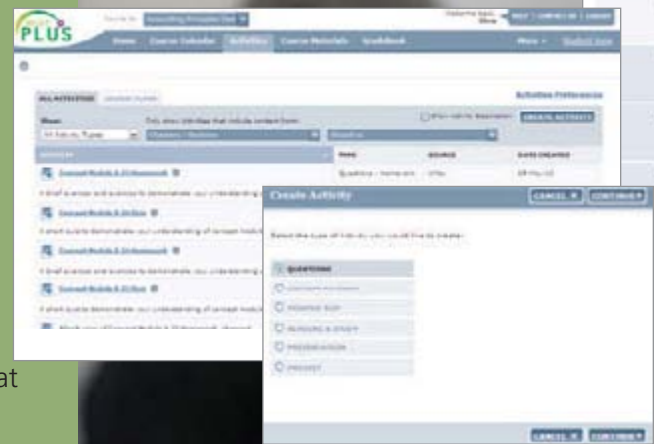
## Engagement

*WileyPLUS* organizes the textbook content into smaller, more manageable learning units with demonstrable study objectives and outcomes. Related media, examples, and sample practice items are integrated within each section to reinforce the study objectives. Throughout each study session, students can assess progress and gain immediate feedback on strengths and weaknesses in order to ensure they are spending their time most effectively.

## Outcomes

Throughout each study session, *WileyPLUS* provides precise reporting of strengths and weaknesses, as well as individualized quizzes. As a result, students can be confident they are spending their time on the right things. With *WileyPLUS*, students always know the exact outcome of their efforts.

With increased confidence, motivation is sustained so students stay on task longer, leading to success.





for Instructors

### What do INSTRUCTORS receive with *WileyPLUS*? Support and Insight into Student Progress

*WileyPLUS* provides reliable, customizable resources that reinforce course goals inside and outside of the classroom, as well as visibility into individual student progress. Pre-created materials and activities help instructors optimize their time.

#### For class preparation and classroom use:

- Interactive Tutorials
- Problem Walkthrough Videos
- Managerial Accounting Videos

#### For assignments and testing:

- Gradable Reading Assignment Questions (embedded with online text)
- Question Assignments: all end-of-chapter problems coded algorithmically with hints, links to text

**For course planning:** *WileyPLUS* comes with a pre-created **Course Plan** designed by a subject matter expert uniquely for this course. Simple drag-and-drop tools make it easy to assign the course plan as-is or modify it to reflect your course syllabus.

**For progress monitoring:** *WileyPLUS* provides instant access to reports on trends in class performance, student use of course materials, and progress toward learning objectives, helping inform decisions and drive classroom discussions.

Experience *WileyPLUS* for effective teaching and learning at [www.wileyplus.com](http://www.wileyplus.com).

Powered by proven technology and built on a foundation of cognitive research, *WileyPLUS* has enriched the education of millions of students in numerous countries around the world.



# The Wiley Faculty Network

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The Wiley Faculty Network is a global community of faculty connected by a passion for teaching and a drive to learn and share. Connect with the Wiley Faculty Network to collaborate with your colleagues, find a mentor, attend virtual and live events, and view a wealth of resources all designed to help you grow as an educator. Embrace the art of teaching—great things happen where faculty connect!

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- Live Events

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Explore your resources and development opportunities.

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- Recorded Presentations
- Professional Development Modules

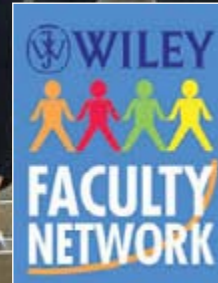
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## Virtual Guest Lectures

Connect with recognized leaders across disciplines and collaborate with your peers on timely topics and discipline specific issues, many of which offer CPE credit.

## Live and Virtual Events

These invitation-only, discipline-specific events are organized through a close partnership between the WFN, Wiley, and the academic community near the event location.

## Technology Training

Discover a wealth of topic- and technology-specific training presented by subject matter experts, authors, and faculty where and when you need it.

## Teaching Resources

Propel your teaching and student learning to the next level with quality peer-reviewed case studies, testimonials, classroom tools, and checklists.

## Connect with Colleagues

Achieve goals and tackle challenges more easily by enlisting the help of your peers. Connecting with colleagues through the WFN can help you improve your teaching experience.

# What TYPE of learner are you?

Understanding each of these basic learning styles enables the authors to engage students' minds and motivate them to do their best work, ultimately improving the experience for both students and faculty.

	Intake: To take in the information	To make a study package	Text features that may help you the most	Output: To do well on exams
VISUAL	<ul style="list-style-type: none"> <li>Pay close attention to charts, drawings, and handouts your instructors use.</li> <li>Underline.</li> <li>Use different colors.</li> <li>Use symbols, flow charts, graphs, different arrangements on the page, white spaces.</li> </ul>	<p>Convert your lecture notes into "page pictures." Therefore:</p> <ul style="list-style-type: none"> <li>Use the "Intake" strategies.</li> <li>Reconstruct images in different ways.</li> <li>Redraw pages from memory.</li> <li>Replace words with symbols and initials.</li> <li>Look at your pages.</li> </ul>	<p>The Navigator/Feature Story/Preview Infographics/Illustrations Accounting Equation Analyses Highlighted words Questions/Exercises/Problems Real-World Focus Decision-Making at Current Designs Managerial Analysis Problem</p>	<ul style="list-style-type: none"> <li>Recall your "page pictures."</li> <li>Draw diagrams where appropriate.</li> <li>Practice turning your visuals back into words.</li> </ul>
AURAL	<ul style="list-style-type: none"> <li>Attend lectures and tutorials.</li> <li>Discuss topics with students and instructors.</li> <li>Explain new ideas to other people.</li> <li>Use a tape recorder.</li> <li>Leave spaces in your lecture notes for later recall.</li> <li>Describe overheads, pictures, and visuals to somebody who was not in class.</li> </ul>	<p>You may take poor notes because you prefer to listen. Therefore:</p> <ul style="list-style-type: none"> <li>Expand your notes by talking with others and with information from your textbook.</li> <li>Tape-record summarized notes and listen.</li> <li>Read summarized notes out loud.</li> <li>Explain your notes to another "aural" person.</li> </ul>	<p>Preview Insight Boxes DO IT!/Action Plan Summary of Learning Objectives Glossary Self-Test Questions Questions/Exercises/Problems Real-World Focus Decision-Making at Current Designs Managerial Analysis Problem Decision-Making Across the Organization Communication Activity Ethics Case</p>	<ul style="list-style-type: none"> <li>Talk with the instructor.</li> <li>Spend time in quiet places recalling the ideas.</li> <li>Practice writing answers to old exam questions.</li> <li>Say your answers out loud.</li> </ul>
READING/ WRITING	<ul style="list-style-type: none"> <li>Use lists and headings.</li> <li>Use dictionaries, glossaries, and definitions.</li> <li>Read handouts, textbooks, and supplementary library readings.</li> <li>Use lecture notes.</li> </ul>	<ul style="list-style-type: none"> <li>Write out words again and again.</li> <li>Reread notes silently.</li> <li>Rewrite ideas and principles into other words.</li> <li>Turn charts, diagrams, and other illustrations into statements.</li> </ul>	<p>The Navigator/Feature Story/Study Objectives/Preview DO IT!/Action Plan Summary of Learning Objectives Glossary/Self-Test Questions Questions/Exercises/Problems Writing Problems Real-World Focus Decision-Making at Current Designs Considering Your Costs and Benefits Managerial Analysis Problem Decision-Making Across the Organization Communication Activity</p>	<ul style="list-style-type: none"> <li>Write exam answers.</li> <li>Practice with multiple-choice questions.</li> <li>Write paragraphs, beginnings, and endings.</li> <li>Write your lists in outline form.</li> <li>Arrange your words into hierarchies and points.</li> </ul>
KINESTHETIC	<ul style="list-style-type: none"> <li>Use all your senses.</li> <li>Go to labs, take field trips.</li> <li>Listen to real-life examples.</li> <li>Pay attention to applications.</li> <li>Use hands-on approaches.</li> <li>Use trial-and-error methods.</li> </ul>	<p>You may take poor notes because topics do not seem concrete or relevant. Therefore:</p> <ul style="list-style-type: none"> <li>Put examples in your summaries.</li> <li>Use case studies and applications to help with principles and abstract concepts.</li> <li>Talk about your notes with another "kinesthetic" person.</li> <li>Use pictures and photographs that illustrate an idea.</li> </ul>	<p>The Navigator/Feature Story/Preview Infographics/Illustrations DO IT!/Action Plan Summary of Learning Objectives Self-Test Questions Questions/Exercises/Problems Real-World Focus Decision-Making at Current Designs Managerial Analysis Problem Decision-Making Across the Organization Ethics Case Considering Your Costs and Benefits</p>	<ul style="list-style-type: none"> <li>Write practice answers.</li> <li>Role-play the exam situation.</li> </ul>

# Features of the Sixth Edition

The Sixth Edition expands our emphasis on student learning and improves upon a teaching and learning package that instructors and students have rated the highest in customer satisfaction.

## What's New?

### Integrated Company Coverage



Beginning in Chapter 1, we introduce **Current Designs**, a kayak-making company based in Winona, Minnesota. We then follow-up with a new decision-making problem in every chapter based on this real-world company. Each problem presents realistic managerial accounting situations that students must analyze to determine the best course of action. In addition, many of these end-of-chapter activities also have an accompanying video.

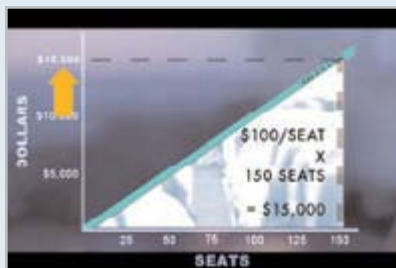


### People, Planet, and Profit

Today's companies are evaluating not just their profitability but also their corporate social responsibility. In this edition, we have profiled some of these companies, such as **Starbucks**, to highlight their sustainable business practices. We also have added a new *Broadening Your Perspective* problem, "Considering People, Planet, and Profit," which requires students to assess and determine how best to balance a company's profitability with its corporate social responsibility.

### New Feature Stories

Students will be more willing to commit time and energy to a topic when they believe it is relevant to their future careers. There is no better way to demonstrate relevance than to ground discussions in the real world. To that end, we have written new Feature Stories about such companies as **Starbucks**, **Amazon.com**, and **Zappos.com**.



### Managerial Accounting Video Series

Through the use of real-world, cutting-edge companies, these videos engage students with a dynamic overview of managerial accounting topics and motivate them through the detailed tools, examples, and discussions presented in their textbook, *WileyPLUS* course, and classroom lectures.

### Continued Focus on Decision-Making

In the Sixth Edition, we continue to demonstrate how invaluable management accounting information is to business decision-making. New to this edition is another new *Broadening Your Perspective* problem, "Considering Your Costs and Benefits," which presents a realistic situation in which students must weigh the pros and cons of two alternatives.



# Enhanced Features of the Sixth Edition

This edition was also subject to an overall, comprehensive revision to ensure that it is technically accurate, relevant, and up-to-date. We have continued and enhanced many of the features of the Fifth Edition of *Managerial Accounting*, including the following:

## Real-World Emphasis

One of the goals of the managerial accounting course is to orient students to the application of accounting principles and techniques in practice. Accordingly, we have continued our practice of using numerous examples from real companies throughout the textbook. The names of these real companies are highlighted in red.

Also, throughout the chapters, **Insight** and **Accounting Across the Organization** boxes show how people, often in non-accounting functions, in actual companies make decisions using accounting information. *Guideline Answers* to the critical thinking questions are provided at the end of each chapter. Finally, examples, exercises, and problems that focus on accounting situations faced by **service companies** are identified by the icon shown here.



## Decision Toolkit

The **Decision Toolkits** highlight the important analytical tools integrated throughout the textbook, designed to assist students in evaluation and using the information at hand. A **Using the Decision Toolkit** exercise, just before the chapter summary, asks students to use the decision tools presented in the chapter and takes them through the problem-solving steps.



## DO IT! Exercises

Brief **DO IT!** exercises ask students to apply their newly acquired knowledge. The **DO IT!** exercises include an *Action Plan*, which reviews the necessary steps to complete the exercise, as well as a *Solution* so students can have immediate feedback. A **Comprehensive DO IT!** problem at the end of each chapter allows students a final check of their understanding before they do their homework. **DO IT! Review** problems are part of the end-of-chapter homework material.

## Marginal Notes

**Helpful Hints** in the margin further clarify concepts being discussed. **Ethics Notes** point out ethical points related to the nearby text discussion. **Alternative Terminology** lets students know about interchangeable words and phrases.

## Comprehensive Homework Material

Each chapter concludes with revised Self-Test Questions, Questions, Brief Exercises, **DO IT!** Review, Exercises, and Problems. An icon, shown here, identifies Exercises and Problems that can be solved using **Excel templates** at the book's companion website. The **Waterways Continuing Problem** uses the business activities of a fictional company, to help students apply managerial accounting topics to a realistic entrepreneurial situation.

## Broadening Your Perspective Section

We have revised and updated the **Broadening Your Perspective** section at the end of each chapter. Elements in this section include the following:

- Decision-Making at Current Designs
- Decision-Making Across the Organization
- Managerial Analysis
- Real-World Focus
- Communication Activity
- Ethics Case
- All About You
- Considering People, Planet, and Profit
- Considering Your Costs and Benefits

These assignments are designed to help develop students' decision-making and critical-thinking skills.

# Content Changes by Chapter

## Chapter 1 Managerial Accounting

- New Feature Story, on history and operations of **Current Designs** (kayak-making company).
- First section, Managerial Accounting Basics, rewritten to discuss managerial accounting activities within context of Current Designs' kayak-making business.
- New Management Insight, "Why Manufacturing Matters for U.S. Workers," about importance of U.S. factory jobs.
- Revised section, Managerial Accounting Today, now includes Focus on the Value Chain section (discussing value chain, JIT, TQM, TOC, ERP, ABC), Balanced Scorecard section, and new Corporate Social Responsibility section.
- Deleted chapter appendix (Accounting Cycle for a Manufacturing Company).

## Chapter 2 Job Order Costing

- New Feature Story, on Lynn Tilton, founder and CEO of **Patriarch Partners**, the largest, woman-owned U.S. business.
- In the Accumulating Manufacturing Costs section, included the individual T-accounts in the margin, next to where discussed in the text. Also, provided additional explanations for Raw Materials Cost, Factory Labor Costs, and Manufacturing Overhead Costs, to increase student understanding.
- Added more detail (such as totals of T-accounts) within illustrations of job cost sheets, so students can better understand assignment of costs.

## Chapter 3 Process Costing

- Changed example of company in Process Cost Flow section to roller blade/skateboard wheel manufacturer instead of can opener manufacturer, to increase student appeal.
- New People, Planet, and Profit Insight, about costs/benefits of remanufactured goods.

## Chapter 4 Activity-Based Costing

- New Feature Story (and accompanying video) on why **Precor** (fitness equipment) switched from traditional costing to activity-based costing.
- Changed example company, in Example of ABC versus Traditional Costing section, to

producing abdominal trainers instead of car-antitheft devices, to tie in with Precor.

- Rewrote definition/explanation of value-added and non-value-added activities, as well as of activity levels, to ensure student understanding of these concepts.
- Simplified the ABC costing example for the service company illustration, to avoid needless detail and potential student confusion.
- New Management Insight, summarizing a recent survey of ABC practices by companies worldwide.
- New Real-World Focus BYP problem, on use of ABC in the financial services industry.

## Chapter 5 Cost-Volume-Profit

- New Feature Story, on how Jeff Bezos started and expanded **Amazon.com**'s operations.
- New People, Planet, and Profit Insight, on hydroponic farming/vertical farming.
- Added material on use of scatter plots in High-Low Method section, as well as provided supplement on regression analysis on book's companion website.
- Added more detailed explanations and illustrations to Contribution Margin per Unit, Contribution Margin Ratio, and Break-Even Analysis sections, to ensure student understanding.
- New Real-World Focus BYP problem, on how **Barnes and Noble**'s current structure left it ill-prepared for an e-book environment.

## Chapter 6 Cost-Volume-Profit Analysis: Additional Issues

- New Feature Story, still about **Intel**, but now explaining why the computer chip giant experiences huge swings in its earnings.
- Provided more step-by-step explanations and illustrations in the Basic Computations section, so students will improve their understanding of why and how to compute break-even points, target net income, and margin of safety.
- New Service Company Insight, about why Warren Buffett acquired **Burlington Northern Railroad**.
- New Real-World Focus BYP problem, on **Smart Balance**'s employment and cost structure.
- New Considering People, Planet, and Profit BYP problem, about whether companies should incorporate environmental costs into their decision-making process.

## Chapter 7 Incremental Analysis

- New Service Company Insight, about the relevant revenues and costs of [Amazon.com](#)'s Prime free shipping program.
- Expanded sunk cost discussion and illustrations, to improve student understanding.
- New material on how behavioral decision-making can affect whether or not to replace equipment.
- Expanded discussion of elimination of an unprofitable segment to include fixed cost analysis.
- New Considering Your Costs and Benefits BYP problem, about whether or not to drop out of college due to financial considerations.

## Chapter 8 Pricing

- New Feature Story (and accompanying video) on origins and operating principles of [Zappos.com](#).
- New Management Insight, about how competition affected online subscription prices.
- Rewrote Cost-Plus Pricing section, adding more explanations and illustrations to increase student understanding.
- New Considering Your Costs and Benefits BYP problem, about difference between "low-cost" and "low-price" suppliers as well as implications of full-cost accounting for corporate social responsibility.

## Chapter 9 Budgetary Planning

- Added more detailed explanation to the Budgeting and Human Behavior section about participative budgeting.
- Added marginal T-accounts to Production Budget and Direct Materials Budget sections, to illustrate flow of costs.
- New Service Company Insight, on the implications of budgetary optimism as it pertains to governments.
- New Management Insight, on the potential costs and benefits of a company stockpiling raw materials.
- Added a second Comprehensive DO IT! problem on budgeted income statement and balance sheet.
- New Considering Your Costs and Benefits BYP problem about whether student loans should be considered as a source of income.

## Chapter 10 Budgetary Control and Responsibility Accounting

- New Service Company Insight, about [NBCUniversal](#)'s response to Fox wanting to reduce its licensing fee for the TV show "House."
- Added graph to the solution for the DO IT! on flexible budgets, to increase student understanding.

- Moved Management by Exception to within Performance Evaluation discussion, now included in Responsibility Accounting section, for better flow of chapter topics.
- New Considering Your Costs and Benefits BYP problem, addressing the decision of whether or not to purchase a home.

## Chapter 11 Standard Costs and Balanced Scorecard

- New Feature Story (and accompanying video) on [Starbucks](#)' origins and vision.
- New case study example on producing caffeinated energy drink (replaces weed-killer manufacturer), to increase student appeal.
- New material and illustrations added, to enhance explanation of the components of variances as well as how to compute them.
- New People, Planet, and Profit Insight, highlighting Starbucks' 10<sup>th</sup> annual *Global Responsibility Report* and the company's commitment to corporate social responsibility.
- Reformatted the illustration of the objectives within the four perspectives of a balanced scorecard, to increase student understanding.
- New Real-World Focus BYP problem referencing the *Wall Street Journal* article, "In Risky Move, GM to Run Plants Around Clock."
- New Considering Your Costs and Benefits BYP problem, addressing the extent to which financial measures should influence medical care.

## Chapter 12 Planning for Capital Investments

- New Feature Story, on how timing can affect capital investments by the cruise-line industry.
- New Management Insight, about whether [Verizon](#)'s investment in its 4G wireless service will pay off and whether there is too much plant capacity for manufacturing big-screen TVs.
- New Considering Your Costs and Benefits BYP problem, about calculating the NPVs of solar panels.

## Chapter 13 Statement of Cash Flows

- New Anatomy of a Fraud, about [Parmalat](#)'s multiple frauds.
- New Appendix 13C, Statement of Cash Flows—T-Account Approach.

## Chapter 14 Financial Statement Analysis

- New Anatomy of a Fraud, on using Benford's Law statistical law to detect fraud.
- New Investor Insight, "How to Manage the Current Ratio," about its limitations.



# Teaching and Learning Supplementary Material

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In addition to the support instructors receive from *WileyPLUS* and the Wiley Faculty Network, we offer the following useful supplements.

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- *Exercises: Set B and Challenge Exercises*
- *Problems: Set C*
- *Self-Tests and Additional Self-Tests*
- *Cases for Managerial Decision-Making*
- A complete *Glossary* of all the key terms used in the text

**Student Study Guide.** Each chapter of the Study Guide contains a chapter review, chapter outline, and a glossary of key terms. Demonstration problems, multiple-choice, true/false, matching, and other exercises are also included.

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**Mobile Applications.** Quizzing and reviewing content is available for download on iTunes.

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# Brief Contents

## Cost Concepts for Decision-Makers

- 1 Managerial Accounting 2
- 2 Job Order Costing 48
- 3 Process Costing 94
- 4 Activity-Based Costing 144

## Decision-Making Concepts

- 5 Cost-Volume-Profit 196
- 6 Cost-Volume-Profit Analysis: Additional Issues 236
- 7 Incremental Analysis 292
- 8 Pricing 332

## Planning and Control Concepts

- 9 Budgetary Planning 382
- 10 Budgetary Control and Responsibility Accounting 434
- 11 Standard Costs and Balanced Scorecard 494
- 12 Planning for Capital Investments 546

## Performance Evaluation Concepts

- 13 Statement of Cash Flows 586
- 14 Financial Statement Analysis 650

## APPENDICES

- A Time Value of Money A-1
- B Standards of Ethical Conduct for Management Accountants B-1

## Cases for Managerial Decision-Making CA-1

(The full text of these cases is available online at [www.wiley.com/college/weygandt](http://www.wiley.com/college/weygandt).)

- COMPANY INDEX I-1
- SUBJECT INDEX I-3

# Contents

## Chapter 1

### Managerial Accounting 2

*Just Add Water . . . and Paddle 2*

#### Managerial Accounting Basics 4

- Comparing Managerial and Financial Accounting 4
- Management Functions 4
- Organizational Structure 6
- Business Ethics 7

#### Managerial Cost Concepts 9

- Manufacturing Costs 9
- Product versus Period Costs 11

#### Manufacturing Costs in Financial Statements 12

- Income Statement 12
- Cost of Goods Manufactured 13
- Cost of Goods Manufactured Schedule 14
- Balance Sheet 15
- Cost Concepts—A Review 16
- Product Costing for Service Industries 18

#### Managerial Accounting Today 19

- Focus on the Value Chain 19
- Balanced Scorecard 20
- Corporate Social Responsibility 21

## Chapter 2

### Job Order Costing 48

*She Succeeds Where Others Have Failed 48*

#### Cost Accounting Systems 50

- Job Order Cost System 50
- Process Cost System 50

#### Job Order Cost Flow 51

- Accumulating Manufacturing Costs 52
- Assigning Manufacturing Costs to Work in Process 54
- Manufacturing Overhead Costs 58
- Assigning Costs to Finished Goods 62
- Assigning Costs to Cost of Goods Sold 63
- Summary of Job Order Cost Flows 64
- Job Order Costing for Service Companies 65
- Advantages and Disadvantages of Job Order Costing 67

#### Reporting Job Cost Data 68

- Under- or Overapplied Manufacturing Overhead 69

## Chapter 3

### Process Costing 94

*Ben & Jerry's Tracks Its Mix-Ups 94*

#### The Nature of Process Cost Systems 96

- Uses of Process Cost Systems 96
- Process Costing for Service Companies 97

Similarities and Differences Between Job Order  
Cost and Process Cost Systems 97

Process Cost Flow 99

Assigning Manufacturing Costs—Journal  
Entries 99

#### Equivalent Units 102

- Weighted-Average Method 102
- Refinements on the Weighted-Average  
Method 103

#### Production Cost Report 105

- Compute the Physical Unit Flow (Step 1) 106
- Compute the Equivalent Units of Production  
(Step 2) 107
- Compute Unit Production Costs (Step 3) 107
- Prepare a Cost Reconciliation Schedule  
(Step 4) 108
- Preparing the Production Cost Report 109
- Costing Systems—Final Comments 111

#### APPENDIX 3A FIFO Method 115

- Equivalent Units Under FIFO 115
- Comprehensive Example 116
- FIFO and Weighted-Average 120

## Chapter 4

### Activity-Based Costing 144

*Precor Is on Your Side 144*

#### Traditional Costing and Activity-Based Costing 146

- Traditional Costing Systems 146
- The Need for a New Approach 146
- Activity-Based Costing 147

#### Example of ABC versus Traditional Costing 149

- Identify and Classify Activities and Allocate  
Overhead to Cost Pools (Step 1) 150
- Identify Cost Drivers (Step 2) 150
- Compute Activity-Based Overhead Rates  
(Step 3) 150
- Assign Overhead Costs to Products  
(Step 4) 151
- Comparing Units Costs 152

#### Activity-Based Costing: A Closer Look 155

- Benefits of ABC 155
- Limitations of ABC 155
- When to Use ABC 156
- Value-Added versus Non-Value-Added  
Activities 157
- Classification of Activity Levels 159

#### Activity-Based Costing in Service Industries 161

- Traditional Costing Example 162
- Activity-Based Costing Example 162

## APPENDIX 4A: Just-in-Time Processing 166

- Objective of JIT Processing 167
- Elements of JIT Processing 168
- Benefits of JIT Processing 168

## Chapter 5

### Cost-Volume-Profit 196

*Don't Worry—Just Get Big* 196

#### Cost Behavior Analysis 198

- Variable Costs 198
- Fixed Costs 199
- Relevant Range 200
- Mixed Costs 201
- Importance of Identifying Variable and Fixed Costs 205

#### Cost-Volume-Profit Analysis 206

- Basic Components 206
- CVP Income Statement 206
- Break-Even Analysis 209
- Target Net Income 213
- Margin of Safety 215

## Chapter 6

### Cost-Volume-Profit Analysis: Additional Issues 236

*Rapid Replay* 236

#### Cost-Volume-Profit (CVP) Review 238

- Basic Concepts 238
- Basic Computations 239
- CVP and Changes in the Business Environment 241

#### Sales Mix 244

- Break-Even Sales in Units 244
- Break-Even Sales in Dollars 246
- Determining Sales Mix with Limited Resources 248

#### Cost Structure and Operating Leverage 251

- Effect on Contribution Margin Ratio 252
- Effect on Break-Even Point 252
- Effect on Margin of Safety Ratio 252
- Operating Leverage 252

#### APPENDIX 6A: Absorption Costing versus Variable Costing 256

- Example: Comparing Absorption Costing with Variable Costing 256
- An Extended Example 258
- Decision-Making Concerns 262
- Potential Advantages of Variable Costing 264

## Chapter 7

### Incremental Analysis 292

*Make It or Buy It?* 292

#### Management's Decision-Making Process 294

- Incremental Analysis Approach 294
- How Incremental Analysis Works 295

#### Types of Incremental Analysis 296

- Accept an Order at a Special Price 296
- Make or Buy 298
- Sell or Process Further 301
- Repair, Retain, or Replace Equipment 304
- Eliminate an Unprofitable Segment or Product 305

#### Other Considerations in Decision-Making 308

- Qualitative Factors 308
- Relationship of Incremental Analysis and Activity-Based Costing 308

## Chapter 8

### Pricing 332

*They've Got Your Size—and Color* 332

#### Pricing Goods for External Sales 334

- Target Costing 335
- Cost-Plus Pricing 337
- Variable-Cost Pricing 339

#### Pricing Services 341

#### Transfer Pricing for Internal Sales 345

- Negotiated Transfer Prices 346
- Cost-Based Transfer Prices 349
- Market-Based Transfer Prices 350
- Effect of Outsourcing on Transfer Pricing 351

#### Transfers Between Divisions in Different Countries 351

#### APPENDIX 8A: Other Cost Approaches to Pricing 355

- Absorption-Cost Pricing 355
- Variable-Cost Pricing 357

## Chapter 9

### Budgetary Planning 382

*Was This the Next Amazon.com? Not Quite* 382

#### Budgeting Basics 384

- Budgeting and Accounting 384
- The Benefits of Budgeting 384
- Essentials of Effective Budgeting 384
- Length of the Budget Period 385
- The Budgeting Process 385
- Budgeting and Human Behavior 386
- Budgeting and Long-Range Planning 387
- The Master Budget 387

#### Preparing the Operating Budgets 389

- Sales Budget 389
- Production Budget 390
- Direct Materials Budget 392
- Direct Labor Budget 395
- Manufacturing Overhead Budget 395
- Selling and Administrative Expense Budget 396
- Budgeted Income Statement 396

#### Preparing the Financial Budgets 399

- Cash Budget 399
- Budgeted Balance Sheet 402



- Budgeting in Nonmanufacturing Companies 404**
  - Merchandisers 404
  - Service Companies 405
  - Not-for-Profit Organizations 405

## Chapter 10

### Budgetary Control and Responsibility Accounting 434

*Turning Trash Into Treasure 434*

#### **Budgetary Control 436**

#### **Static Budget Reports 437**

- Examples 437
- Uses and Limitations 438

#### **Flexible Budgets 438**

- Why Flexible Budgets? 439
- Developing the Flexible Budget 440
- Flexible Budget—A Case Study 442
- Flexible Budget Reports 445

#### **Responsibility Accounting 447**

- Controllable versus Noncontrollable Revenues and Costs 449
- Principles of Performance Evaluation 449
- Responsibility Reporting System 451

#### **Types of Responsibility Centers 454**

- Responsibility Accounting for Cost Centers 455
- Responsibility Accounting for Profit Centers 455
- Responsibility Accounting for Investment Centers 458

#### **APPENDIX 10A: Residual Income—Another Performance Measurement 465**

- Residual Income Compared to ROI 466
- Residual Income Weakness 466

## Chapter 11

### Standard Costs and Balanced Scorecard 494

*80,000 Different Caffeinated Combinations 494*

#### **The Need for Standards 496**

- Distinguishing Between Standards and Budgets 496
- Why Standard Costs? 496

#### **Setting Standard Costs 496**

- Ideal versus Normal Standards 497
- A Case Study 498

#### **Analyzing and Reporting Variances from Standards 502**

- Direct Materials Variances 503
- Direct Labor Variances 506
- Manufacturing Overhead Variances 508
- Reporting Variances 511
- Statement Presentation of Variances 512

#### **Balanced Scorecard 512**

#### **APPENDIX 11A: Standard Cost Accounting System 518**

- Journal Entries 518
- Ledger Accounts 520

#### **APPENDIX 11B: A Closer Look at Overhead Variances 521**

- Overhead Controllable Variance 521
- Overhead Volume Variance 522

## Chapter 12

### Planning for Capital Investments 546

*Floating Hotels 546*

#### **The Capital Budgeting Evaluation Process 548**

- Cash Flow Information 548
- Illustrative Data 549

#### **Cash Payback 550**

#### **Net Present Value Method 551**

- Equal Annual Cash Flows 552
- Unequal Annual Cash Flows 553
- Choosing a Discount Rate 554
- Simplifying Assumptions 555
- Comprehensive Example 556

#### **Additional Considerations 557**

- Intangible Benefits 557
- Profitability Index for Mutually Exclusive Projects 559
- Risk Analysis 560
- Post-Audit of Investment Projects 561

#### **Other Capital Budgeting Techniques 561**

- Internal Rate of Return Method 562
- Comparing Discounted Cash Flow Methods 564
- Annual Rate of Return Method 564

## Chapter 13

### Statement of Cash Flows 586

*"Got Cash?" 586*

#### **Statement of Cash Flows: Usefulness and Format 588**

- Usefulness of the Statement of Cash Flows 588
- Classification of Cash Flows 588
- Significant Noncash Activities 590
- Format of the Statement of Cash Flows 590
- Preparing the Statement of Cash Flows 592
- Indirect and Direct Methods 592

#### **Preparing the Statement of Cash Flows—Indirect Method 593**

- Step 1: Operating Activities 594
- Summary of Conversion to Net Cash Provided by Operating Activities—Indirect Method 598
- Step 2: Investing and Financing Activities 600
- Step 3: Net Change in Cash 601

**Using Cash Flows to Evaluate a Company 604**

Free Cash Flow 604

**APPENDIX 13A: Using a Worksheet to Prepare the Statement of Cash Flows—Indirect Method 608**

Preparing the Worksheet 609

**APPENDIX 13B Statement of Cash Flows—Direct Method 615**

Step 1: Operating Activities 616

Step 2: Investing and Financing Activities 620

Step 3: Net Change in Cash 621

**APPENDIX 13C: Statement of Cash Flows—T-Account Approach 624**

## Chapter 14

# Financial Statement Analysis 650

*It Pays to Be Patient 650*

**Basics of Financial Statement Analysis 652**

Need for Comparative Analysis 652

Tools of Analysis 652

**Horizontal Analysis 653**

Balance Sheet 654

Income Statement 655

Retained Earnings Statement 655

**Vertical Analysis 657**

Balance Sheet 657

Income Statement 657

**Ratio Analysis 659**

Liquidity Ratios 660

Profitability Ratios 664

Solvency Ratios 668

Summary of Ratios 669

**Earning Power and Irregular Items 671**

Discontinued Operations 672

Extraordinary Items 673

Changes in Accounting Principle 675

Comprehensive Income 675

**Quality of Earnings 676**

Alternative Accounting Methods 676

Pro Forma Income 676

Improper Recognition 677

## Appendix A

# Time Value of Money A-1

**Nature of Interest A-1**

Simple Interest A-1

Compound Interest A-2

**Future Value Concepts A-2**

Future Value of a Single Amount A-2

Future Value of an Annuity A-4

**Present Value Concepts A-7**

Present Value Variables A-7

Present Value of a Single Amount A-7

Present Value of an Annuity A-9

Time Periods and Discounting A-11

Computing the Present Value of a Long-Term Note or Bond A-11

Computing the Present Values in a Capital Budgeting Decision A-14

**Using Financial Calculators A-16**

Present Value of a Single Sum A-16

Present Value of an Annuity A-17

Useful Applications of the Financial Calculator A-18

## Appendix B

# Standards of Ethical Conduct for Management Accountants B-1

**IMA Statement of Ethical Professional Practice B-1**

Principles B-1

Standards B-1

Resolution of Ethical Conflict B-2

# Cases for Management Decision-Making CA-1

(The full text of these cases is available online at [www.wiley.com/college/weygandt](http://www.wiley.com/college/weygandt)).

**Photo Credits PC-1**

**Company Index I-1**

**Subject Index I-3**

# Chapter 1

# Managerial Accounting



## 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 as well as 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 and sell about

*The Navigator is designed to prompt you to use the learning aids in the chapter and to help you set priorities as you study.*

*Learning Objectives give you a framework for learning the specific concepts covered in the chapter.*



### The Navigator

- Scan Learning Objectives
- Read Feature Story
- Scan Preview
- Read Text and answer **DO IT!** p. 8  
 p. 12  p. 15  p. 21
- Work Using the Decision Toolkit p. 22
- Review Summary of Learning Objectives
- Work Comprehensive **DO IT!** p. 25
- Answer Self-Test Questions
- Complete Assignments
- Go to **WileyPLUS** for practice and tutorials

## Learning Objectives

*After studying this chapter, you should be able to:*

- 1** Explain the distinguishing features of managerial accounting.
- 2** Identify the three broad functions of management.
- 3** Define the three classes of manufacturing costs.
- 4** Distinguish between product and period costs.
- 5** Explain the difference between a merchandising and a manufacturing income statement.
- 6** Indicate how cost of goods manufactured is determined.
- 7** Explain the difference between a merchandising and a manufacturing balance sheet.
- 8** Identify trends in managerial accounting.



### The Navigator



12,000 canoes and kayaks per year, 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.

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

*The Feature Story helps you picture how the chapter topic relates to the real world of business and accounting.*

Source: [www.wenonah.com](http://www.wenonah.com).



*The Preview describes the purpose of the chapter and outlines the major topics and subtopics you will find in it.*

## Preview of Chapter 1

This chapter focuses on issues illustrated in the 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 for assisting management in making decisions and for evaluating the effectiveness of those decisions.

The content and organization of this chapter are as follows.

MANAGERIAL ACCOUNTING			
Managerial Accounting Basics	Managerial Cost Concepts	Manufacturing Costs in Financial Statements	Managerial Accounting Today
<ul style="list-style-type: none"> <li>• Comparing managerial and financial accounting</li> <li>• Management functions</li> <li>• Organizational structure</li> <li>• Business ethics</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturing costs</li> <li>• Product vs. period costs</li> </ul>	<ul style="list-style-type: none"> <li>• Income statement</li> <li>• Cost of goods manufactured</li> <li>• Balance sheet</li> <li>• Cost concepts—A review</li> <li>• Product costing for service industries</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on the value chain</li> <li>• Balanced scorecard</li> <li>• Corporate social responsibility</li> </ul>



## Managerial Accounting Basics

*Essential terms and concepts are printed in blue where they first appear and are defined in the end-of-chapter Glossary.*

**Managerial accounting** provides economic and financial information for managers and other internal users. The skills that you will 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 2, 3, and 4). And to stay profitable, Current Designs must adjust the number of kayaks it produces in light of changes in economic conditions and consumer tastes. It then needs to understand how changes in the number of kayaks it produces impact its production costs and profitability (Chapters 5 and 6). Further, Current Designs' managers must 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 7)? Finally, one of the most important, and most difficult, decisions is what price to charge for the kayaks (Chapter 8).

In order to plan for the future, Current Designs prepares budgets (Chapter 9), and it then compares its budgeted numbers with its actual results to evaluate performance and identify areas that need to change (Chapters 10 and 11). Finally, it sometimes needs to make substantial investment decisions, such as the building of a new plant or the purchase of new equipment (Chapter 12).

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 the 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

#### LEARNING OBJECTIVE 1

Explain the distinguishing features of managerial 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 1-1 summarizes the principal differences between financial accounting and managerial accounting.

### Management Functions

#### LEARNING OBJECTIVE 2

Identify the three broad functions of management.

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

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

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. Standard is relevance to decisions.
Verification Process	Audited by CPA.	No independent audits.

**Illustration 1-1**  
Differences between financial and managerial accounting

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, has 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 trading 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** must coordinate purchasing, manufacturing, warehousing, and selling. Service corporations such as **American Airlines**, **Federal Express**, and **AT&T** must 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 being met. When there are deviations from targeted objectives, managers must decide what changes are needed to get back on track. Scandals at companies like **Enron**, **Lucent**, and **Xerox** attest to the fact that companies must have 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.



*Insight boxes illustrate interesting situations in real companies and show how managers make decisions using accounting information. Guideline answers to the critical thinking questions appear on the last page of the chapter.*

## MANAGEMENT INSIGHT



### Even the Best Have to Get Better

**Louis Vuitton** is a French manufacturer of high-end handbags, wallets, and suitcases. Its reputation for quality and style allows it to charge extremely high prices—for example, \$700 for a tote bag. But often in the past, when demand was hot, supply was nonexistent—shelves were empty, and would-be buyers left empty-handed.

Luxury-goods manufacturers used to consider stockouts to be a good thing, but recently Louis Vuitton changed its attitude. The company adopted “lean” processes used by car manufacturers and electronics companies to speed up production of “hot” products. Work is done by flexible teams, with jobs organized based on how long a task takes. By reducing wasted time and eliminating bottlenecks, what used to take 20 to 30 workers eight days to do now takes 6 to 12 workers one day. Also, production employees who used to specialize on a single task on a single product are now multiskilled. This allows them to quickly switch products to meet demand.

To make sure that the factory is making the right products, within a week of a product launch, Louis Vuitton stores around the world feed sales information to the headquarters in France, and production is adjusted accordingly. Finally, the new production processes have also improved quality. Returns of some products are down by two-thirds, which makes quite a difference to the bottom line when the products are pricey.

Source: Christina Passariello, “Louis Vuitton Tries Modern Methods on Factory Lines,” *Wall Street Journal* (October 9, 2006).



What are some of the steps that this company has taken in order to ensure that production meets demand? (See page 47.)

## Organizational Structure

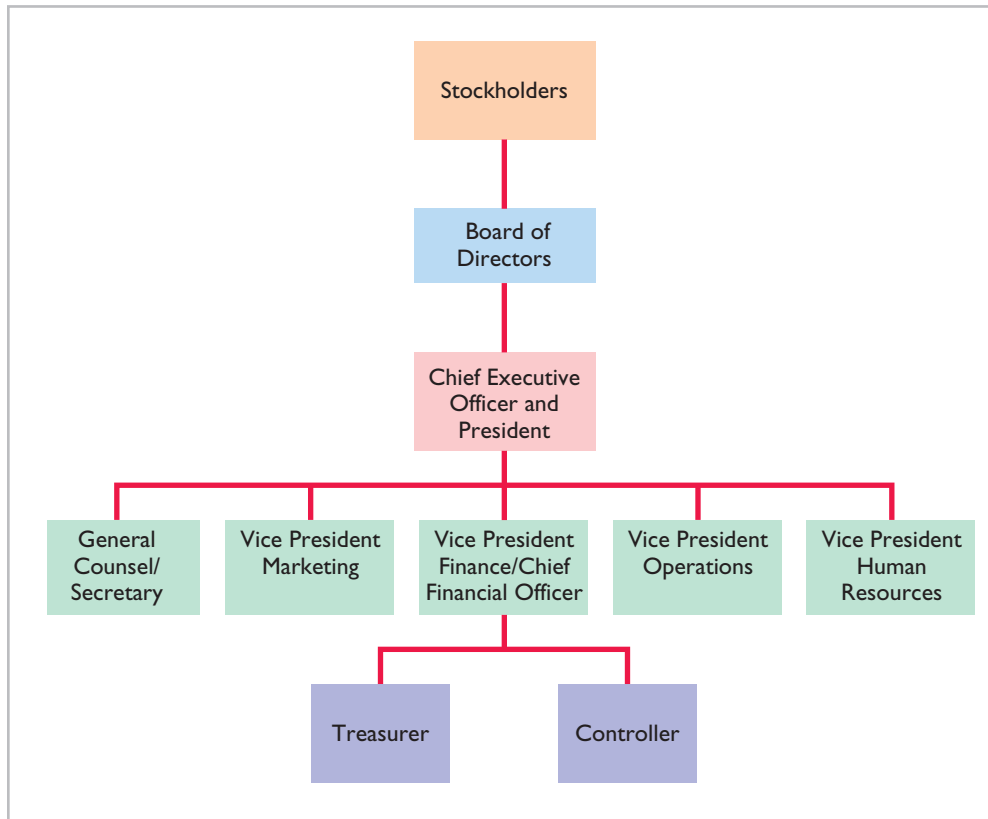
Most companies prepare **organization charts** to show the interrelationships of activities and the delegation of authority and responsibility within the company. Illustration 1-2 shows a typical organization chart.

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 on page 7 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





**Illustration 1-2**  
Corporation's organization chart

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) maintaining 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, and in many companies they determine whether resources are being 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 would report to the vice president of operations. Each plant would also have department managers, such as fabricating, painting, and shipping, each of whom would report to the plant manager.

## 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 the budget is 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 the budget is 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 blame the decline in ethics on a change in the corporate culture that took place after Boeing merged with [McDonnell Douglas](#). They suggest 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.

As another example, manufacturing companies need to establish production goals for their processes. Again, if controls are not effective and realistic, problems develop. To illustrate, [Schering-Plough](#), a pharmaceutical manufacturer, found that employees were so concerned with meeting production quantity standards that they failed to monitor the quality of the product, and as a result the dosages were often wrong.

### 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 must now 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. We include the IMA code of ethical standards in Appendix B at the end of the textbook. Throughout the textbook, we will address various ethical issues managers face.

*DO IT! exercises ask you to put newly acquired knowledge to work. They outline the Action Plan necessary to complete the exercise, and they show a Solution.*

## > DO IT!

### Managerial Accounting Concepts

Indicate whether the following statements are true or false.

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. As a result of the Sarbanes-Oxley Act, managerial accounting reports must now comply with generally accepted accounting principles (GAAP).
6. Top managers must certify that a company maintains an adequate system of internal controls.

### Solution

#### 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.

1. False. Managerial accountants determine product costs. In addition, managerial accountants are now held responsible for evaluating how well the company is employing 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. SOX clarifies top management's responsibility for the company's financial statements. In addition, top managers must certify that the company maintains an adequate system of internal control to safeguard the company's assets and ensure accurate financial reports.
6. True.

Related exercise material: **BE1-1, BE1-2, BE1-3, E1-1, and DO IT! 1-1.**

✓ The Navigator

## Managerial Cost Concepts

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

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

To answer these questions, managers need reliable and relevant cost information. We now explain and illustrate the various cost categories that companies use.

### Manufacturing Costs

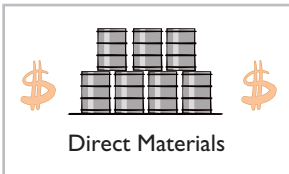
**Manufacturing** consists of activities and processes that convert raw materials into finished goods. Contrast this type of operation with merchandising, which sells merchandise in the form in which it is purchased. Manufacturing costs are classified as direct materials, direct labor, and manufacturing overhead.

LEARNING OBJECTIVE 3

Define the three classes of manufacturing costs.

**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.

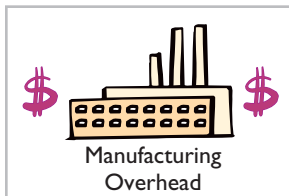


Raw materials that can be physically and directly associated with the finished product during the manufacturing process are **direct materials**. Examples include flour in the baking of bread, syrup in the bottling of soft drinks, and steel in the making of automobiles. A primary direct material of many **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 lubricants used by Current Designs in its equipment and polishing compounds used 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). 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.

Allocating 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 humming, or the computers that make sure paychecks come out 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.

**Alternative Terminology**

Some companies use terms such as *factory overhead*, *indirect manufacturing costs*, and *burden* instead of manufacturing overhead.

*Alternative Terminology notes present synonymous terms used in practice.*



## MANAGEMENT INSIGHT

### Why Manufacturing Matters for U.S. Workers



Prior to 2010, U.S. manufacturing employment fell at an average rate of 0.1% per year for 60 years. At the same time, U.S. factory output increased by an average rate of 3.4%. As manufacturers relied more heavily on automation, the number of people they needed declined. However, factory jobs are important because the average wage of a factory worker is \$22, twice the average wage of employees in the service sector. Fortunately, manufacturing jobs in the United States increased by 1.2% in 2010, and they are forecast to continue to increase through at least 2015. Why? Because companies like **Whirlpool**, **Caterpillar**, and **Dow** are building huge new plants in the United States to replace old, inefficient U.S. facilities. For many products that are ultimately sold in the United States, it makes more sense to produce them domestically and save on the shipping costs. In addition, these efficient new plants, combined with an experienced workforce, will make it possible to compete with manufacturers in other countries, thereby increasing export potential.

Source: Bob Tita, "Whirlpool to Invest in Tennessee Plant," *Wall Street Journal Online* (September 1, 2010); and James R. Hagerty, "U.S. Factories Buck Decline," *Wall Street Journal Online* (January 19, 2011).



In what ways does the shift to automated factories change the amount and composition of product costs? (See page 47.)

## Product Versus Period 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. Companies record product costs, when incurred, as 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.

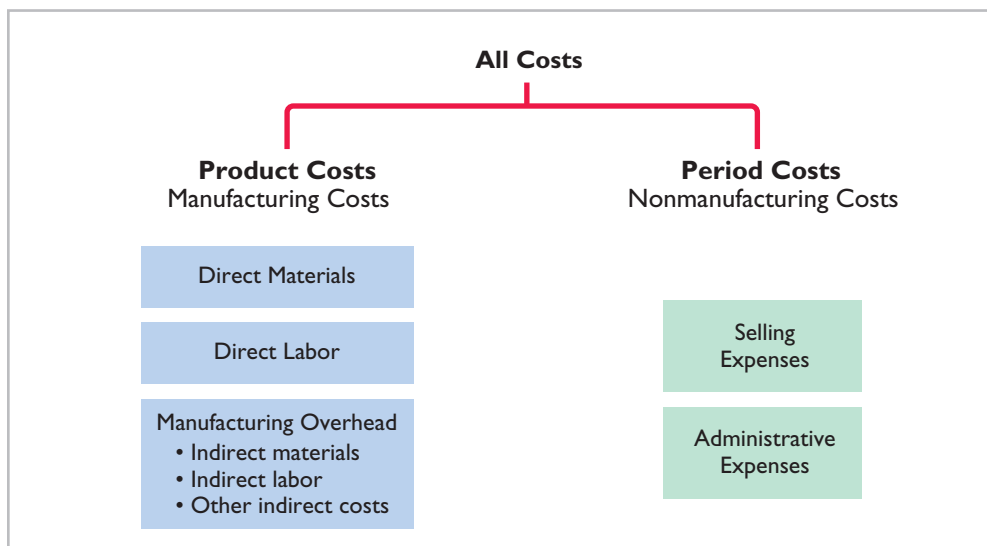
**Period costs** are costs that are matched with the revenue of a specific time period rather than included as part of the cost of a salable product. These are non-manufacturing costs. Period costs include selling and administrative expenses. In order to determine net income, companies deduct these costs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

Illustration 1-3 summarizes these relationships and cost terms. Our main concern in this chapter is with product costs.

LEARNING OBJECTIVE 4

Distinguish between product and period costs.

**Alternative Terminology**  
Product costs are also called *inventoriable costs*.



**Illustration 1-3**  
Product versus period costs

## > DO IT!

### Managerial Cost Concepts

#### Action Plan

- ✓ Classify as direct materials any raw materials that can be physically and directly associated with the finished product.
- ✓ Classify as direct labor the work of factory employees that can be physically and directly associated with the finished product.
- ✓ Classify as manufacturing overhead any costs that are indirectly associated with the finished product.

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

#### Solution

Tires, spokes, and handlebars are direct materials. Salaries of employees who put tires on the wheels are direct labor. All of the other costs are manufacturing overhead.

Related exercise material: **BE1-4, BE1-5, BE1-6, BE1-7, E1-2, E1-3, E1-4, E1-5, E1-6, E1-7, and DO IT! 1-2.**



The Navigator

## Manufacturing Costs in Financial Statements

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

#### LEARNING OBJECTIVE

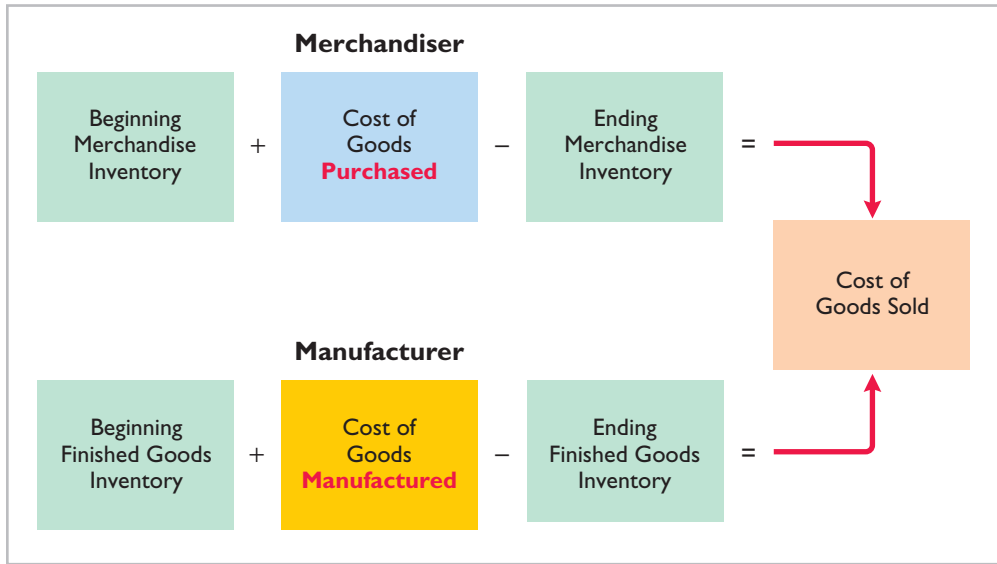
5

Explain the difference between a merchandising and a manufacturing 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 merchandise inventory to the **cost of goods purchased** and subtracting the ending merchandise 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 1-4 shows these different methods.

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 the discussion on pages 13–14 and Illustration 1-7.)

Illustration 1-5 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 1-4**  
Cost of goods sold components

**Helpful Hint**  
We assume a periodic inventory system in this illustration.

*Helpful Hints clarify concepts being discussed.*

**Illustration 1-5**  
Cost of goods sold sections of merchandising and manufacturing income statements

Merchandising Company Income Statement (partial) For the Year Ended December 31, 2014		Manufacturing Company Income Statement (partial) For the Year Ended December 31, 2014	
Cost of goods sold		Cost of goods sold	
<b>Merchandise inventory, Jan. 1</b>	<b>\$ 70,000</b>	<b>Finished goods inventory, Jan. 1</b>	<b>\$ 90,000</b>
<b>Cost of goods purchased</b>	<b>650,000</b>	<b>Cost of goods manufactured</b>	<b>370,000</b>
		<b>(see Illustration 1-7)</b>	
Cost of goods available for sale	720,000	Cost of goods available for sale	460,000
<b>Less: Merchandise inventory,</b>		<b>Less: Finished goods inventory,</b>	
<b>Dec. 31</b>	<b>400,000</b>	<b>Dec. 31</b>	<b>80,000</b>
Cost of goods sold	<u>\$ 320,000</u>	Cost of goods sold	<u>\$ 380,000</u>

**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 units are called **beginning work in process inventory**. The costs the company assigns to beginning work in process inventory are based on the **manufacturing costs incurred in the prior period**.

Current Designs first incurs manufacturing costs in the current year to complete the work that was 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 1-6 (page 14) shows the formula for determining the cost of goods manufactured.

LEARNING OBJECTIVE **6**

Indicate how cost of goods manufactured is determined.

**Illustration 1-6**  
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 1-7 shows the schedule for Current Designs (using assumed data). The schedule presents detailed data for direct materials and for manufacturing overhead.

Review Illustration 1-6 and then examine the cost of goods manufactured schedule in Illustration 1-7. You should be able to distinguish between “Total manufacturing costs” and “Cost of goods manufactured.” The difference is the effect of the change in work in process during the period.

**Illustration 1-7**  
Cost of goods manufactured schedule

Current Designs			
Cost of Goods Manufactured Schedule			
For the Year Ended December 31, 2014			
<b>Work in process, January 1</b>			<b>\$ 18,400</b>
<b>Direct materials</b>			
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	
<b>Direct labor</b>		175,600	
<b>Manufacturing overhead</b>			
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	
<b>Total manufacturing costs</b>			<b>376,800</b>
Total cost of work in process			395,200
<b>Less: Work in process, December 31</b>			<b>25,200</b>
<b>Cost of goods manufactured</b>			<b>\$370,000</b>

*Often, numbers or categories in the financial statements are highlighted in red type to draw your attention to key information.*

*Each chapter presents useful information about how decision-makers analyze and solve business problems. **Decision Toolkits** summarize the key features of a decision tool and review why and how to use it.*

## DECISION TOOLKIT



DECISION CHECKPOINTS	INFO NEEDED FOR DECISION	TOOL TO USE FOR DECISION	HOW TO EVALUATE RESULTS
Is the company maintaining control over the costs of production?	Cost of material, labor, and overhead	Cost of goods manufactured schedule	Compare the cost of goods manufactured to revenue expected from product sales.



> **DO IT!**

**Cost of Goods Manufactured**

The following information is available for Keystone Company.

	<u>March 1</u>	<u>March 31</u>
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.

**Solution**

**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.
- ✓ 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.




<b>Keystone Company</b>		
<b>Cost of Goods Manufactured Schedule</b>		
<b>For the Month Ended March 31</b>		
Work in process, March 1		\$ 2,500
Direct materials		
Raw materials, March 1	\$ 12,000	
Raw material 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		<u>\$385,500</u>

Related exercise material: **BE1-8, BE1-10, BE1-11, E1-8, E1-9, E1-10, E1-11, E1-12, E1-13, E1-14, E1-15, E1-16, E1-17, and DO IT! 1-3.**



**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 1-8.

<p><b>Raw Materials Inventory</b></p>  <p>Shows the cost of raw materials on hand.</p>	<p><b>Work in Process Inventory</b></p>  <p>Shows the cost applicable to units that have been started into production but are only partially completed.</p>	<p><b>Finished Goods Inventory</b></p>  <p>Shows the cost of completed goods on hand.</p>
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**LEARNING OBJECTIVE 7**

Explain the difference between a merchandising and a manufacturing balance sheet.

**Illustration 1-8**  
Inventory accounts for a manufacturer

Finished Goods Inventory is to a manufacturer what Merchandise 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 1-9 contrast the presentations of inventories for merchandising and manufacturing companies. Manufacturing companies generally list their inventories in the order of their liquidity—the order in which they are expected to be realized in cash. Thus, finished goods inventory comes first. The remainder of the balance sheet is similar for the two types of companies.

### Illustration 1-9

Current assets sections of merchandising and manufacturing balance sheets

Merchandising Company Balance Sheet December 31, 2014		Manufacturing Company Balance Sheet December 31, 2014	
Current assets		Current assets	
Cash	\$100,000	Cash	\$180,000
Receivables (net)	210,000	Receivables (net)	210,000
<b>Merchandise inventory</b>	<b>400,000</b>	<b>Inventories</b>	
Prepaid expenses	22,000	<b>Finished goods</b>	<b>\$80,000</b>
Total current assets	<u>\$732,000</u>	<b>Work in process</b>	<b>25,200</b>
		<b>Raw materials</b>	<b>22,800</b>
		Prepaid expenses	18,000
		Total current assets	<u>\$536,000</u>

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.

## DECISION TOOLKIT



DECISION CHECKPOINTS	INFO NEEDED FOR DECISION	TOOL TO USE FOR DECISION	HOW TO EVALUATE RESULTS
What is the composition of a manufacturing company's inventory?	Amount of raw materials, work in process, and finished goods inventories	Balance sheet	Determine whether there are sufficient finished goods, raw materials, and work in process inventories to meet forecasted demand.


### Cost Concepts—A Review

You have learned a number of cost concepts in this chapter. Because many of these concepts are new, we provide here an extended example for review. 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 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 1-10 shows how Terrain Park Boards would assign these manufacturing and selling costs to the various categories.

Terrain Park Boards 	Product Costs			Period Costs
	Direct Materials	Direct Labor	Manufacturing Overhead	
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

**Illustration 1-10**  
Assignment of costs to cost categories

Remember that total manufacturing costs are the sum of the **product costs**—direct materials, direct labor, and manufacturing overhead. If Terrain Park Boards produces 10,000 snowboards the first year, the total manufacturing costs would be \$846,000 as shown in Illustration 1-11 (page 18).

**Illustration 1-11**  
Computation of total  
manufacturing costs

<u>Cost Number and Item</u>	<u>Manufacturing Cost</u>
1. Material cost ( $\$30 \times 10,000$ )	\$300,000
2. Labor cost ( $\$40 \times 10,000$ )	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
<b>Total manufacturing costs</b>	<b><u><u>\$846,000</u></u></b>

Knowing 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 ( $\$846,000 \div 10,000$  units).

In subsequent chapters, we will use extensively the cost concepts discussed in this chapter. So study Illustration 1-10 carefully. If you do not understand any of these classifications, go back and reread the appropriate section in this chapter.

### Product Costing for 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. For example, when a restaurant produces a meal, that meal is not put in inventory, but it 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.



#### 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?

*Ethics Notes help sensitize you to some of the ethical issues in accounting.*

This chapter's examples used 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. 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, 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 providing 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 used by the employees to provide the consulting service. 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 provided schedule similar to the cost of goods manufactured schedule in Illustration 1-7 (page 14). 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. To highlight the relevance of the techniques used in this course for service companies, we have placed a service company icon next to those items in the text and end-of-chapter materials that relate to nonmanufacturing companies.

## SERVICE COMPANY INSIGHT



### Low Fares but Decent Profits

During 2008, when other airlines were cutting flight service due to the 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. 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. It purchases used planes for \$4 million each rather than new planes for \$40 million. It flies out of small towns, so wages are low and competition is nonexistent. It only flies a route if its 150-passenger planes are nearly full (it averages about 90% of capacity). If a route isn't filling up, it quits flying it as often or cancels it altogether. It adjusts its prices weekly. The bottom line is that it knows its costs to the penny. Knowing what your costs are might not be glamorous, but it sure beats losing money.



Source: Susan Carey, "For Allegiant, Getaways Mean Profits," *Wall Street Journal Online* (February 18, 2009).



What are some of the line items that would appear in the cost of services provided schedule of an airline? (See page 47.)

## Managerial Accounting Today

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 must continue to innovate in order to provide managers with the information they need.

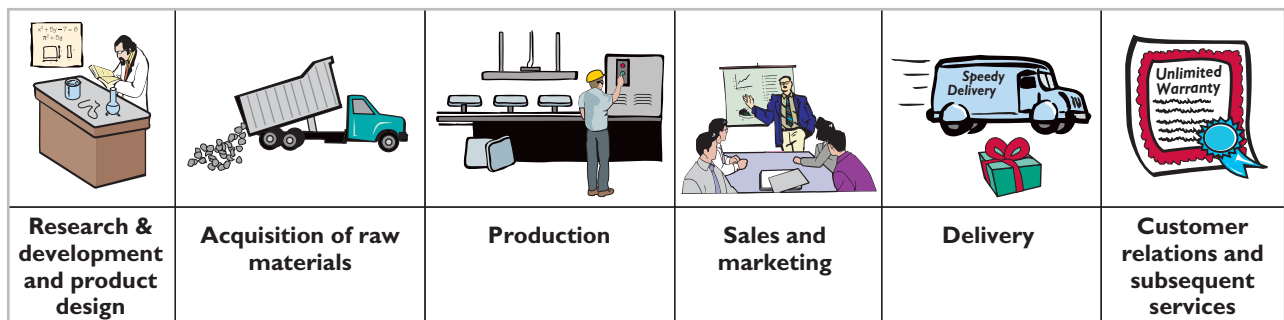
LEARNING OBJECTIVE 8

Identify trends in managerial accounting.

### Focus on the Value Chain

The **value chain** refers to all business processes associated with providing a product or service. Illustration 1-12 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 1-12**  
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 deliver a computer within 48 hours of a customer's custom 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 have to stop production, deliveries will be delayed and customers will be unhappy. For example, a recent 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. The TQM philosophy has been employed by some of the most successful businesses to improve all aspects of the value chain.

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 eliminating bottlenecks, it improved its use of overtime labor while meeting customer demand. An application of the theory of constraints is presented in Chapter 6.

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 increased because of factory automation, the accuracy of overhead cost allocation to specific products became 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. ABC is discussed further in Chapter 4.

## 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 11, is now used by many companies, including **Hilton Hotels**, **Wal-Mart Stores, Inc.**, and **HP**.

## 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 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**. 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 the Forbes.com list of the 100 most sustainable companies in the world. Ever hear of **General Electric**, **adidas**, **Toyota**, **Coca-Cola**, or **Starbucks**? 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. 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.

### > DO IT!

#### Trends in Managerial Accounting

Match the descriptions that follow with the corresponding terms.

##### Descriptions:

1. \_\_\_\_ All activities associated with providing a product or 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.

##### Terms:

- a. Activity-based costing
- b. Balanced scorecard
- c. Just-in-time (JIT) inventory
- d. Total quality management (TQM)
- e. 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. e 2. a 3. d 4. b 5. c

Related exercise material: **E1-18** and **DO IT! 1-4**.

*Using the Decision Toolkit exercises ask you to use business information and the decision tools presented in the chapter. We encourage you to think through the questions related to the decision before you study the Solution.*

## USING THE DECISION TOOLKIT



Giant Bike Co. Ltd. produces many different models of bicycles. Assume that the market has responded enthusiastically to a new model, the Jaguar. As a result, the company has established a separate manufacturing facility to produce these bicycles. The company produces 1,000 bicycles per month. Giant's monthly manufacturing costs and other data are as follows.

1. Rent on manufacturing equipment (lease cost)	\$2,000/month	8. Miscellaneous manufacturing materials (lubricants, solders, etc.)	\$1.20/bicycle
2. Insurance on manufacturing building	\$750/month	9. Property taxes on manufacturing building	\$2,400/year
3. Raw materials (frames, tires, etc.)	\$80/bicycle	10. Manufacturing supervisor's salary	\$3,000/month
4. Utility costs for manufacturing facility	\$1,000/month	11. Advertising for bicycles	\$30,000/year
5. Supplies for administrative office	\$800/month	12. Sales commissions	\$10/bicycle
6. Wages for assembly line workers in manufacturing facility	\$30/bicycle	13. Depreciation on manufacturing building	\$1,500/month
7. Depreciation on office equipment	\$650/month		

### Instructions

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

<u>Cost Item</u>	<u>Product Costs</u>			<u>Period Costs</u>
	<u>Direct Materials</u>	<u>Direct Labor</u>	<u>Manufacturing Overhead</u>	

Enter each cost item on your answer sheet, placing an "X" mark under the appropriate headings.

(b) Compute total manufacturing costs for the month.

### Solution

<u>Cost Item</u>	<u>Product Costs</u>			<u>Period Costs</u>
	<u>Direct Materials</u>	<u>Direct Labor</u>	<u>Manufacturing Overhead</u>	
1. Rent on manufacturing equipment (\$2,000/month)			X	
2. Insurance on manufacturing building (\$750/month)			X	
3. Raw materials (\$80/bicycle)	X			
4. Manufacturing utilities (\$1,000/month)			X	
5. Office supplies (\$800/month)				X
6. Wages for assembly workers (\$30/bicycle)		X		
7. Depreciation on office equipment (\$650/month)				X
8. Miscellaneous manufacturing materials (\$1.20/bicycle)			X	



Cost Item	Product Costs			Period Costs
	Direct Materials	Direct Labor	Manufacturing Overhead	
9. Property taxes on manufacturing building (\$2,400/year)			X	
10. Manufacturing supervisor's salary (\$3,000/month)			X	
11. Advertising cost (\$30,000/year)				X
12. Sales commissions (\$10/bicycle)				X
13. Depreciation on manufacturing building (\$1,500/month)			X	

(b) Cost Item	Manufacturing Cost
Rent on manufacturing equipment	\$ 2,000
Insurance on manufacturing building	750
Raw materials ( $\$80 \times 1,000$ )	80,000
Manufacturing utilities	1,000
Labor ( $\$30 \times 1,000$ )	30,000
Miscellaneous materials ( $\$1.20 \times 1,000$ )	1,200
Property taxes on manufacturing building ( $\$2,400 \div 12$ )	200
Manufacturing supervisor's salary	3,000
Depreciation on manufacturing building	1,500
Total manufacturing costs	<u>\$119,650</u>



The *Summary of Learning Objectives* reiterates the main points related to the Learning Objectives. It provides you with an opportunity to review what you have learned.

## SUMMARY OF LEARNING OBJECTIVES



- 1 Explain the distinguishing features of managerial accounting.** The *primary users* of managerial accounting reports are internal users, who are officers, department heads, managers, and supervisors in the company. Managerial accounting issues internal reports as frequently as the need arises. 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, 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.
- 2 Identify the three broad functions of management.** The three functions 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.
- 3 Define the three classes of manufacturing 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.
- 4 Distinguish between product and period costs.** Product costs are costs that are a necessary and integral part of producing the finished product. Product costs are also called inventoriable costs. Under the expense recognition principle, 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.

- 5 Explain the difference between a merchandising and a manufacturing income statement.** 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.
- 6 Indicate how cost of goods manufactured is determined.** 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.

**7 Explain the difference between a merchandising and a manufacturing balance sheet.** 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.

**8 Identify trends in managerial accounting.** Managerial accounting has experienced many changes in recent years. 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.

The *Decision Toolkit—A Summary* reviews the contexts and techniques useful for decision-making that were covered in the chapter.

## DECISION TOOLKIT A SUMMARY



DECISION CHECKPOINTS	INFO NEEDED FOR DECISION	TOOL TO USE FOR DECISION	HOW TO EVALUATE RESULTS
Is the company maintaining control over the costs of production?	Cost of material, labor, and overhead	Cost of goods manufactured schedule	Compare the cost of goods manufactured to revenue expected from product sales.
What is the composition of a manufacturing company's inventory?	Amount of raw materials, work in process, and finished goods inventories	Balance sheet	Determine whether there are sufficient finished goods, raw materials, and work in process inventories to meet forecasted demand.

## GLOSSARY

**Activity-based costing (ABC)** A method of allocating overhead based on each product's use of activities in making the product. (p. 20).

**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. 20).

**Board of directors** The group of officials elected by the stockholders of a corporation to formulate operating policies, select officers, and otherwise manage the company. (p. 6).

**Chief executive officer (CEO)** Corporate officer who has overall responsibility for managing the business and delegates responsibilities to other corporate officers. (p. 6).

**Chief financial officer (CFO)** Corporate officer who is responsible for all of the accounting and finance issues of the company. (p. 7).

**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. 7).

**Corporate social responsibility** The efforts of a company to employ sustainable business practices with regard to its employees and the environment. (p. 21).

**Cost of goods manufactured** Total cost of work in process less the cost of the ending work in process inventory. (p. 13).

**Direct labor** The work of factory employees that can be physically and directly associated with converting raw materials into finished goods. (p. 10).

**Direct materials** Raw materials that can be physically and directly associated with manufacturing the finished product. (p. 10).

**Enterprise resource planning (ERP) system** Software that provides a comprehensive, centralized, integrated source of information used to manage all major business processes. (p. 20).

**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. 10).

**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. 10).

**Just-in-time (JIT) inventory** Inventory system in which goods are manufactured or purchased just in time for sale. (p. 20).

**Line positions** Jobs that are directly involved in a company's primary revenue-generating operating activities. (p. 6).

**Managerial accounting** A field of accounting that provides economic and financial information for managers and other internal users. (p. 4).

**Manufacturing overhead** Manufacturing costs that are indirectly associated with the manufacture of the finished product. (p. 10).

**Period costs** Costs that are matched with the revenue of a specific time period and charged to expense as incurred. (p. 11).

**Product costs** Costs that are a necessary and integral part of producing the finished product. (p. 11).

**Sarbanes-Oxley Act (SOX)** Law passed by Congress intended to reduce unethical corporate behavior. (p. 8).

**Staff positions** Jobs that support the efforts of line employees. (p. 6).

**Theory of constraints** A specific approach used to identify and manage constraints in order to achieve the company's goals. (p. 20).

**Total cost of work in process** Cost of the beginning work in process plus total manufacturing costs for the current period. (p. 13).

**Total manufacturing costs** The sum of direct materials, direct labor, and manufacturing overhead incurred in the current period. (p. 13).

**Total quality management (TQM)** Systems implemented to reduce defects in finished products with the goal of achieving zero defects. (p. 20).

**Treasurer** Financial officer responsible for custody of a company's funds and for maintaining its cash position. (p. 7).

**Triple bottom line** The evaluation of a company's social responsibility performance with regard to people, planet, and profit. (p. 21).

**Value chain** All activities that a business processes with providing a product or service. (p. 19).

## > Comprehensive DO IT!

*Comprehensive DO IT! exercises are a final review before you begin homework. An Action Plan that appears in the margin gives you tips about how to approach the problem, and the Solution provided demonstrates both the form and content of complete answers.*

Superior Company has the following cost and expense data for the year ending December 31, 2014.

Raw materials, 1/1/14	\$ 30,000	Insurance, factory	\$ 14,000
Raw materials, 12/31/14	20,000	Property taxes, factory building	6,000
Raw materials purchases	205,000	Sales revenue	1,500,000
Indirect materials	15,000	Delivery expenses	100,000
Work in process, 1/1/14	80,000	Sales commissions	150,000
Work in process, 12/31/14	50,000	Indirect labor	90,000
Finished goods, 1/1/14	110,000	Factory machinery rent	40,000
Finished goods, 12/31/14	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

### Instructions

- Prepare a cost of goods manufactured schedule for Superior Company for 2014.
- Prepare an income statement for Superior Company for 2014.

- (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, 2014.

**Solution to Comprehensive DO IT!**

**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 total manufacturing overhead to determine total manufacturing costs.
- ✓ 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.
- ✓ In the cost of goods sold section of the income statement, show beginning and ending finished goods inventory and cost of goods manufactured.
- ✓ In the balance sheet, list manufacturing inventories in the order of their expected realization in cash, with finished goods first.

(a)		
<b>Superior Company</b>		
<b>Cost of Goods Manufactured Schedule</b>		
<b>For the Year Ended December 31, 2014</b>		
Work in process, 1/1		\$ 80,000
Direct materials		
Raw materials inventory, 1/1	\$ 30,000	
Raw materials purchases	<u>205,000</u>	
Total raw materials available for use	235,000	
Less: Raw materials inventory, 12/31	<u>20,000</u>	
Direct materials used		\$215,000
Direct labor		350,000
Manufacturing overhead		
Indirect labor	90,000	
Factory utilities	65,000	
Factory machinery rent	40,000	
Factory manager's salary	35,000	
Depreciation, factory building	24,000	
Indirect materials	15,000	
Insurance, factory	14,000	
Property taxes, factory building	<u>6,000</u>	
Total manufacturing overhead		<u>289,000</u>
Total manufacturing costs		<u>854,000</u>
Total cost of work in process		934,000
Less: Work in process, 12/31		<u>50,000</u>
Cost of goods manufactured		<u>\$ 884,000</u>

(b)		
<b>Superior Company</b>		
<b>Income Statement</b>		
<b>For the Year Ended December 31, 2014</b>		
Sales revenue		\$1,500,000
Cost of goods sold		
Finished goods inventory, January 1	\$110,000	
Cost of goods manufactured	<u>884,000</u>	
Cost of goods available for sale	994,000	
Less: Finished goods inventory, December 31	<u>120,000</u>	
Cost of goods sold		<u>874,000</u>
Gross profit		626,000
Operating expenses		
Administrative expenses	300,000	
Sales commissions	150,000	
Delivery expenses	<u>100,000</u>	
Total operating expenses		<u>550,000</u>
Net income		<u>\$ 76,000</u>



(c)

<b>Superior Company</b>		
<b>Balance Sheet (partial)</b>		
<b>December 31, 2014</b>		
Current assets		
Cash		\$ 17,000
Short-term investments		26,000
Accounts receivable (net)		120,000
Inventories		
Finished goods	\$120,000	
Work in process	50,000	
Raw materials	<u>20,000</u>	190,000
Prepaid expenses		<u>13,000</u>
Total current assets		<u>\$366,000</u>



This would be a good time to return to the **Preface** at the beginning of the textbook (or look at it for the first time if you skipped it before) to read about the various types of homework materials that appear at the ends of

chapters. Knowing the purpose of different assignments will help you appreciate what each contributes to your accounting skills and competencies.



Self-Test, Brief Exercises, Exercises, Problem Set A, and many more resources are available for practice in WileyPLUS.

## SELF-TEST QUESTIONS

Answers are at the end of the chapter.

- (LO 1) 1. Managerial accounting:
- is governed by generally accepted accounting principles.
  - places emphasis on special-purpose information.
  - pertains to the entity as a whole and is highly aggregated.
  - is limited to cost data.
- (LO 2) 2. The management of an organization performs several broad functions. They are:
- planning, directing, and selling.
  - planning, directing, and controlling.
  - planning, manufacturing, and controlling.
  - directing, manufacturing, and controlling.
- (LO 2) 3. After passage of the Sarbanes-Oxley Act:
- reports prepared by managerial accountants must be audited by CPAs.
  - CEOs and CFOs must certify that financial statements give a fair presentation of the company's operating results.
  - the audit committee, rather than top management, is responsible for the company's financial statements.
  - reports prepared by managerial accountants must comply with generally accepted accounting principles (GAAP).
4. Direct materials are a: (LO 3)
- |     | <u>Product<br/>Cost</u> | <u>Manufacturing<br/>Overhead</u> | <u>Period<br/>Cost</u> |
|-----|-------------------------|-----------------------------------|------------------------|
| (a) | Yes                     | Yes                               | No                     |
| (b) | Yes                     | No                                | No                     |
| (c) | Yes                     | Yes                               | Yes                    |
| (d) | No                      | No                                | No                     |
5. Which of the following costs would a computer manufacturer include in manufacturing overhead? (LO 3)
- The cost of the disk drives.
  - The wages earned by computer assemblers.
  - The cost of the memory chips.
  - Depreciation on testing equipment.
6. Which of the following is *not* an element of manufacturing overhead? (LO 3)
- Sales manager's salary.
  - Plant manager's salary.
  - Factory repairman's wages.
  - Product inspector's salary.
7. Indirect labor is a: (LO 4)
- nonmanufacturing cost.
  - raw material cost.
  - product cost.
  - period cost.

- (LO 4) 8. 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.
- (LO 5) 9. 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.
- (LO 5) 10. 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.
- (LO 6) 11. 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.
- (LO 6) 12. 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 good inventory + Total manufacturing costs – Ending finished goods inventory.  
 (d) Beginning work in process inventory + Total manufacturing costs – Ending work in process inventory.
13. A manufacturer may report three inventories on its balance sheet: (1) raw materials, (2) work in process, and (3) finished goods. Indicate in what sequence these inventories generally appear on a balance sheet.  
 (a) (1), (2), (3)  
 (b) (2), (3), (1)  
 (c) (3), (1), (2)  
 (d) (3), (2), (1)
14. Which of the following managerial accounting techniques attempts to allocate manufacturing overhead in a more meaningful fashion? (LO 8)  
 (a) Just-in-time inventory.  
 (b) Total quality management.  
 (c) Balanced scorecard.  
 (d) Activity-based costing.
15. Corporate social responsibility refers to: (LO 8)  
 (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.

Go to the book's companion website, [www.wiley.com/college/wegandt](http://www.wiley.com/college/wegandt), for additional Self-Test Questions.



## QUESTIONS

- (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.
- Distinguish between managerial and financial accounting as to (a) primary users of reports, (b) types and frequency of reports, and (c) purpose of reports.
- How do the content of reports and the verification of reports differ between managerial and financial accounting?
- In what ways can the budgeting process create incentives for unethical behavior?
- Linda Olsen is studying for the next accounting midterm examination. Summarize for Linda what she should know about management functions.
- "Decision-making is management's most important function." Do you agree? Why or why not?
- Explain the primary difference between line positions and staff positions, and give examples of each.
- What new rules were enacted under the Sarbanes-Oxley Act to address unethical accounting practices?
- Tony Andres is studying for his next accounting examination. Explain to Tony what he should know about the differences between the income statements for a manufacturing and for a merchandising company.
- 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.
- How are manufacturing costs classified?
- Mel Finney claims that the distinction between direct and indirect materials is based entirely on physical association with the product. Is Mel correct? Why?

13. Tina Burke is confused about the differences between a product cost and a period cost. Explain the differences to Tina.
14. Identify the differences in the cost of goods sold section of an income statement between a merchandising company and a manufacturing company.
15. 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)  $A + B - C = x$
16. 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?
17. 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?
18. Using the data in Question 17, what are (a) the total cost of work in process and (b) the cost of goods manufactured?
19. In what order should manufacturing inventories be listed in a balance sheet?
20. How does the output of manufacturing operations differ from that of service operations?
21. Discuss whether the product costing techniques discussed in this chapter apply equally well to manufacturers and service companies.
22. What is the value chain? Describe, in sequence, the main components of a manufacturer's value chain.
23. What is an enterprise resource planning (ERP) system? What are its primary benefits?
24. Why is product quality important for companies that implement a just-in-time inventory system?
25. Explain what is meant by "balanced" in the balanced scorecard approach.
26. What is activity-based costing, and what are its potential benefits?

## BRIEF EXERCISES

**BE1-1** Complete the following comparison table between managerial and financial accounting.

	<u>Financial Accounting</u>	<u>Managerial Accounting</u>
Primary users of reports		
Types of reports		
Frequency of reports		
Purpose of reports		
Content of reports		
Verification process		

*Distinguish between managerial and financial accounting.*

(LO 1), C

**BE1-2** The Sarbanes-Oxley Act (SOX) has important implications for the financial community. Explain two implications of SOX.

*Identify important regulatory changes.*

(LO 2), C

**BE1-3** Listed below are the three functions of the management of an organization.

1. Planning
2. Directing
3. Controlling

*Identify the three management functions.*

(LO 2), C

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 must determine whether goals are being met and what changes are necessary when there are deviations.

**BE1-4** Determine whether each of the following costs should be classified as direct materials (DM), direct labor (DL), or manufacturing overhead (MO).

*Classify manufacturing costs.*

(LO 3), C

- (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.  
(LO 3), C

- BE1-5** 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.  
(LO 4), C

- BE1-6** 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 material.

Classify manufacturing costs.  
(LO 3), C

- BE1-7** Presented below are Dieker Company's monthly manufacturing cost data related to its personal computer products.
- (a) Utilities for manufacturing equipment \$116,000
  - (b) Raw material (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.  
(LO 6), AP

- BE1-8** 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.  
(LO 7), AP

- BE1-9** In alphabetical order below are current asset items for Ruiz Company's balance sheet at December 31, 2014. 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	73,000
Work in process	87,000

Determine missing amounts in computing total manufacturing costs.  
(LO 6), AP

- BE1-10** Presented below are incomplete manufacturing cost data. Determine the missing amounts for three different situations.

	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

Determine missing amounts in computing cost of goods manufactured.  
(LO 6), AP

- BE1-11** Use the same data from BE1-10 above and the data below. Determine the missing amounts.

	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	\$321,000
(3)	\$310,000	\$463,000	?	\$715,000



## > DO IT! REVIEW

**DO IT! 1-1** Indicate whether the following statements are true or false.

1. Managerial accountants explain and report manufacturing and nonmanufacturing costs, determine cost behaviors, and perform cost-volume-profit analysis, but are not involved in the budget process.
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.
5. As a result of the Sarbanes-Oxley Act (SOX), top managers must certify that the company maintains an adequate system of internal control.
6. Management accountants follow a code of ethics developed by the Institute of Management Accountants.

*Identify managerial accounting concepts.*

(LO 1, 2), C

**DO IT! 1-2** A music company has these costs:

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

*Identify managerial cost concepts.*

(LO 3, 4), C

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! 1-3** The following information is available for Fishel Company.

	<u>April 1</u>	<u>April 30</u>
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	180,000	

*Prepare cost of goods manufactured schedule.*

(LO 6), AP

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

**DO IT! 1-4** Match the descriptions that follow with the corresponding terms.

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. \_\_\_\_\_ One part of the value chain for a manufacturing company.
5. \_\_\_\_\_ The U.S. economy is trending toward this.
6. \_\_\_\_\_ 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.

*Identify trends in managerial accounting.*

(LO 8), C

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



## EXERCISES

Identify distinguishing features of managerial accounting.

(LO 1), C

**E1-1** Richard Larkin has prepared the following list of statements about managerial accounting and financial accounting.

1. Financial accounting focuses on providing information to internal users.
2. Analyzing cost-volume-profit relationships is part of managerial accounting.
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. Although managerial accountants are expected to behave ethically, there is no code of ethical standards for managerial accountants.

**Instructions**

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

Classify costs into three classes of manufacturing costs.

(LO 3), C

**E1-2** 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.

(LO 3, 4), C

**E1-3** Ryan Corporation incurred the following costs while manufacturing its product.

Materials used in product	\$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.

Determine the total amount of various types of costs.

(LO 3, 4), AP

**E1-4** Knight Company reports the following costs and expenses in May.

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.

**E1-5** Ikerd Company is a manufacturer of personal computers. Various costs and expenses associated with its operations are as follows.

- 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 personal computers.
- 7. Electrical components used in assembling computers.
- 8. Wages of workers assembling personal 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.

**E1-6** 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.

- 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.

**E1-7** Kwik Delivery Service reports the following costs and expenses in June 2014.

Indirect materials	\$ 5,400	Drivers' salaries	\$16,000
Depreciation on delivery equipment	11,200	Advertising	3,600
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.

**E1-8** 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
Factory supplies used	23,000	Salaries paid to sales clerks	50,000

*Classify various costs into different cost categories.*

**(LO 3, 4), C**

*Classify various costs into different cost categories.*

**(LO 3), C**



*Homework materials related to service companies are indicated by this icon.*

*Classify various costs into different cost categories.*

**(LO 4), AP**



*Compute cost of goods manufactured and sold.*

**(LO 5, 6), AP**

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.

(LO 6), AP

**E1-9** An incomplete cost of goods manufactured schedule is presented below.

**Molina Company**  
**Cost of Goods Manufactured Schedule**  
**For the Year Ended December 31, 2014**

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		\$190,000
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		\$530,000

**Instructions**

Complete the cost of goods manufactured schedule for Molina Company.

Determine the missing amount of different cost items.

(LO 6), AN

**E1-10** 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 1/1/14	(b)	16,500	(h)
Total cost of work in process	221,500	(e)	337,000
Work in process 12/31/14	(c)	11,000	70,000
Cost of goods manufactured	185,275	(f)	(i)

**Instructions**

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

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

(LO 6), AN

**E1-11** Incomplete manufacturing cost data for Colaw Company for 2014 are presented as follows for four different situations.

	Direct Materials Used	Direct Labor Used	Manufac- turing Overhead	Total Manufac- turing Costs	Work in Process 1/1	Work in Process 12/31	Cost of Goods Manufactured
(1)	\$127,000	\$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)	255,000	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, 2014.

**E1-12** Cepeda Corporation has the following cost records for June 2014.

Indirect factory labor	\$ 4,500	Factory utilities	\$ 400
Direct materials used	20,000	Depreciation, factory equipment	1,400
Work in process, 6/1/14	3,000	Direct labor	40,000
Work in process, 6/30/14	3,800	Maintenance, factory equipment	1,800
Finished goods, 6/1/14	5,000	Indirect materials	2,200
Finished goods, 6/30/14	7,500	Factory manager's salary	3,000

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

(LO 5, 6), AP



**Instructions**

- (a) Prepare a cost of goods manufactured schedule for June 2014.
- (b) Prepare an income statement through gross profit for June 2014 assuming sales revenue is \$92,100.

**E1-13** Joyce Tombert, the bookkeeper for Marks 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. Joyce 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 provided schedule.

(LO 4, 5, 6), AN

Listed below are the costs her firm incurred for the month ended August 31, 2014.

Supplies used on consulting contracts	\$ 1,200
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	400
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 provided (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.

**E1-14** The following information is available for Aikman Company.

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

	<u>January 1, 2014</u>	<u>2014</u>	<u>December 31, 2014</u>
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	

(LO 5, 6, 7), AP

**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, 2014, 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.

(LO 5, 6, 7), C

**E1-15** Chambers Company produces blankets. From its accounting records, it prepares the following schedule and financial statements on a yearly basis.

- Cost of goods manufactured schedule.
- Income statement.
- Balance sheet.

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

- Direct labor
- Raw materials inventory, 1/1
- Work in process inventory, 12/31
- Finished goods inventory, 1/1
- Indirect labor
- Depreciation on factory machinery
- Work in process, 1/1
- Finished goods inventory, 12/31
- Factory maintenance salaries
- Cost of goods manufactured
- Depreciation on delivery equipment
- Cost of goods available for sale
- Direct materials used
- Heat and electricity for factory
- Repairs to roof of factory building
- 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.

(LO 6, 7), AP



**E1-16** An analysis of the accounts of Roberts Company reveals the following manufacturing cost data for the month ended June 30, 2014.

<u>Inventories</u>	<u>Beginning</u>	<u>Ending</u>
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, miscellaneous factory costs \$1,500. Assume that all raw materials used were direct materials.

#### Instructions

- Prepare the cost of goods manufactured schedule for the month ended June 30, 2014.
- Show the presentation of the ending inventories on the June 30, 2014, balance sheet.


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

(LO 5, 6, 7), AP

**E1-17** Buhler Motor Company manufactures automobiles. During September 2014, the company purchased 5,000 head lamps at a cost of \$10 per lamp. Buhler withdrew 4,650 lamps from the warehouse during the month. Fifty of these lamps were used to replace the head lamps in autos used by traveling sales staff. The remaining 4,600 lamps were put in autos manufactured during the month.

Of the autos put into production during September 2014, 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

- Determine the cost of head lamps that would appear in each of the following accounts at September 30, 2014: Raw Materials, Work in Process, Finished Goods, Cost of Goods Sold, and Selling Expenses.
-  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, 2014.

**E1-18** The following is a list of terms related to managerial accounting practices.

1. Activity-based costing.
2. Just-in-time inventory.
3. Balanced scorecard.
4. Value chain.

Identify various managerial accounting practices.

(LO 8), C

**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 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.

**EXERCISES: SET B AND CHALLENGE EXERCISES**

Visit the book's companion website, at [www.wiley.com/college/veygandt](http://www.wiley.com/college/veygandt), and choose the Student Companion site to access Exercise Set B and Challenge Exercises.

**PROBLEMS: SET A**

**P1-1A** Lott 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). Lott's monthly manufacturing cost and other expense data are as follows.

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

(LO 3, 4), AP

Rent on factory equipment	\$ 9,000
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	53,000
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

Marginal check figures for parts of some problems, in most chapters, provide key numbers to confirm that you are on the right track in your computations.

**Instructions**

- (a) Prepare an answer sheet with the following column headings.

- (a) DM \$75,000
- DL \$53,000
- MO \$20,100
- PC \$25,100

	<b>Product Costs</b>				
<b>Cost Item</b>	<b>Direct Materials</b>	<b>Direct Labor</b>	<b>Manufacturing Overhead</b>	<b>Period Costs</b>	

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.

**P1-2A** Bell Company, a manufacturer of audio systems, started its production in October 2014. 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.

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

(LO 3, 4), AP

Raw materials cost 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.

**Instructions**

- (a) DM \$111,000
- DL \$ 90,000
- MO \$ 18,100
- PC \$ 9,500

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

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

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.

(LO 5, 6, 7), AN

**P1-3A** Incomplete manufacturing costs, expenses, and selling data for two different cases are as follows.

	Case	
	1	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	22,000
Beginning finished goods inventory	(c)	3,300
Goods available for sale	20,000	(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**

- (b) Ending WIP \$ 6,600
- (c) Current assets \$30,000

(a) Indicate the missing amount for each letter.  
 (b) Prepare a condensed cost of goods manufactured schedule for Case 1.  
 (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 \$4,000, Receivables (net) \$15,000, Raw Materials \$600, and Prepaid Expenses \$400.

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

(LO 5, 6, 7), AP



**P1-4A** The following data were taken from the records of Clarkson Company for the fiscal year ended June 30, 2014.

Raw Materials		Factory Insurance	\$ 4,600
Inventory 7/1/13	\$ 48,000	Factory Machinery	
Raw Materials		Depreciation	16,000
Inventory 6/30/14	39,600	Factory Utilities	27,600
Finished Goods		Office Utilities Expense	8,650
Inventory 7/1/13	96,000	Sales Revenue	534,000
Finished Goods		Sales Discounts	4,200
Inventory 6/30/14	75,900	Plant Manager's Salary	58,000

Work in Process		Factory Property Taxes	\$ 9,600
Inventory 7/1/13	\$ 19,800	Factory Repairs	1,400
Work in Process		Raw Materials Purchases	96,400
Inventory 6/30/14	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, 2014.

(a) CGM \$386,910

(b) Gross profit \$122,790

(c) Current assets \$193,100

**P1-5A** Phillips Company is a manufacturer of computers. Its controller resigned in October 2014. An inexperienced assistant accountant has prepared the following income statement for the month of October 2014.

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

(LO 5, 6), AN



**Phillips Company**  
**Income Statement**  
**For the Month Ended October 31, 2014**

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	<u>803,000</u>
Net loss		<u><u>\$ (23,000)</u></u>

Prior to October 2014, 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:

	<u>October 1</u>	<u>October 31</u>
Raw materials	\$18,000	\$29,000
Work in process	16,000	14,000
Finished goods	30,000	45,000

- 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 2014.
- (b) Prepare a correct income statement for October 2014.

(a) CGM \$577,800

(b) NI \$ 1,000

**PROBLEMS: SET B**

**P1-1B** Agler Company specializes in manufacturing motorcycle helmets. The company has enough orders to keep the factory production at 1,000 motorcycle helmets per month. Agler's monthly manufacturing cost and other expense data are shown on the next page.

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

(LO 3, 4), AP



Maintenance costs on factory building	\$ 1,500
Factory manager's salary	5,500
Advertising for helmets	8,000
Sales commissions	4,000
Depreciation on factory building	700
Rent on factory equipment	6,000
Insurance on factory building	3,000
Raw materials (plastic, polystyrene, etc.)	25,000
Utility costs for factory	800
Supplies for general office	200
Wages for assembly line workers	54,000
Depreciation on office equipment	500
Miscellaneous materials (glue, thread, etc.)	2,000

**Instructions**

- (a) DM \$25,000
- DL \$54,000
- MO \$19,500
- PC \$12,700

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

	<b>Product Costs</b>			
<b>Cost Item</b>	<b>Direct Materials</b>	<b>Direct Labor</b>	<b>Manufacturing Overhead</b>	<b>Period Costs</b>

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 motorcycle helmet.

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

(LO 3, 4), AP

**P1-2B** Elliott Company, a manufacturer of tennis rackets, started production in November 2013. For the preceding 5 years, Elliott had been a retailer of sports equipment. After a thorough survey of tennis racket markets, Elliott decided to turn its retail store into a tennis racket factory.

Raw materials cost for a tennis racket will total \$23 per racket. Workers on the production lines are paid on average \$15 per hour. A racket usually takes 2 hours to complete. In addition, the rent on the equipment used to produce rackets amounts to \$1,300 per month. Indirect materials cost \$3 per racket. A supervisor was hired to oversee production; her monthly salary is \$3,500.

Janitorial costs are \$1,400 monthly. Advertising costs for the rackets will be \$8,000 per month. The factory building depreciation expense is \$8,400 per year. Property taxes on the factory building will be \$9,600 per year.

**Instructions**

- (a) DM \$57,500
- DL \$75,000
- MO \$15,200
- PC \$ 8,000

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

	<b>Product Costs</b>			
<b>Cost Item</b>	<b>Direct Materials</b>	<b>Direct Labor</b>	<b>Manufacturing Overhead</b>	<b>Period Costs</b>

Assuming that Elliott manufactures, on average, 2,500 tennis rackets 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 racket.

*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.*

(LO 5, 6, 7), AN

**P1-3B** Incomplete manufacturing costs, expenses, and selling data for two different cases are as follows.

	<b>Case</b>	
	<b>A</b>	<b>B</b>
Direct materials used	\$ 6,300	\$ (g)
Direct labor	3,000	4,000
Manufacturing overhead	6,000	5,000
Total manufacturing costs	(a)	16,000
Beginning work in process inventory	1,000	(h)
Ending work in process inventory	(b)	2,000
Sales revenue	22,500	(i)
Sales discounts	1,500	1,200
Cost of goods manufactured	15,800	20,000

	Case	
	A	B
Beginning finished goods inventory	\$ (c)	\$ 5,000
Goods available for sale	18,300	(j)
Cost of goods sold	(d)	(k)
Ending finished goods inventory	1,200	2,500
Gross profit	(e)	6,000
Operating expenses	2,700	(l)
Net income	(f)	2,200

**Instructions**

- (a) Indicate the missing amount for each letter.  
 (b) Prepare a condensed cost of goods manufactured schedule for Case A.  
 (c) Prepare an income statement and the current assets section of the balance sheet for Case A. Assume that in Case A the other items in the current assets section are as follows: Cash \$3,000, Receivables (net) \$10,000, Raw Materials \$700, and Prepaid Expenses \$200.

- (b) Beg. WIP \$1,000  
 (c) Current assets \$15,600

**P1-4B** The following data were taken from the records of Moxie Company for the year ended December 31, 2014.

Raw Materials		Factory Insurance	\$ 7,400
Inventory 1/1/14	\$ 47,000	Factory Machinery	
Raw Materials		Depreciation	7,700
Inventory 12/31/14	44,200	Factory Utilities	12,900
Finished Goods		Office Utilities Expense	8,600
Inventory 1/1/14	85,000	Sales Revenue	465,000
Finished Goods		Sales Discounts	2,500
Inventory 12/31/14	57,800	Plant Manager's Salary	60,000
Work in Process		Factory Property Taxes	6,100
Inventory 1/1/14	9,500	Factory Repairs	800
Work in Process		Raw Materials Purchases	62,500
Inventory 12/31/14	8,000	Cash	18,000
Direct Labor	145,100		
Indirect Labor	18,100		
Accounts Receivable	27,000		

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

(LO 5, 6, 7), AP

**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 December 31.

- (a) CGM \$324,900  
 (b) Gross profit \$110,400  
 (c) Current assets \$155,000

**P1-5B** Ortiz Company is a manufacturer of toys. Its controller resigned in August 2014. An inexperienced assistant accountant has prepared the following income statement for the month of August 2014.

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

(LO 5, 6), AN



**Ortiz Company**  
**Income Statement**  
**For the Month Ended August 31, 2014**

Sales revenue		\$675,000
Less: Operating expenses		
Raw materials purchases	\$220,000	
Direct labor cost	160,000	
Advertising expense	75,000	
Selling and administrative salaries	70,000	
Rent on factory facilities	60,000	
Depreciation on sales equipment	50,000	
Depreciation on factory equipment	35,000	
Indirect labor cost	20,000	
Utilities expense	10,000	
Insurance expense	5,000	
		705,000
Net loss		\$ (30,000)

Prior to August 2014, 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 August were:

	<u>August 1</u>	<u>August 31</u>
Raw materials	\$19,500	\$35,000
Work in process	25,000	21,000
Finished goods	40,000	52,000

2. Only 60% of the utilities expense and 70% of the insurance expense apply to factory operations; the remaining amounts should be charged to selling and administrative activities.

#### **Instructions**

(a) CGM \$493,000  
(b) NL \$ (6,500)

(a) Prepare a cost of goods manufactured schedule for August 2014.  
(b) Prepare a correct income statement for August 2014.

## PROBLEMS: SET C

Visit the book's companion website, at [www.wiley.com/college/weygandt](http://www.wiley.com/college/weygandt), and choose the Student Companion site to access Problem Set C.

## WATERWAYS CONTINUING PROBLEM



*The Waterways Problem starts in this chapter and continues in every chapter. You will find the complete problem for each chapter at the book's companion website.*

(Note: The Waterways Problem begins in Chapter 1 and continues in the remaining chapters. You can also find this problem at the book's Student Companion site.)

**WCP1** 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 provides 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, provide 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 Hector 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. Sam Totter is the vice president who heads the sales and marketing area; he oversees 10 well-trained salespeople.

The accounting and finance division of the company is run by Abe Headman, who is the chief financial officer (CFO) and a company vice president. He is a member of the Institute of Management Accountants and holds a certificate in management accounting.

He has a small staff of certified public 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

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

## Broadening Your PERSPECTIVE

### Management Decision-Making

*Each chapter contains an exercise based on **Current Designs**, the company that was featured at the beginning of this chapter. We are excited to present managerial accounting situations that are based on the operations of a real company. However, to protect the proprietary nature of this information, the amounts in these exercises are realistic but not necessarily the actual data that would be found in Current Designs' accounting records. We sincerely appreciate the cooperation of the people at Current Designs, particularly Mike Cichanowski, Jim Brown, Diane Buswell, and Jake Greseth, who made these exercises possible.*

#### Decision-Making at Current Designs

**BYP1-1** 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. (See [www.cd kayak.com/craftsmanship/index.php](http://www.cd kayak.com/craftsmanship/index.php) for the details of each method.) 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

### Instructions

- What are the primary information needs of each manager?
- 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.
- When Diane Buswell, controller for Current Designs, reviewed the accounting records for a recent period, she noted the following items. Classify each item as a product cost or a period cost. If an item is a product cost, note if it is a direct materials, direct labor, or manufacturing overhead item.

Payee	Purpose	Product Costs			Period Costs
		Direct Materials	Direct Labor	Manufacturing Overhead	
Winona Agency	Property insurance for the manufacturing plant				
Bill Johnson (sales manager)	Payroll check—payment to sales manager				
Xcel Energy	Electricity for manufacturing plant				
Winona Printing	Price lists for salespeople				
Jim Kaiser (sales representative)	Sales commissions				
Dave Thill (plant manager)	Payroll check—payment to plant manager				
Dana Schultz (kayak assembler)	Payroll check—payment to kayak assembler				
Composite One	Bagging film used when kayaks are assembled; it is discarded after use				
Fastenal	Shop supplies—brooms, paper towels, etc.				
Ravago	Polyethylene powder which is the main ingredient for the rotational molded kayaks				
Winona County	Property taxes on manufacturing plant				
North American Composites	Kevlar® fabric for composite kayaks				
Waste Management	Trash disposal for the company office building				
None	Journal entry to record depreciation of manufacturing equipment				



## Decision-Making Across the Organization

**BYP1-2** Wendall Company specializes in producing fashion outfits. On July 31, 2014, 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 must determine the amount of its inventories as of July 31, 2014, 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

**BYP1-3** 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

- What are the primary information needs of each manager?
- Which, if any, financial accounting report(s) is each likely to use?
- 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

**BYP1-4** **Anchor Glass Container Corporation**, the third largest manufacturer of glass containers in the United States, supplies beverage and food producers and consumer products manufacturers nationwide. Parent company **Consumers Packaging Inc.** (*Toronto Stock Exchange: CGC*) is a leading international designer and manufacturer of glass containers.

The management discussion on page 46 appeared in a recent annual report of Anchor Glass.

### Anchor Glass Container Corporation Management Discussion

**Cost of Products Sold** Cost of products sold as a percentage of net sales was 89.3% in the current year compared to 87.6% in the prior year. The increase in cost of products sold as a percentage of net sales principally reflected the impact of operational problems during the second quarter of the current year at a major furnace at one of the Company's plants, higher downtime, and costs and expenses associated with an increased number of scheduled capital improvement projects, increases in labor, and certain other manufacturing costs (with no corresponding selling price increases in the current year). Reduced fixed costs from the closing of the Streator, Illinois, plant in June of the current year and productivity and efficiency gains partially offset these cost increases.

#### *Instructions*

What factors affect the costs of products sold at Anchor Glass Container Corporation?

**BYP1-5** The Institute of Management Accountants (IMA) is an organization dedicated to excellence in the practice of management accounting and financial management.

**Address:** [www.imanet.org](http://www.imanet.org), or go to [www.wiley.com/college/weygandt](http://www.wiley.com/college/weygandt)

#### *Instructions*

At the IMA's home page, locate the answers to the following questions.

- How many members does the IMA have, and what are their job titles?
- What are some of the benefits of joining the IMA as a student?
- Use the chapter locator function to locate the IMA chapter nearest you, and find the name of the chapter president.

## Critical Thinking

### Communication Activity

**BYP1-6** Refer to P1-5A 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.

- 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.
- Executives are very busy. Your letter should tell the president your main results first (for example, the amount of net income).
- You should include brief explanations so that the president can understand the changes you made in the calculations.

### Ethics Case



**BYP1-7** 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**

**BYP1-8** 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 (page 207).
- (b) Budget (page 384).
- (c) Balanced scorecard (page 513).
- (d) Capital budgeting (page 547).

**Considering Your Costs and Benefits**

**BYP1-9** 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.

**Answers to Chapter Questions****Answers to Insight and Accounting Across the Organization Questions**


**p. 6 Even the Best Have to Get Better Q:** What are some of the steps that this company has taken in order to ensure that production meets demand? **A:** The company has organized flexible teams, with jobs arranged by the amount of time a task takes. Employees now are multiskilled, so they can switch between tasks and products. Also, the stores now provide sales data more quickly to the manufacturing facility, so that production levels can be changed more quickly in response to demand.

**p. 11 Why Manufacturing Matters for U.S. Workers Q:** In what ways does the shift to automated factories change the amount and composition of product costs? **A:** As factories become more automated, they become more efficient, increasing output and decreasing cost per unit. The composition of those costs also switches: Factory labor costs decline, and factory overhead costs (e.g., depreciation and maintenance on equipment) increase.

**p. 19 Low Fares but Decent Profits Q:** What are some of the line items that would appear in the cost of services provided schedule of an airline? **A:** Some of the line items that would appear in the cost of services provided schedule of an airline would be fuel, flight crew salaries, maintenance wages, depreciation on equipment, airport gate fees, and food-service costs.

**Answers to Self-Test Questions**

1. b 2. b 3. b 4. b 5. d 6. a 7. c 8. c 9. c ( $\$200,000 + \$600,000 - \$250,000$ ) 10. c  
11. a 12. d 13. d 14. d 15. d

 Remember to go back to The Navigator box on the chapter opening page and check off your completed work.