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Managerial Accounting

Eighteenth Edition

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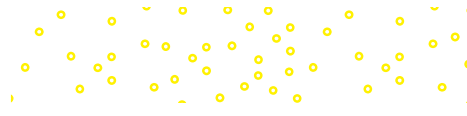
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With Contributions By

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MANAGERIAL ACCOUNTING

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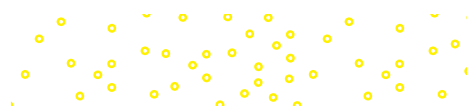
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About the

Authors



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Ray H. Garrison is emeritus professor of accounting at Brigham Young University, Provo, Utah. He received his BS and MS degrees from Brigham Young University and his DBA degree from Indiana University.

As a certified public accountant, Professor Garrison has been involved in management consulting work with both national and regional accounting firms. He has published articles in *The Accounting Review*, *Management Accounting*, and other professional journals. Innovation in the classroom has earned Professor Garrison the Karl G. Maeser Distinguished Teaching Award from Brigham Young University.



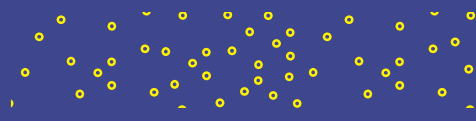
Eric W. Noreen

Eric W. Noreen has taught at INSEAD in France and the Hong Kong Institute of Science and Technology and is emeritus professor of accounting at the University of Washington. Currently, he is the Accounting Circle Professor of Accounting, Fox School of Business, Temple University.

He received his BA degree from the University of Washington and MBA and PhD degrees from Stanford University. A Certified Management Accountant, he was awarded a Certificate of Distinguished Performance by the Institute of Certified Management Accountants.

Professor Noreen has served as associate editor of *The Accounting Review* and the *Journal of Accounting and Economics*. He has numerous articles in academic journals including the *Journal of Accounting Research*; *The Accounting Review*; the *Journal of Accounting and Economics*; *Accounting Horizons*; *Accounting, Organizations and Society*; *Contemporary Accounting Research*; the *Journal of Management Accounting Research*; and the *Review of Accounting Studies*.

Professor Noreen has won a number of awards from students for his teaching.



Louise St. Romain—Fast Cat Studios

Peter C. Brewer teaches in the Department of Accountancy at Wake Forest University. Prior to joining the faculty at Wake Forest, he was an accounting professor at Miami University for 19 years. He holds a BS degree in accounting from Penn State University, an MS degree in accounting from the University of Virginia, and a PhD from the University of Tennessee. He has published more than 40 articles in a variety of journals including *Management Accounting Research*; the *Journal of Information Systems*; *Cost Management*; *Strategic Finance*; the *Journal of Accountancy*; *Issues in Accounting Education*; and the *Journal of Business Logistics*.

Professor Brewer has served on the editorial boards of the *Journal of Accounting Education* and *Issues in Accounting Education*. His article “Putting Strategy into the Balanced Scorecard” won the 2003 International Federation of Accountants’ Articles of Merit competition, and his articles “Using Six Sigma to Improve the Finance Function” and “Lean Accounting: What’s It All About?” were awarded the Institute of Management Accountants’ Lybrand Gold and Silver Medals in 2005 and 2006. He has received Miami University’s Richard T. Farmer School of Business Teaching Excellence Award.

Professor Brewer and his wife own a Howdy Homemade Ice Cream shop in Asheville, North Carolina (www.howdyavl.com). Howdy Homemade’s highest priority is recruiting, training, retaining, and promoting its employees—the majority of whom have intellectual and developmental disabilities. The company’s employees “pay it forward” by serving all members of their community and *inspiring all of us to realize the potential in each of us*.

Dedication

To our families and to our many colleagues who use this book.



Let **Garrison** be Your Guide

For centuries, the lighthouse has provided guidance and safe passage for sailors. Similarly, Garrison/Noreen/Brewer has successfully guided millions of students through managerial accounting, lighting the way and helping them sail smoothly through the course.

Decades ago, lighthouses were still being operated manually. In these days of digital transformation, lighthouses are run using automatic lamp changers and other modern devices. In much the same way, Garrison/Noreen/Brewer has evolved over the years. Today, this edition of the Garrison book affirms its tradition of guiding students—accounting majors and other business majors alike—safely through the course while also embracing innovation through the incorporation of **Data Analytics Exercises**. These exercises teach students how to use the power of Excel to derive managerial insights and then communicate those findings in visually compelling ways. They also provide students with the opportunity to interpret and create data visualizations within Tableau and Power BI two of the most popular data visualization software packages used in business today. These innovative features build on a tradition of inventive, powerful tools created to augment student learning and increase student motivation.

Connect

The eighteenth edition of Garrison's learning system in Connect features the following: **SmartBook 2.0's** adaptive learning and reading experience, **Concept Overview Videos**, **Guided Examples**, **Audio Hints**, **Data Analytics Content**, **Integrated Excel**, **Applying Excel**, and more. Quality assessment continues to be a focus of Connect, with over 9,300 questions available for assignment, including more than 1,600 new test bank questions.

I have used the Garrison textbook for many years and can say that the textbook is by far one of my favorite textbooks in terms of content, exercises and problems, and online resources. As instructors we are being asked more and more to provide students with critical thinking exercises. Some of the Garrison problems are quite comprehensive and require great problem solving skills. . .

Stacy Kline, Drexel University

It is one of the best texts for Managerial Accounting available. It covers desired materials and allows choices about how to cover the data. I really like this text.

Pamela Baker, Texas Women's University

This is a total learning system that provides the student with a vast variety of ways to learn the material and concepts. It's almost entertaining.

Rhonda K Thomas, Butler Community College

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The text makes the subject matter practical and interesting. It also does not get bogged down in complicated explanations, but rather provides simple and easy to follow explanations. The supporting textbook problems are also well-written and work well for assigning homework.

Kari Olsen, Utah State University

I feel this is the strongest textbook on the market for managerial accounting. It provides the needed depth for accounting majors yet is accessible for the non-accounting major. The book blends theory and practice successfully in a well-integrated and useful way.

Joseph Gerard, University of Wisconsin–Whitewater

LOVE IT! best managerial book out there. I cannot imagine using anything else at this point based on my reviews.

Jerrilyn Eisenhauer, Tulsa Community College

It is very difficult to create a textbook that will satisfy the needs of students and faculty. This book is very well done, and each instructor can utilize the materials they deem the most important. Classroom time is limited; the more resources available to students to utilize on their own, the better the opportunity for full understanding of the materials.

Jacklyn Collins, University of Miami

Just as the lighthouse continues to provide reliable guidance to seafarers, the Garrison/Noreen/Brewer book continues its tradition of leading the way and helping students sail successfully through managerial accounting by always focusing on three important qualities: **relevance**, **accuracy**, and **clarity**.

RELEVANCE. Every effort is made to help students relate the concepts in this book to the decisions made by working managers. The Garrison author team also ensures that *Managerial Accounting* stays current with the latest pedagogy and digital tools. The eighteenth edition expands the incorporation of **Data Analytics Exercises** that allow students to analyze, interpret, and visualize accounting data using Excel, Tableau, and Power BI with auto-graded questions assignable within Connect. These exercises enable students to develop both analytical and communication skills within an accounting context that are highly valued in the marketplace.

ACCURACY. The Garrison book continues to set the standard for accurate and reliable material in its eighteenth edition. With each revision, the authors evaluate the book and its supplements in their entirety, working diligently to ensure that the end-of-chapter material, solutions manual, and test bank are consistent, current, and accurate.

CLARITY. Generations of students have praised Garrison for the friendliness and readability of its writing, but that's just the beginning. In the eighteenth edition, the authors have rewritten various chapters with input and guidance from instructors around the country to ensure that teaching and learning from Garrison remains as easy as it can be.

The authors' steady focus on these three core elements has led to tremendous results. *Managerial Accounting* has consistently led the market, being used by over two million students and earning a reputation for reliability that other texts aspire to match.

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Garrison's Powerful Pedagogy

Managerial Accounting includes pedagogical elements that engage and instruct students without cluttering the pages or interrupting student learning. Garrison's key pedagogical tools enhance and support students' understanding of the concepts rather than compete with the narrative for their attention.

This text allows the text to be utilized as an introductory course with availability to expand the course with a higher level pedagogy.

David Laurel, South Texas College

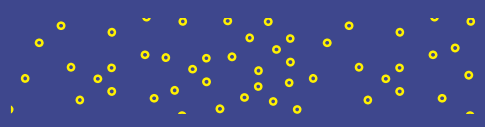
New* Continuing Case: Howdy Homemade Ice Cream

The eighteenth edition includes a new Continuing Case in Connect that follows managerial accounting decisions at a real company. Howdy Homemade Ice Cream is a real company, and the Asheville, NC franchise that forms the foundation for this case study is owned and operated by author Pete Brewer. The serial case study that spans most of the textbook's chapters enables students to see that managerial accounting provides an **integrated** set of tools that support organizational planning, control, and decision making.

The business serves a product line that is familiar to all students—ice cream! This familiar context is more engaging for students than a generic manufacturing setting. The company's primary mission is to employ adults with intellectual and developmental disabilities, thereby exposing students to the important topic of environmental, social, & governance (ESG) responsibilities.



Courtesy of Howdy Catering LLC/Howdy Homemade Ice Cream



Chapter Opener Features

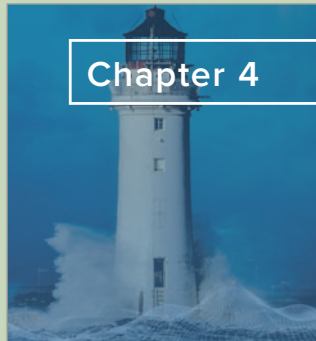
Each chapter opens with an **Entrepreneur Spotlight** that serves four purposes. First, it acknowledges small business entrepreneurs as the life-blood of our economy. Second, it features an inclusive group of entrepreneurs to ensure all of our students can see themselves within these vignettes. Third, it connects each entrepreneur’s company to the subject matter covered within the corresponding chapter. Fourth, it describes how each entrepreneur’s company fulfills its environmental, social, and governance (ESG) responsibilities. **Learning Objectives** alert students to what they should expect as they progress through the chapter.

The vignettes do a good job of highlighting to students the practical application of concepts. In other words, it helps them see why the concepts matter.

Andrew Felo, Nova Southeastern University

I believe the real-world examples at the start of the chapter get the students to see the real-world application and “buy-in” to the learning process because it makes the information more “real” and relevant.

Elizabeth Cannata, Johnson and Wales University



Chapter 4

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LEARNING OBJECTIVES

After studying Chapter 4, you should be able to:

- LO4–1 Record the flow of materials, labor, and overhead through a process costing system.
- LO4–2 Compute the equivalent units of production using the weighted-average method.
- LO4–3 Compute the cost per equivalent unit using the weighted-average method.
- LO4–4 Assign costs to units using the weighted-average method.
- LO4–5 Prepare a cost reconciliation report using the weighted-average method.
- LO4–6 (Appendix 4A) Compute the equivalent units of production using the FIFO method.
- LO4–7 (Appendix 4A) Compute the cost per equivalent unit using the FIFO method.
- LO4–8 (Appendix 4A) Assign costs to units using the FIFO method.
- LO4–9 (Appendix 4A) Prepare a cost reconciliation report using the FIFO method.
- LO4–10 (Appendix 4B) Allocate service department costs to operating departments using the direct method.
- LO4–11 (Appendix 4B) Allocate service department costs to operating departments using the step-down method.



Data Analytics Exercise available in Connect to complement this chapter

Process Costing



Rob Kim/Getty Images for NYCWFF

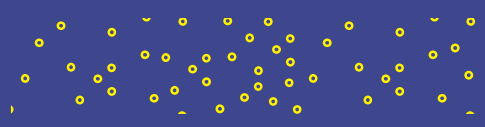
ENTREPRENEUR SPOTLIGHT

Formed by sisters Robin McBride and Andrea McBride-John, the **McBride Sisters Collection** is the largest Black- and women-owned vineyard to produce and distribute its own wines in the United States. The sisters, who share a father, grew up worlds apart—Robin in Monterey, CA, and Andrea in Marlborough, New Zealand. Being unaware of each other’s existence until they reached adulthood, the two women quickly bonded around a shared passion for wine. Today, their most sought-after wines, which combine “old world elegance with new world finesse,” can be found in **Target**, **Kroger**, and **Total Wines** stores nationwide.

Applying Managerial Accounting

The McBride sisters could use process costing to calculate unit product costs. For example, the company might define its departments as Harvesting, Crushing and Pressing, Fermenting, Clarifying, and finally Aging and Bottling. In the Fermenting Department, the company could calculate the equivalent units of production and the cost per equivalent unit. This cost information could then be used to calculate the cost of ending work in process inventory within the Fermenting Department and the cost of the units completed and transferred to the Clarifying Department.





IN BUSINESS

ZARA MAKES POST-PANDEMIC SHIFT TO ONLINE SALES

Inditex SA announced that its post-pandemic future includes closing 1,200 of its more than 7,400 retail store locations worldwide. The closures will “affect as many as 100 of Inditex’s Zara, Massimo Dutti, Pull & Bear and other stores in the Americas . . . [that] currently account for between 5 percent and 6 percent in sales.” Inditex plans to spend \$1.13 billion on digital investments with the goal of boosting online sales from 14 percent to 25 percent of total sales. The company’s accelerated shift from brick-and-mortar store locations to online sales punctuates “a yearslong reckoning brought about by a boom in online shopping.”

Source: Saabira Chaudhuri, “Zara Owner to Shut 1,200 Stores in Online Push,” *The Wall Street Journal*, June 11, 2020, p. B3.



M4OS Photos/Alamy Stock Photo

In Business Boxes

These helpful boxed features offer a glimpse into how real companies use the managerial accounting concepts discussed within the chapter. Each chapter contains multiple current examples.

“Managerial Accounting in Action” and “In Business” boxes are also really nice additional features in the text. These insights into how the concepts in the chapter relate to real business help the information come alive to students.

Amy Bentley, Tallahassee Community College

MANAGERIAL ACCOUNTING IN ACTION THE ISSUE



Prem started Acoustic Concepts, Inc., to market a new speaker he designed for automobile sound systems. The speaker, called the Sonic Blaster, uses an advanced microprocessor and proprietary software to boost amplification to awesome levels. Prem contracted with a Taiwanese electronics manufacturer to produce the speaker. With seed money provided by his family, Prem placed an order with the manufacturer and ran advertisements in auto magazines.

The Sonic Blaster’s immediate success enabled Prem to move the company’s headquarters out of his apartment and into a nearby industrial park. He also hired a receptionist, an accountant, a sales manager, and a small sales staff to sell the speakers to retail stores. The accountant, Bob Luchinni, had worked for several small companies where he acted as a business advisor and bookkeeper. The following discussion occurred soon after Bob was hired:

Prem: Bob, I have a lot of questions about the company’s finances that I hope you can answer.

Bob: We’re in great shape. The loan from your family will be paid off within a few months.

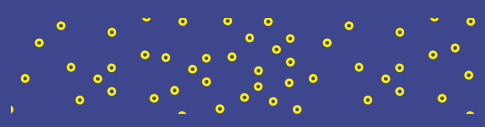
¹ One additional assumption often used in manufacturing companies is that inventories do not change. The number of units produced equals the number of units sold.

Managerial Accounting in Action Vignettes

These vignettes depict cross-functional teams working together in real-life settings, working with the products and services that students recognize from their own lives. Students are shown step by step how accounting concepts are implemented in organizations and how these concepts are applied to solve everyday business problems. First, “The Issue” is introduced through a dialogue; the student then walks through the implementation process; finally, “The Wrap-up” summarizes the big picture.

I think the “In Business” boxes are very helpful—they are short, concise, and on point. I think it is helpful they appear throughout the chapter.

Elizabeth Cannata, Johnson and Wales University



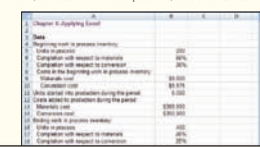
End-of-Chapter Material

Managerial Accounting has earned a reputation for the best end-of-chapter practice material of any text on the market. Our problem and case material continues to conform to AACSB recommendations and makes a great starting point for class discussions and group projects. When Ray Garrison first wrote *Managerial Accounting*, he started with the end-of-chapter material, then wrote the narrative in support of it. This unique approach to textbook authoring not only ensured consistency between the end-of-chapter material and text content but also underscored Garrison's fundamental belief in the importance of applying theory through practice. It is not enough for students to read; they must also understand. To this day, the guiding principle of that first edition remains, and Garrison's superior end-of-chapter material continues to provide accurate, current, and relevant practice for students.

connect Applying Excel

This exercise relates to the Double Diamond Ski's Shaping and Milling Department that was discussed earlier in the chapter. The Excel worksheet shown below consolidates data from Exhibits 4-5 and 4-8. The workbook, and instructions on how to complete the file, can be found in Connect.

LO4-2, LO4-3, LO4-4, LO4-5



connect Exercises

EXERCISE 4-1 Process Costing Journal Entries LO4-1
Quality Brick Company produces bricks in two processing departments—Molding and Firing. Information relating to the company's operations in March follows:

- Raw materials used in production: Molding Department, \$23,000; and Firing Department, \$8,000.
- Direct labor costs: Molding Department, \$12,000; and Firing Department, \$7,000.
- Manufacturing overhead was applied: Molding Department, \$25,000; and Firing Department, \$7,000.
- Unfired, molded bricks were transferred from the Molding Department to the Firing Department. The cost of the unfired, molded bricks was \$57,000.
- Finished bricks were transferred from the Firing Department to the finished goods warehouse. The cost of the finished bricks was \$103,000.
- Finished bricks were sold to customers. The cost of the finished bricks sold was \$101,000.

Required:
Prepare journal entries to record items (a) through (f) above.

connect Problems

PROBLEM 4-12 Comprehensive Problem: Second Production Department—Weighted-Average Method LO4-2, LO4-3, LO4-4, LO4-5
Old Country Links, Inc., produces sausages in three production departments—Mixing, Casing and Curing, and Packaging. In the Mixing Department, meats are prepared, ground, and mixed with spices. The spiced meat mixture is transferred to the Casing and Curing Department, where the mixture is force-fed into casings and hung and cured in climate-controlled smoking chambers. In the Packaging Department, the cured sausages are sorted, packed, and labeled. The company uses the weighted-average method of process costing. Data for September for the Casing and Curing Department follow:

	Units	Percent Completed		
		Mixing	Materials	Conversion
Work in process inventory, September 1	1	100%	80%	80%
Work in process inventory, September 30	1	100%	80%	70%

connect Cases

Case 4-19 Second Department—Weighted-Average Method LO4-2, LO4-3, LO4-4
"I was goaded by hiring the new assistant controller," said Ruth Scarpino, president of Provost as "I just look at this report he prepared for last month for the Finishing Department. I can't read it."

Finishing Department costs:

100% complete; conversion 80% complete	\$ 8,208
units transferred in during the month from the preceding department, 1,900 units	17,940
materials cost added during the month	6,210
conversion costs incurred during the month	13,820
total departmental costs	46,278

Finishing Department costs assigned to:

1,800 units at \$25.71 per unit	\$46,278
100% complete; conversion 35% complete	0
total departmental costs assigned	\$46,278

Costs of cost transferred in, \$4,068; materials cost, \$1,980; and conversion cost, \$2,160.

Utilizing the Icons



This icon indicates **Data Analytic Exercises** in Connect tied to chapter learning objectives.



To reflect our service-based economy, the text is replete with examples from service-based businesses. A helpful icon distinguishes service-related examples in the text.



Ethics assignments and examples serve as a reminder that good conduct is vital in business. Icons call out content that relates to ethical behavior for students.



The writing icon denotes problems that require students to use critical thinking as well as writing skills to explain their decisions.

Author-Written Supplements

Unlike other managerial accounting texts, the book's authors write the major supplements such as the test bank and solution files, ensuring a perfect fit between text and supplements.

The Foundational 15

Each chapter contains one **Foundational 15** exercise that includes 15 “building-block” questions related to one concise set of data. These exercises can be used for in-class discussion or as homework assignments. They are found before the Exercises and are available in **Connect**.

The screenshot shows a software interface for a Foundational 15 exercise. The title is "The Foundational 15 (LO2-1, LO2-2, LO2-3, LO2-4)". The text describes the Sweeten Company's manufacturing operations in March, including two departments: Molding and Fabrication. It provides two tables of data: one for estimated manufacturing overheads and another for actual costs for Job P and Job Q. The exercise asks for the cost of goods sold for March, with a note to not round intermediate calculations. A text input field is provided for the answer.

Required information
The Foundational 15 (LO2-1, LO2-2, LO2-3, LO2-4)
[The following information applies to the questions displayed below.]

Sweeten Company had no jobs in progress at the beginning of March and no beginning inventories. The company has two manufacturing departments—Molding and Fabrication. It started, completed, and sold only two jobs during March—Job P and Job Q. The following additional information is available for the company as a whole and for Jobs P and Q (all data and questions relate to the month of March):

	Molding	Fabrication	Total
Estimated total machine-hours used	2,500	1,500	4,000
Estimated total fixed manufacturing overhead	\$12,750	\$16,650	\$29,400
Estimated variable manufacturing overhead per machine-hour	\$ 2.50	\$ 3.30	

	Job P	Job Q
Direct materials	\$24,000	\$12,500
Direct labor cost	\$29,800	\$11,900
Actual machine-hours used:		
Molding	2,800	1,900
Fabrication	1,700	2,000
Total	4,500	3,900

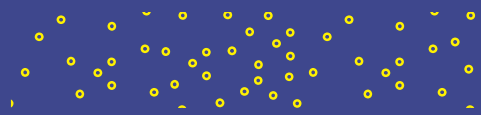
Sweeten Company had no underapplied or overapplied manufacturing overhead costs during the month.

Required:
For questions 1-8, assume that Sweeten Company uses a plantwide predetermined overhead rate with machine-hours as the allocation base. For questions 9-15, assume that the company uses departmental predetermined overhead rates with machine-hours as the allocation base in both departments.

Foundational 2-15

15. What was Sweeten Company's cost of goods sold for March? (Do not round intermediate calculations.)

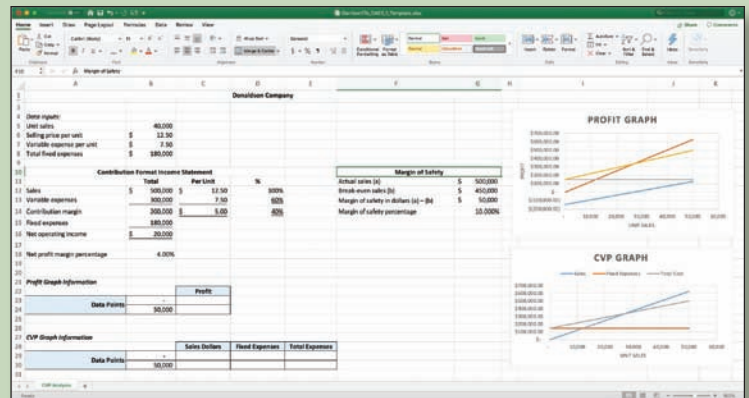
Cost of goods sold



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Data Analytics Exercises

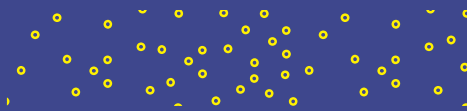
Data Analytics Exercises teach students how to use software tools to derive managerial insights and communicate them to stakeholders. These exercises, which appear in Connect, are linked to a diverse range of learning objectives that span numerous chapters. Some of these exercises require students to use various Microsoft Excel–based tools, such as Goal Seek, Pivot Tables, and Solver, to analyze data sets to derive solutions. Other exercises also teach students how to use a variety of **Data Visualization** techniques, such as charts, graphs, and maps, to communicate their findings in succinct and compelling ways. Students will also be given the opportunity to acquire the value-added skill of interpreting Tableau data visualizations and creating visualizations in both Tableau and Microsoft Power BI.



Microsoft Excel



Microsoft Excel



Integration Exercises

We have a total of 20 **Integration Exercises in the eighteenth edition**. These exercises, which are located in the back of the book, integrate learning objectives across more than one chapter. They help increase the students' level of interest in the course by forging connections across chapters. Rather than seeing each chapter as an isolated set of learning objectives, students begin to see how “it all fits together” to provide greater managerial insight and more effective planning, controlling, and decision making. The **Integration Exercises** are also tailor-made for flipping the classroom because they offer challenging questions that require students to work in teams to derive solutions that synthesize what they are learning throughout the semester.

Study Mode: Ch. 2, 6 & 7: Integration... | Saved | Help | Save & Exit | Submit

1 | Check my work

10 points

Req 1A | Req 1B | Req 2A | Req 2B | Req 2C | Req 3A | Req 3B | Req 3C | Req 4

Using your departmental overhead cost allocations, redo the controller's segmented income statement (continue selling and administrative expenses based on sales dollars). (Round your intermediate calculations to 2 decimal places.)

	Basic	Advanced
Sales		
Cost of goods sold		
Gross margin		
Selling and administrative expenses		
Net operating income		

< Req 2B | Req 3A >

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< Prev | 1 of 1 | Next >

The Integration Exercises provide a significant opportunity to keep specific concepts on the forefront of a student's comprehension. This exposure is essential for critical thinking ability.

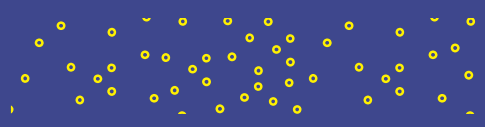
Rhonda Thomas, Butler Community College

This (Integration Exercises) is an exciting addition; it is missing from most texts and definitely not included in the one we are using now. These are the types of problems that I write for myself so that students are given the opportunity to review and continue working with concepts throughout the text.

Kim Lyons, University of Wisconsin-LaCrosse

NEW* Author-Created Learning Objective Videos

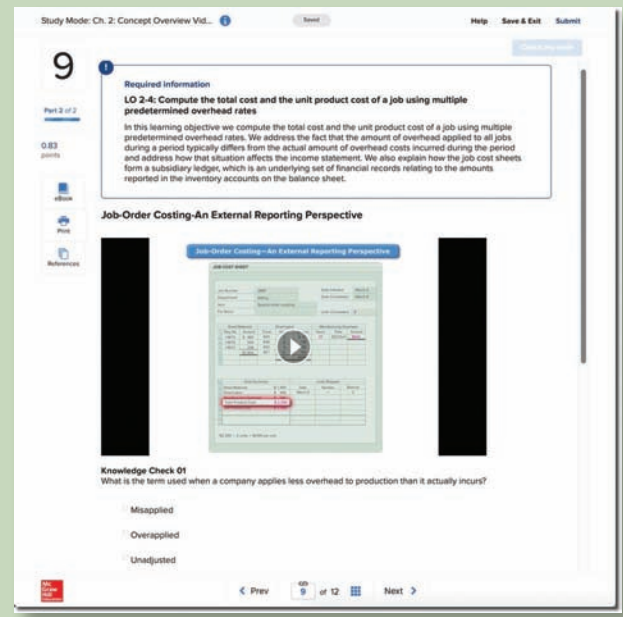
Author Pete Brewer created narrated PowerPoint videos for each chapter. There is one video for every learning objective plus chapter overview videos. Each video is three to eight minutes in duration and includes a brief explanation of the learning objective's key concepts accompanied by a numerical example.



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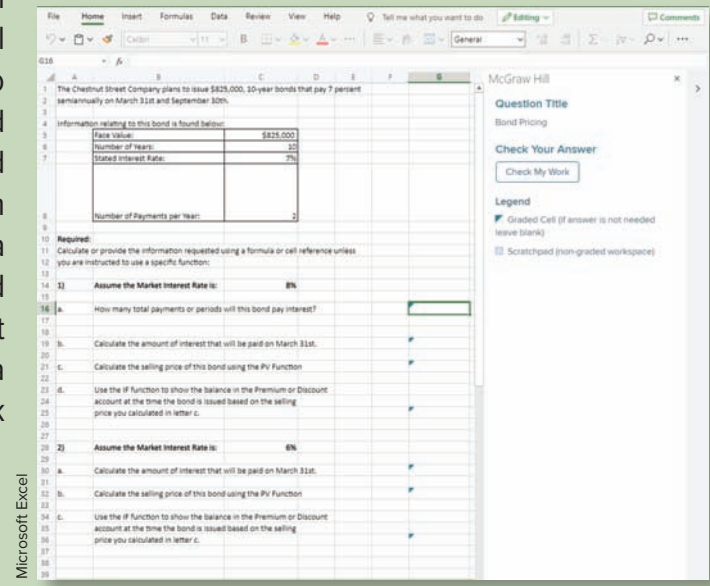
Concept Overview Videos

Concept Overview Videos, available within Connect, teach the core concepts of the content in an animated, narrated, and interactive multimedia format, bringing the key learning objectives of the course to life. Checkpoint questions allow instructors to assign points to knowledge checks and grade for accuracy, not just completion. **Concept Overview Videos** are particularly helpful for online courses and for those audio and visual learners who struggle reading the textbook page by page.



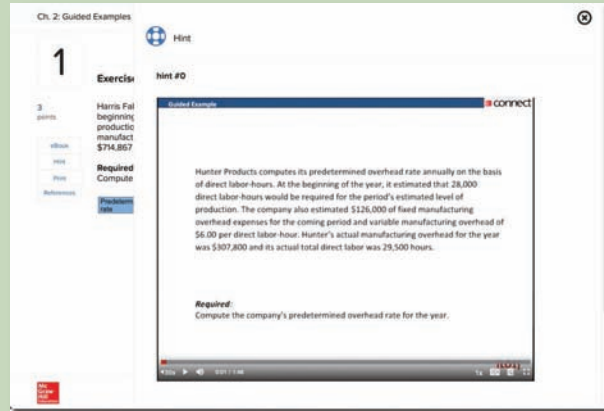
NEW* Integrated Excel Assignments

Integrated Excel assignments pair the power of Microsoft Excel with the power of Connect. A seamless integration of Excel within Connect, Integrated Excel questions allow students to work in live, auto-graded Excel spreadsheets — no additional logins, no need to upload or download files. Instructors can choose to grade by formula or solution value, and students receive instant cell-level feedback via integrated Check My Work functionality.



Guided Examples/Hint Videos

Guided Example/Hint Videos provide an animated walk-through with narration of select exercises similar to those assigned. These short presentations, which can be turned on or off by instructors, provide reinforcement when students need it most.



Connect-Only Test Bank

An online-only test bank is available in Connect, containing more than **1,600 multiple-choice** test bank questions. These new, author-created **Connect-only Test Bank** questions were written in such a way to prevent students from finding answers on external sites. The questions are presented in a combination of static and algorithmic (both quantitative and qualitative algo) modes and cover all learning objectives in all of the chapters. The questions are qualitative and quantitative in nature and span the entire “degree-of-difficulty” continuum, including easy, medium, and hard.

Test Builder in Connect

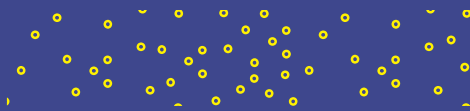
Available within Connect, Test Builder is a cloud-based tool that enables instructors to format tests that can be printed or administered within a LMS. Test Builder offers a modern, streamlined interface for easy content configuration that matches course needs, without requiring a download.

Test Builder allows you to:

- access all test bank content from a particular title.
- easily pinpoint the most relevant content through robust filtering options.
- manipulate the order of questions or scramble questions and/or answers.
- pin questions to a specific location within a test.
- determine your preferred treatment of algorithmic questions.
- choose the layout and spacing.
- add instructions and configure default settings.

Test Builder provides a secure interface for better protection of content and allows for just-in-time updates to flow directly into assessments.

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Tegrity: Lectures 24/7

Tegrity in Connect is a tool that makes class time available 24/7 by automatically capturing every lecture. With a simple one-click start-and-stop process, you capture all computer screens and corresponding audio in a format that is easy to search, frame by frame. Students can replay any part of any class with easy-to-use, browser-based viewing on a PC, Mac, iPod, or other mobile device.

Educators know that the more students can see, hear, and experience class resources, the better they learn. In fact, studies prove it. Tegrity's unique search feature helps students efficiently find what they need, when they need it, across an entire semester of class recordings. Help turn your students' study time into learning moments immediately supported by your lecture. With Tegrity, you also increase intent listening and class participation by easing students' concerns about note-taking. Using Tegrity in Connect will make it more likely you will see students' faces, not the tops of their heads.

Assurance of Learning Ready

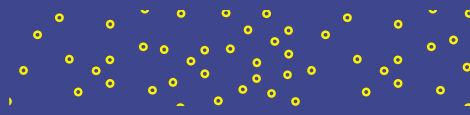
Many educational institutions today are focused on the notion of assurance of learning, an important element of some accreditation standards. *Managerial Accounting*, 18e, is designed specifically to support your assurance of learning initiatives with a simple, yet powerful, solution.

Each question for *Managerial Accounting*, 18e, maps to a specific chapter learning outcome/objective listed in the text. The reporting features of **Connect** can aggregate students to make the collection and presentation of assurance of learning data simple and easy.

AACSB Statement

McGraw Hill Education is a proud corporate member of AACSB International. Recognizing the importance and value of AACSB accreditation, we have sought to recognize the curricula guidelines detailed in AACSB standards for business accreditation by connecting selected questions in *Managerial Accounting*, 18e, to the general knowledge and skill guidelines found in the AACSB standards. The statements contained in *Managerial Accounting*, 18e, are provided only as a guide for the users of this text. The AACSB leaves content coverage and assessment clearly within the realm and control of individual schools, the mission of the school, and the faculty. The AACSB does also charge schools with the obligation of doing assessment against their own content and learning goals. While *Managerial Accounting*, 18e, and its teaching package make no claim of any specific AACSB qualification or evaluation, we have, within *Managerial Accounting*, 18e, tagged questions according to the six general knowledge and skills areas. The labels or tags within *Managerial Accounting*, 18e, are as indicated. There are, of course, many more within the test bank, the text, and the teaching package which that be used as a "standard" for your course. However, the labeled questions are suggested for your consideration.

New in the



Eighteenth Edition

Faculty feedback helps us continue to improve *Managerial Accounting*. In response to reviewer suggestions, the authors have made the following changes to the text:

- New **Entrepreneur Spotlights** have been added to the beginning of each chapter to highlight diverse businesspeople, their managerial decisions, and the ways they give back to their communities.
- New **Communicating with Data Visualizations** features in every chapter illustrate how analytics and data visualization can be used to answer managerial accounting questions.
- New **Howdy Homemade Ice Cream Continuing Case** in Connect brings managerial accounting to the real world with engaging case materials, videos, exercises, and more. The Continuing Case focuses on the start-up of a real franchise business, Howdy Homemade Ice Cream, in Asheville, NC.
- Additional *Data Analytics Exercises* and auto-graded **Tableau Dashboard Activities** have been added for each chapter in Connect for this edition.
- New **author-created videos** cover each learning objective in the chapter along with overview videos for each chapter.
- **In-Business boxes** are updated throughout to provide relevant and current real-world examples for use in classroom discussion and to support student understanding of key concepts as they read through a chapter.

Chapter-Specific Changes

Prologue

Revised Exhibit P–1 and its corresponding text to better describe the differences between financial accounting and managerial accounting. Revised the definition of strategy to better reflect its true meaning. Added coverage of organizational environmental, social, and governance (ESG) responsibilities as well as three new In Business boxes.

Chapter 1

Added four new In Business boxes.

Chapter 2

Added a new learning objective related to calculating ending inventories for the balance sheet and cost of goods sold for the income statement. Also, revised the Foundational 15, Exercise 2–17, and Problem 2–22. Added two new In Business boxes.

Chapter 3

Added three new In Business boxes.

Chapter 4

Added three new In Business boxes.

Chapter 5

Reorganized the sequence of learning objectives to improve the students' ability to understand the material. Introduced Microsoft Excel as a tool for creating CVP and profit graphs. Added four new In Business boxes.

Chapter 6

Heavily edited the chapter to cover the same learning objectives in fewer pages. Added three new In Business boxes.

Chapter 7

Heavily edited the chapter to cover the same learning objectives in fewer pages. Added three new In Business boxes.

Chapter 8

Heavily edited the chapter to cover the same learning objectives in fewer pages. Added two new In Business boxes.

Chapter 9

Added three new In Business boxes.

Chapter 10

Added two new In Business boxes.

Chapter 11

Added two new In Business boxes.

Chapter 12

Added coverage of organizational environmental, social, and governance (ESG) reporting as well as four new In Business boxes.

Chapter 13

Changed the language accompanying learning objective 6–3 from the manufacturing-centric “make or buy decisions” to the broader business language of “sourcing decisions.” Created three new end-of-chapter exercises (6–11, 6–18, and 6–20) to illustrate (1) the decision to add a product line, (2) sourcing decisions in a nonmanufacturing context, and (3) the relevance of replacement costs in decision making. Also, added three new In Business boxes.

Chapter 14

Added four new In Business boxes.

Chapter 15

Added three new learning objectives corresponding to the three sections of the statement of cash flows. Also, added seven new end-of-chapter exercises.

Chapter 16

Added two new In Business boxes.

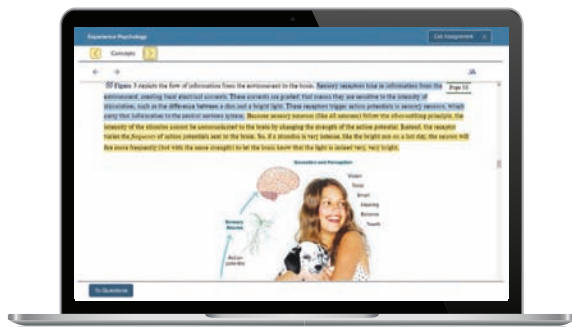
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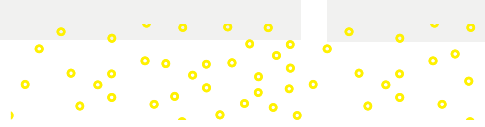
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"I really liked this app—it made it easy to study when you don't have your text-book in front of you."

- Jordan Cunningham,
Eastern Washington University

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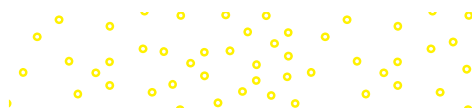
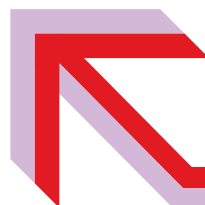


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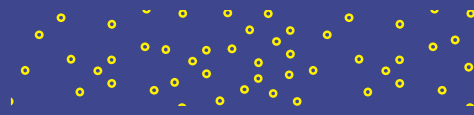


Acknowledgments

Suggestions from professors, students, and the professional accounting community continue to drive the excellence and refinement of each edition of this book. Each of those who have offered comments and suggestions has our immense gratitude and thanks.

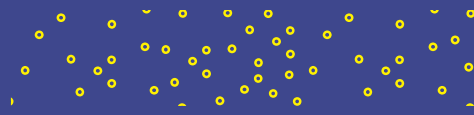
The efforts of many people are needed to continually refine a text and maintain its excellence. Among these people are the reviewers and consultants who point out areas of concern, cite areas of strength, and make recommendations for change. In this regard, the following academics have provided feedback that was enormously helpful in preparing the eighteenth edition of *Managerial Accounting*:

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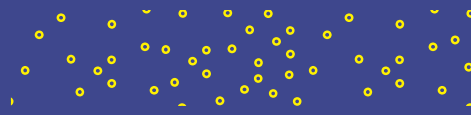


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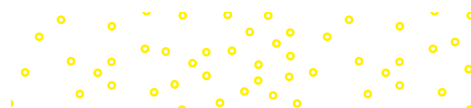
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Ray Garrison • Eric Noreen • Peter Brewer

Brief Contents

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Credits for Chapter Openers

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Managerial Accounting: An Overview



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ENTREPRENEUR SPOTLIGHT

María Contreras-Sweet “sees entrepreneurship as a force that can change lives and lift whole communities around the world.” In 2006, she started **ProAmérica Bank**—the first commercial bank started in California by a person of Latino origin in more than 35 years. The bank focuses on serving small and medium-sized businesses in Latino neighborhoods, based on her belief “that the lack of access to capital means a lack of opportunity.”

Applying Managerial Accounting

ProAmérica Bank maintains internal controls (as summarized in Exhibit P–8) to minimize various risks, such as incurring financial reporting errors. For example, the bank uses physical safeguards to limit access to its cash and other tangible assets. It also requires proper authorizations for transactions over pre-established dollar amounts. In addition, the bank prepares periodic reconciliations that compare its cash on hand with its underlying accounting records to identify and resolve any discrepancies.

Serving all Stakeholders

In addition to her entrepreneurial ventures, Contreras-Sweet has also served her community in various other capacities. For example, she served in President Barack Obama’s cabinet as the 24th Administrator of the **United States Small Business Administration**. She also was a founding member of a nonprofit organization called **Hispanas Organized for Political Equality** (HOPE). The organization seeks to empower its communities “through advocacy, Latina leadership training, and increasing knowledge on the contributions Latinas have made to advance the status of women.” ■

Sources: www.contrerasweet.com, <https://smallbiztrends.com/2019/10/successful-hispanic-entrepreneurs.html>, <http://www.hispaniclifestyle.com/articles/latina-of-influence-maria-contreras-sweet/>, <https://www.latinas.org/hope-leadership>.



Data Analytics Exercise available in Connect to complement this chapter

PROLOGUE

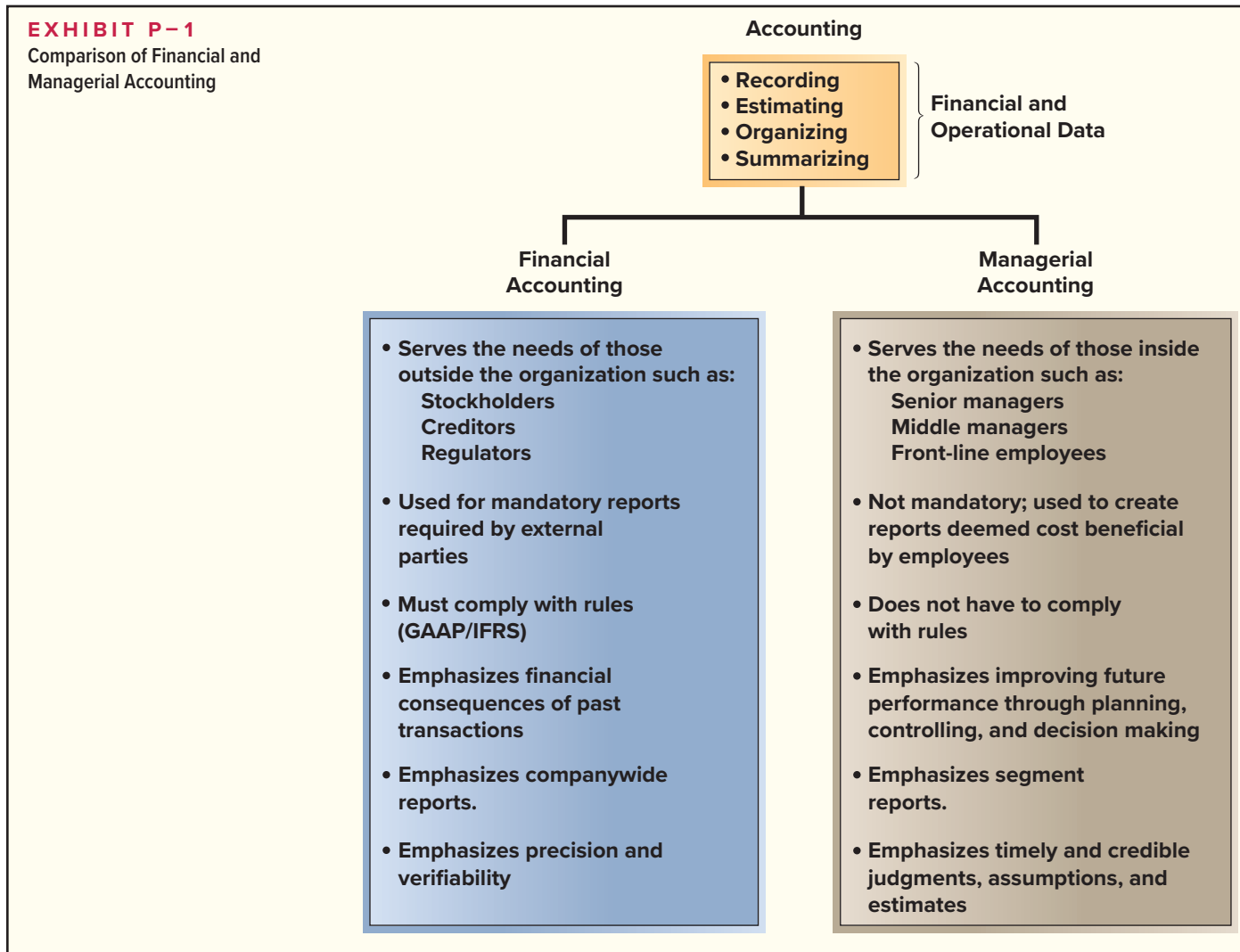


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What Is Managerial Accounting?

The prologue explains why managerial accounting is important to the future careers of all business students. It begins by answering two questions: (1) What is managerial accounting? and (2) Why does managerial accounting matter to your career? It concludes by discussing seven topics—Big Data; ethics; strategy; enterprise risk management; environmental, social, and governance (ESG) responsibilities; process management; and leadership—that define the business context within which managerial accounting operates.

Many students enrolled in this course will have recently completed an introductory *financial accounting* course. **Financial accounting** is concerned with reporting financial information to external parties, such as stockholders, creditors, and regulators. **Managerial accounting** is concerned with providing information to people within an organization, such as senior managers, middle managers, and front-line employees. Exhibit P-1 summarizes six key differences between financial and managerial accounting. It recognizes the fundamental difference between financial and managerial accounting is that financial accounting serves the needs of those *outside* the organization, whereas managerial accounting serves the needs of people employed *inside* the organization. Because of this fundamental difference in users, financial accounting emphasizes mandatory reporting in compliance with rules, such as generally accepted



accounting principles (GAAP) and international financial reporting standards (IFRS), whereas managerial accounting is not mandatory or bound by rules. Financial accounting focuses on reporting companywide historical performance, whereas managerial accounting focuses on managing business *segments* to improve future performance. A **segment** is a part or activity of an organization about which managers would like cost, revenue, or profit data. Examples of business segments include product lines, customer groups (segmented by age, ethnicity, gender, volume of purchases, etc.), geographic territories, divisions, plants, and departments. Finally, financial accounting stresses precision and verifiability, while managerial accounting relies on timely and credible judgments, assumptions, and estimates.

As mentioned in Exhibit P-1, managerial accounting focuses on improving future performance through three vital activities—*planning*, *controlling*, and *decision making*. **Planning** involves establishing goals and specifying how to achieve them. **Controlling** involves gathering feedback to ensure the plan is being properly executed or modified as circumstances change. **Decision making** involves selecting a course of action from competing alternatives. Now let's take a closer look at these three pillars of managerial accounting.

Planning

Assume you work for **Procter & Gamble (P&G)** and are in charge of the company's campus recruiting for all undergraduate business majors. In this example, your planning process would begin by establishing a goal such as: our goal is to recruit the "best and brightest" college graduates. The next stage of the planning process would require specifying how to achieve this goal by answering numerous questions such as:

- How many students do we need to hire in total and from each major?
- What schools do we plan to include in our recruiting efforts?
- Which of our employees will be involved in each school's recruiting activities?
- When will we conduct our interviews?
- How will we compare students to one another to decide who will be extended job offers?
- What salary will we offer our new hires? Will the salaries differ by major?
- How much money can we spend on our recruiting efforts?

As you can see, there are many questions that need to be answered as part of the planning process. Plans are often accompanied by a *budget*. A **budget** is a plan for the future expressed in formal quantitative terms. As the head of recruiting at P&G, your budget would include two key components. First, you would have to work with other senior managers inside the company to establish a budgeted amount of total salaries that can be offered to all new hires. Second, you would have to create a budget that quantifies how much you intend to spend on your campus recruiting activities.

IN BUSINESS

LABOR VS. EQUIPMENT: AN IMPORTANT PLANNING DECISION

As e-commerce companies such as **Amazon.com** continue to thrive, brick-and-mortar retailers are looking for ways to improve customer satisfaction by eliminating the hassle of long checkout lines. For example, **Tesco PLC**, one of the world's largest supermarket operators, is experimenting with cashierless stores. Its automated process relies on 150 ceiling-mounted cameras to detect what customers buy and then automatically charges them for their groceries as they exit the store. Numerous other companies, such as **Carrefour SA**, **Walmart**, and **Kroger**, are also exploring ways to deliver what Tesco describes as "frictionless shopping" for their customers. While each company's approach to streamlining the shopping process may be unique, they all have important planning and budgeting implications with respect to investing in labor versus equipment.

Source: Parmy Olson, "Grocers Swap Cashiers for Cameras," *The Wall Street Journal*, July 8, 2019, pp. B1–B2.

Controlling

Once you established P&G's recruiting plan, you would transition to the control process. This process involves gathering, evaluating, and responding to feedback to ensure this year's recruiting process meets expectations and next year's recruiting campaign goes even more smoothly. The control process would involve answering questions such as:

- Did we succeed in hiring the planned number of students within each major and at each school?
- Did we lose too many exceptional candidates to competitors?
- Did each of our employees involved in the recruiting process perform satisfactorily?
- Is our method of comparing students to one another working?
- Did the on-campus and office interviews run smoothly?
- Did we stay within our budget in terms of total salary commitments to new hires?
- Did we stay within our budget regarding spending on recruiting activities?

As you can see, there are many questions that arised as part of the control process. When answering these questions, you would go beyond simple yes or no answers to find the underlying reasons why performance exceeded or failed to meet expectations. Part of the control process includes preparing *performance reports*. A **performance report** compares budgeted data to actual data to identify and learn from excellent performance and identify and eliminate sources of unsatisfactory performance. Performance reports can also be used as one of many inputs to help evaluate and reward employees.

Although this example focused on P&G's campus recruiting efforts, we could have described how planning enables **FedEx** to deliver packages across the globe overnight or how it helps **Apple** develop and market successive generations of the iPhone. We could have discussed how the control process helps **Pfizer**, **Eli Lilly**, and **Abbott Laboratories** ensure that their pharmaceutical drugs are produced in conformance with rigorous quality standards, or how **Publix** relies on the control process to keep its grocery shelves stocked. We also could have looked at planning and control failures such as **Takata**'s recall of more than 30 million defective driver-side air bags installed by a variety of automakers such as **Honda**, **Ford**, **Toyota**, and **Subaru**. In short, all managers (and that probably includes you someday) perform planning and controlling activities.

Decision Making

Perhaps the most basic managerial skill is the ability to make intelligent, data-driven decisions. Broadly speaking, many of those decisions revolve around the following three questions: *What* should we be selling? *Who* should we be serving? *How* should we execute? Exhibit P-2 provides examples of decisions pertaining to each of these three categories.

EXHIBIT P-2 Examples of Decisions

What should we be selling?	Who should we be serving?	How should we execute?
What products and services should be the focus of our marketing efforts?	Who should be the focus of our marketing efforts?	How should we supply our parts and services?
What new products and services should we offer?	Who should we start serving?	How should we expand our capacity?
What prices should we charge for our products and services?	Who should pay price premiums or receive price discounts?	How should we reduce our capacity?
What products and services should we discontinue?	Who should we stop serving?	How should we improve our efficiency and effectiveness?

The left-hand column of Exhibit P-2 suggests all companies make decisions related to the products and services they sell. For example, each year **Procter & Gamble** decides how to allocate its marketing budget across numerous brands that each generates over \$1 billion in sales as well as other brands that have promising growth potential. **Mattel** decides what new toys to introduce to the market. **Southwest Airlines** decides what ticket prices to establish for each of its thousands of flights per day. **Hyundai** decides whether to discontinue certain models of automobiles.

The middle column of Exhibit P-2 indicates that all companies make decisions related to the customers they serve. For example, **Duluth Trading Company** decides how to allocate its marketing budget between products that tend to appeal to male versus female customers. **FedEx** decides whether to expand its services into new markets across the globe. **HP** decides what price discounts to offer corporate clients who purchase large volumes of its products. A bank decides whether to discontinue customers who may be unprofitable.

The right-hand column of Exhibit P-2 says companies also make decisions related to how they execute. For example, **Boeing** decides whether to rely on outside vendors such as **Goodrich**, **Saab**, and **Rolls-Royce** to manufacture many of the parts used to make its airplanes. **Cintas** decides whether to expand its laundering and cleaning capacity in a given geographic region by adding square footage to an existing facility or constructing an entirely new facility. In an economic downturn, a manufacturer might have to decide whether to eliminate one 8-hour shift at three plants or to close one plant. Finally, all companies have to decide among competing improvement opportunities. For example, a company may have to decide whether to implement a new software system, to upgrade a piece of equipment, or to provide extra training to its employees.

This portion of the prologue explained the three pillars of managerial accounting—planning, controlling, and decision making. This book prepares you to become an effective manager by explaining how to make intelligent data-driven decisions, how to create financial plans for the future, and how to continually make progress toward achieving goals by obtaining, evaluating, and responding to feedback.

Why Does Managerial Accounting Matter to Your Career?

Many students feel anxious about choosing a major because they are unsure if it will provide a fulfilling career. To reduce these anxieties, we recommend deemphasizing what you cannot control about the future; instead, focus on what you can control right now. More specifically, concentrate on answering the following question: What can you do now to prepare for success in an unknown future career? The best answer is to learn skills that make it easier for you to adapt to an uncertain future. You need to become adaptable!

Whether you end up working in the United States or abroad, for a large corporation, a small entrepreneurial company, a nonprofit organization, or a governmental entity, you'll need to know how to plan for the future, make progress toward achieving goals, and make intelligent decisions. In other words, managerial accounting skills are useful in just about any career, organization, and industry. If you commit energy to this course, you'll be making a smart investment in your future—even though you cannot clearly envision it. Next, we elaborate on this point by explaining how managerial accounting relates to the future careers of business majors and accounting majors.

Business Majors

Exhibit P-3 provides examples of how planning, controlling, and decision making affect three majors other than accounting—marketing, supply chain management, and human resource management.

The left-hand column of Exhibit P-3 says marketing managers make planning decisions related to allocating advertising dollars across various communication mediums

		EXHIBIT P-3 Relating Managerial Accounting to Three Business Majors		
		Marketing	Supply Chain Management	Human Resource Management
Planning	How much should we budget for TV, print, and internet advertising?	How many units should we plan to produce next period?	How much should we plan to spend for occupational safety training?	
	How many salespeople should we plan to hire to serve a new territory?	How much should we budget for next period's utility expense?	How much should we plan to spend on employee recruitment advertising?	
Controlling	Is the budgeted price cut increasing unit sales as expected?	Did we spend more or less than expected for the units we actually produced?	Is our employee retention rate exceeding our goals?	
	Are we accumulating too much inventory during the holiday shopping season?	Are we achieving our goal of reducing the number of defective units produced?	Are we meeting our goal of completing timely performance appraisals?	
Decision Making	Should we sell our services as one bundle or sell them separately?	Should we transfer production of a component part to an overseas supplier?	Should we hire an on-site medical staff to lower our health care costs?	
	Should we sell directly to customers or use a distributor?	Should we redesign our manufacturing process to lower inventory levels?	Should we hire temporary workers or full-time employees?	

and to staffing new sales territories. From a control standpoint, they closely track sales data to see if a budgeted price cut is generating an anticipated increase in unit sales, or they study inventory levels during the holiday shopping season to adjust prices as needed to optimize sales. Marketing managers also make many important decisions, such as whether to bundle services together and sell them for one price or to sell each service separately. They may also decide whether to sell products directly to the customer or to a distributor, who sells to the end consumer.

The middle column of Exhibit P-3 says supply chain managers plan how many units to produce to satisfy anticipated customer demand. They also budget for operating expenses such as utilities, supplies, and labor costs. In terms of control, they monitor actual spending relative to the budget, and closely watch operational measures such as the number of defects produced relative to the plan. Supply chain managers make numerous decisions, such as deciding whether to transfer production of a component part to an overseas supplier, or choosing whether to redesign a manufacturing process to reduce inventory levels.

The right-hand column of Exhibit P-3 explains how human resource managers make a variety of planning decisions, such as budgeting spending for occupational safety training and employee recruitment advertising. They monitor feedback related to numerous management concerns, such as employee retention rates and the timely completion of employee performance appraisals. They also make many important decisions, such as whether to hire on-site medical staff in an effort to lower health care costs and whether to hire temporary workers or full-time employees in an uncertain economy.

For brevity, Exhibit P-3 does not include all business majors, such as finance, information technology, and economics. Can you explain how planning, controlling, and decision-making activities would relate to these majors?

Accounting Majors

Many accounting graduates begin their careers working for public accounting firms that provide a variety of valuable services for their clients. Some of these graduates will build successful and fulfilling careers in the public accounting industry; however, most leave public accounting at some point to work in other organizations.

The public accounting profession has a strong financial accounting orientation. Its most important function is to protect investors and other external parties by assuring them companies are reporting historical financial results that comply with applicable accounting rules. Managerial accountants also have strong financial accounting skills. For example, they play an important role in helping their organizations design and maintain financial reporting systems that generate reliable financial disclosures. However, the primary role of managerial accountants is to partner with their co-workers within the organization to improve performance.

If you are an accounting major, there is a high likelihood your future will involve working for a nonpublic accounting employer. This employer will expect you to have strong financial accounting skills, but more importantly, it will expect you to help improve organizational performance by applying the planning, controlling, and decision-making skills that are the foundation of managerial accounting.

A NETWORKING OPPORTUNITY

The **Institute of Management Accountants** (IMA) is a network of more than 100,000 accounting and finance professionals from over 140 countries. Every year the IMA hosts a student leadership conference that attracts 300 students from over 50 colleges and universities. Guest speakers at past conferences have discussed topics such as leadership, advice for a successful career, how to market yourself in a difficult economy, and excelling in today's multigenerational workforce. One student who attended the conference said, "I liked that I was able to interact with professionals who are in fields that could be potential career paths for me." For more information on this worthwhile networking opportunity, contact the IMA at the phone number shown below or visit <https://www.imanet.org/events/imas-student-leadership-conferences?ssopc=1>.

Source: Conversation with Jodi Ryan, the Institute of Management Accountants' Director, Student & Academic Relations. She can be contacted at (201) 474-1556.

IN BUSINESS



The Institute of Management Accountants

Professional Certification—A Smart Investment If you plan to become an accounting major, the Certified Management Accountant (CMA), Certified in Strategy and Competitive Analysis (CSCA), and Chartered Global Management Accountant (CGMA) designations are globally respected credentials that will increase your credibility, upward mobility, and compensation.

The CMA exam is sponsored by the IMA in Montvale, New Jersey. To become a CMA requires membership in the IMA, a bachelor's degree from an accredited college or university, two continuous years of relevant professional experience, and passage of the CMA exam. Exhibit P-4 summarizes the topics covered in the IMA's two-part CMA exam. For brevity, we are not going to define all the terms included in this exhibit. Its purpose is simply to emphasize that the CMA exam focuses on the planning, controlling, and decision-making skills that are critically important to all managers. Information about becoming a CMA is available on the IMA's website (www.imanet.org) or by calling 1-800-638-4427.

The IMA also sponsors the CSCA exam, which is a three-hour exam that includes 60 multiple-choice questions and one case study. The exam covers three content areas: strategic analysis, creating competitive advantage, and strategy implementation and performance evaluation. It is intended for people who have earned the CMA designation and hold positions ranging from staff accountant to chief financial officer (CFO).

EXHIBIT P-4 CMA Exam Content Specifications		
	<i>Part 1</i>	<i>Financial Planning, Performance, and Analytics</i> External financial reporting decisions Planning, budgeting, and forecasting Performance management Cost management Internal controls Technology and Analytics
	<i>Part 2</i>	<i>Strategic Financial Management</i> Financial statement analysis Corporate finance Decision analysis Risk management Investment decisions Professional ethics

The CGMA designation is co-sponsored by the **American Institute of Certified Public Accountants (AICPA)** and the **Chartered Institute of Management Accountants (CIMA)**, each of whom provides a distinct pathway to becoming a CGMA. The AICPA pathway requires a bachelor's degree in accounting (accompanied by a total of 150 college credit-hours), passage of the Certified Public Accountant (CPA) exam, membership in the AICPA, three years of relevant management accounting work experience, and passage of the CGMA exam—which is a case-based exam that focuses on technical skills, business skills, leadership skills, people skills, and ethics, integrity, and professionalism. Notice the AICPA's pathway to becoming a CGMA requires passage of the multi-part CPA exam, which emphasizes rule-based compliance—assurance standards, financial accounting standards, business law, and the tax code. Information on becoming a CGMA is available at www.cgma.org.

IN BUSINESS

HOW'S THE PAY?

The **Institute of Management Accountants** has created the following table that allows individuals to estimate what their salary would be as a management accountant.

			Your Calculation
Start with this base amount		\$63,835	\$63,835
If you are top-level management	ADD	\$64,786	
OR, if you are senior-level management	ADD	\$56,064	
OR, if you are middle-level management	ADD	\$22,587	
If you have an advanced degree	ADD	\$15,490	
If you hold the CMA	ADD	\$13,151	
If you hold the CPA	ADD	\$16,990	_____
Your estimated salary level			=====

For example, if you make it to top-level management in 10 years and have an advanced degree and a CMA, your estimated salary would be \$140,702 [$\$48,722 + \$50,462 + (10 \times \$968) + \$16,050 + \$15,788$].

Source: Shannon Charles, "IMA's Global Salary Survey," *Strategic Finance*, March 2019, pp. 29–39.

Managerial Accounting: Understanding the Broader Context

Exhibit P-5 summarizes how each chapter of the book teaches measurement skills that managers use on the job every day. For example, Chapter 8 teaches you the measurement skills managers use to answer the question: How should I create a financial plan for next year? Chapters 9 and 10 teach you the measurement skills managers use to answer the question: How well am I performing relative to my plan? Chapter 7 teaches you measurement skills related to product, service, and customer profitability. However, it is vitally important you also understand managers need to apply these measurement skills in a broader business context to enable intelligent planning, control, and decision making. This context includes topics such as Big Data; ethics; strategy; enterprise risk management; and environmental, social, and governance (ESG) responsibilities, as well as process management and leadership.

Big Data

Experts estimate every second of every day, we are creating 1.7 megabytes of new information per person. Given our global population of more than 7.5 billion people, this is a truly astonishing rate of data generation. However, less than 0.5% of this data is currently being analyzed and used to support decision making,¹ thereby suggesting business managers have an extraordinary opportunity to harness what is known as the *Big Data* phenomenon. **Big Data** refers to large collections of data gathered from inside or outside a company to provide

Chapter Number	The Key Question from a Manager's Perspective	EXHIBIT P-5 Measurement Skills: A Manager's Perspective
Chapter 1	What cost classifications do I use for different management purposes?	
Chapter 2	How much does it cost us to manufacture customized jobs for each of our customers?	
Chapters 3 & 4	What is the value of our ending inventory and cost of goods sold for external reporting purposes?	
Chapter 5	How will my profits change if I change my selling price, unit sales, or costs?	
Chapter 6	How should the income statement be presented?	
Chapter 7	How profitable is each of our products, services, and customers?	
Chapter 8	How should I create a financial plan for next year?	
Chapters 9 & 10	How well am I performing relative to my plan?	
Chapters 11 & 12	How should I implement a performance measurement system to help ensure that we achieve our strategic goals?	
Chapter 13	How do I quantify the financial impact of pursuing one course of action versus another?	
Chapter 14	How do I make long-term capital investment decisions?	
Chapter 15	What cash inflows and outflows explain the change in our cash balance?	
Chapter 16	How can we analyze our financial statements to better understand our performance?	

¹ Source: Bernard Marr, "Big Data: 20 Mind-Boggling Facts Everyone Must Read," *Forbes*, September 30, 2015.