Cost Management

A Strategic Emphasis

2024 Release

Edward J. Blocher

University of North Carolina at Chapel Hill Kenan-Flagler Business School

Paul E. Juras

Babson College Accountancy and Law Divison

Steven D. Smith

Brigham Young University Marriott School of Business







COST MANAGEMENT: A STRATEGIC EMPHASIS, 2024 RELEASE

Published by McGraw Hill LLC, 1325 Avenue of the Americas, New York, NY 10019. Copyright ©2024 by McGraw Hill LLC. All rights reserved. Printed in the United States of America. Previous editions ©2022, 2019, and 2016. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of McGraw Hill LLC, including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 LWI 29 28 27 26 25 24

ISBN 978-1-264-86070-8 (bound) MHID 1-264-86070-6 (bound)

ISBN 978-1-266-24331-8 (loose-leaf) MHID 1-266-24331-3 (loose-leaf)

Portfolio Manager: Stephanie DeRosa Product Developers: Erin Quinones and Michael McCormick Marketing Manager: Nate Anderson Content Project Managers: Amy Gehl and George Theofanopoulos Manufacturing Project Manager: Sandy Ludovissy Content Licensing Specialist: Brianna Kirschbaum Cover Image: Shutterstock/alice-photo Compositor: Straive

All credits appearing on page or at the end of the book are considered to be an extension of the copyright page.

Library of Congress Cataloging-in-Publication Data

Names: Blocher, Edward, author. | Juras, Paul E., author. | Smith, Steven D. (Steven Darby), author.

Title: Cost management : a strategic emphasis / Edward J. Blocher, University of North Carolina at Chapel Hill, Kenan-Flagler Business School, Paul E. Juras, Babson College, Accountancy and Law Division, Steven D. Smith, Brigham Young University, Marriott School of Business.

Description: 2024 release. | New York, NY : McGraw Hill, 2024. | Includes index.

Identifiers: LCCN 2023049797 (print) | LCCN 2023049798 (ebook) | ISBN 9781264860708 (hardcover) | ISBN 9781266202278 (ebook)

Subjects: LCSH: Cost accounting. | Managerial accounting.

Classification: LCC HF5686.C8 B559 2024 (print) | LCC HF5686.C8 (ebook) | DDC 658.15/52--dc23/eng/20231114

LC record available at https://lccn.loc.gov/2023049797

LC ebook record available at https://lccn.loc.gov/2023049798

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a website does not indicate an endorsement by the authors or McGraw Hill LLC, and McGraw Hill LLC does not guarantee the accuracy of the information presented at these sites.

°°°

0

0

° °

。 [。]

•

0

mheducation.com/highered

We dedicate this release ...

To my wife, Sandy, and our sons, Joseph and David

Ed Blocher

To my wife, Colleen, and my children, Stephen and Kate

Paul Juras

To my wife, Heather, and our children, Darby, Trevor, Kelli, Finneas, and Melissa

Steve Smith



Meet the Authors



Jessica Gray Starnes/Kenan-Flagler Business School/University of North Carolina at Chapel Hill



Courtesy of Carrie Allen Photography

Edward J. Blocher is an emeritus professor of accounting at the Kenan-Flagler Business School at the University of North Carolina at Chapel Hill. His undergraduate degree (economics) is from Rice University, his MBA from Tulane University, and his PhD from the University of Texas at Austin. Professor Blocher has presented regularly on strategic cost management at the national meetings of both the American Accounting Association (AAA) and the Institute of Management Accountants (IMA).

While he is involved in a number of accounting organizations, Professor Blocher has been most continually active in the IMA, where he has been a member of the IMA's Research Foundation. He is a certified management accountant (CMA), has taught review courses for the CMA exam, and has served on the IMA's national education committee. He has supervised or participated in the direction of several doctoral students, many of whom prepared dissertations in management accounting. Professor Blocher is also the author or coauthor of several articles in management accounting and in other areas of accounting and has served as associate editor and reviewer for a number of accounting journals. He published a 2009 article in *Issues in Accounting Education* on the topic of teaching strategic cost management.

Putting research and teaching into practice is important to Professor Blocher, who has worked closely with other firms and organizations in developing products, publications, and teaching materials. He was a member of the task force for the IMA that developed a new definition of management accounting in 2008. From 2010 to 2014, he served as a member of the joint curriculum task force of the Management Accounting Section (MAS) of the AAA and the IMA, which was charged with the responsibility of developing curriculum recommendations for accounting education. The task force has two recent publications in *Issues in Accounting Education*. Also, he has provided expert testimony and has consulted with a number of organizations regarding cost management matters.

Paul E. Juras is the Jefferson Vander Wolk Professor of Management Accounting and Operational Performance and former chair of the Accountancy and Law Division at Babson College. Previously, he was a professor of accountancy at Wake Forest University. He earned both his BBA and MBA at Pace University and his PhD from Syracuse University. He is a certified management accountant (CMA) and has a certified public accountant (CPA) license from New York. Professor Juras has experience in strategic management accounting. He has published articles and cases in many journals, including the *Journal of Corporate Accounting and Finance, Issues in Accounting Education, The CPA Journal*, and *Strategic Finance*. He has made numerous presentations at meetings of both the American Accounting Association (AAA) and the Institute of Management Accountants (IMA). In 2014 and in 2020, he received the IMA's Lybrand Gold Medal, awarded to the author(s) of the outstanding article of the year published in *Strategic Finance*, and in 2015 he received the IMA's R. Lee Brummet Award for Distinguished Accounting Educators.

Professor Juras taught managerial accounting and strategic cost management courses in the undergraduate program, the Masters of Science in Accountancy program, and the MBA program at Wake Forest University. He teaches strategic cost management courses in the undergraduate and various graduate programs in both face-to-face and blended-learning formats at Babson College.

He is active in CAM-I, the Consortium for Advanced Management–International, and has served in leadership roles in the Management Accounting Section of the AAA, Professor Juras dedicates most of his efforts outside the classroom to the IMA, including his role as the 2020–2021 global chair of the organization, and 2023-2024 chair of the Sustainable Business Management Committee. In addition, he has served as chair of the Institute of Certified Management Accountants, the organization responsible for the CMA certification; chaired their Sustainability Management Committee; served a three-year term as chair of the IMA Research Foundation; and, for 10 years, was an associate editor of the *IMA Educational Case Journal*.



BYU Photo

Steven D. Smith is an associate professor of accountancy and the Warnick/Deloitte Fellow in the Marriott School of Business at Brigham Young University (BYU). Previously he was an assistant professor of accountancy at the University of Illinois at Urbana-Champaign. He earned BS and MACC degrees from BYU, and MS and PhD degrees from Cornell University. He is a certified management accountant (CMA). Professor Smith teaches cost and management accounting courses in the undergraduate and graduate accounting programs, as well as the full-time and executive MBA programs at BYU. Professor Smith has experience working in the field of strategic cost management, including a professional development leave from BYU, during which he worked as an in-house financial planning and analysis consultant for Ortho Development Corporation, a medical device company in Salt Lake City, Utah.

Professor Smith's expertise is in the areas of management control systems, focusing on the provision of incentives and performance measurement. He has published numerous articles in prestigious academic publications such as *The Accounting Review, Review of Accounting Studies, Contemporary Accounting Research,* and *Journal of Management Accounting Research.* He has presented his research at conferences and invited presentations throughout the world, and has also published teaching cases in the *IMA Educational Case Journal* and *Strategic Finance.* Professor Smith has served in a variety of research- and teaching-focused positions in both the Management Accounting Section (MAS) of the American Accounting Association (AAA) and the Institute of Management Accountants (IMA). He is the recipient of the 2021 IMA Faculty Leadership Award and the 2023 Ursel K. Albers IMA Academic Mentor of the Year Award.

The Author Team was selected to create a leading book in cost management based on leadership in teaching experience, research, commitment to learning, and a connection to the profession and practice of management accounting that provides students with up-to-date knowledge of real-world management accounting issues and practices.



Blocher/Juras/Smith

Letter to the Students:

We have written this book to help you understand the role of cost management in helping an organization succeed. Unlike many books that aim to teach you *about* accounting, we aim to show you how an important area of accounting, cost management, is *used* by managers to help organizations achieve their goals.

An important aspect of cost management in our text is the strategic focus. By *strategy*, we mean the long-term plan the organization has developed to compete successfully. Most organizations strive to achieve a competitive edge through the execution of a specific strategy. For some firms, it is low cost; for others, it might be high quality, customer service, or some unique feature or attribute of its product or service. We know in these competitive times that an organization does not succeed by being ordinary. Rather, it develops a strategy that will set it apart from competitors and ensure its attractiveness to customers and other stakeholders into the future. The role of cost management is to help management of the organization attain and maintain success through strategy implementation. Thus, for every major topic covered in our text, there is a larger issue, which is: "How does this organization compete? What type of cost management information does it need?" We do *not* cover a cost management method simply to become proficient at it. We want you to know why, when, and how the technique can be used to help the organization succeed.

An understanding of the strategic role of cost management today is so important that many senior financial managers and many CPAs—both in public and in private practice—are coming back to school to learn more about strategy, competitive analysis, and new cost management techniques. Knowing how to do the accounting alone—no matter how well you do it—is, by itself, no longer sufficient. Cost management with a strategic emphasis is one way to enhance your career and to add value to your employer, whatever type of organization it might be.

0

Key Text Features That Integrate Strategy



To augment this coverage, the Blocher team encourages students to further explore real-world companies through **Cost Management in Action** boxes that appear in each chapter throughout the text. This feature poses important questions that make students think critically about the relationship between cost management and organizational strategy. At the end of each chapter, the authors then supply their comments for the **Cost Management in Action** boxes.

May

Real-World Focus *Cost Management* provides extensive realworld examples of how cost management systems can add value to the organization. The **Real-World Focus** boxes throughout the text take real organizations and demonstrate strategy in action and the role that cost management plays in supporting the organization's strategy.



Text Illustrations Clear and concise exhibits help illustrate basic and complicated topics throughout the book.

EXHIBIT 6.13 Weighted-Average vs. FIFO

alent Units



Helping Students Succeed Using Cost Management

Problem Material The Blocher team has taken great care to develop assignment material that effectively reinforces concepts, procedures, and strategic issues presented in each chapter. In addition, each chapter has one or more end-of-chapter assignments that focus on ethical issues or that deal with an international context or a service (i.e., nonmanufacturing) setting. The authors also include exercises and problems that relate topical coverage to the general issue of sustainability. Where appropriate, the chapters have assignments based on readings from periodicals such as *Strategic Finance, Management Accounting Quarterly, The Wall Street Journal*, and *Harvard Business Review*. These assignments link topical material in the chapter to the broader, strategic issues that organizations face. End-of-chapter assignments that embrace a distinguishing focus are identified as follows:



A Framework for Integrating Strategy: The Five Steps of Strategic Decision Making

The first edition of *Cost Management* introduced a five-step framework for decision making with a strategic emphasis. The framework shows that each decision starts and ends with a consideration of the organization's strategy. To extend and integrate the strategic emphasis, the ninth edition continues the tradition of including this five-step framework throughout the text. In all but a few chapters, there is a short section that uses the five-step framework to show how a consideration of the organization's strategy plays a key role in making decisions that will address the business-related problems presented in that chapter.





A complete course platform

Connect enables you to build deeper connections with your students through cohesive digital content and tools, creating engaging learning experiences. We are committed to providing you with the right resources and tools to support all your students along their personal learning journeys.





Laptop: Getty Images; Woman/dog: George Doyle/Getty Images

Every learner is unique

In Connect, instructors can assign an adaptive reading experience with SmartBook® 2.0. Rooted in advanced learning science principles, SmartBook® 2.0 delivers each student a personalized experience, focusing students on their learning gaps, ensuring that the time they spend studying is time well spent. **mheducation.com/highered/connect/smartbook**

Study anytime, anywhere

Encourage your students to download the free ReadAnywhere® app so they can access their online eBook, SmartBook® 2.0, or Adaptive Learning Assignments when it's convenient, even when they're offline. And since the app automatically syncs with their Connect account, all of their work is available every time they open it. Find out more at **mheducation.com/readanywhere**

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

Jordan Cunningham, a student at *Eastern Washington University*

Effective tools for efficient studying

Connect is designed to help students be more productive with simple, flexible, intuitive tools that maximize study time and meet students' individual learning needs. Get learning that works for everyone with Connect.





Education for all

McGraw Hill works directly with Accessibility Services departments and faculty to meet the learning needs of all students. Please contact your Accessibility Services Office, and ask them to email **accessibility@mheducation.com**, or visit **mheducation.com**/about/accessibility for more information.

Affordable solutions, added value

Make technology work for you with LMS integration for single sign-on access, mobile access to the digital textbook, and reports to quickly show you how each of your students is doing. And with our Inclusive Access program, you can provide all these tools at the lowest available market price to your students. Ask your McGraw Hill representative for more information.

Solutions for your challenges

A product isn't a solution. Real solutions are affordable, reliable, and come with training and ongoing support when you need it and how you want it. Visit **supportateverystep.com** for videos and resources both you and your students can use throughout the term.



Updated and relevant content

Our new Evergreen delivery model provides the most current and relevant content for your course, hassle-free. Content, tools, and technology updates are delivered directly to your existing McGraw Hill Connect® course. Engage students and freshen up assignments with up-to-date coverage of select topics and assessments, all without having to switch editions or build a new course.

What's NEW?

Applying Tableau: Data Visualization Assignments

• • • • • •

The 2024 release of *Cost Management* builds upon data analytics and visualization with additional assignments using "Applying Tableau" in *Connect*. This includes video and text instruction, assignment material, and feedback. These assignments provide vital training and development in one of the most important emerging aspects of management: using technology to analyze large data sets with effective visualization tools.

New! Integrated Excel

These auto-graded assignments help introduce students to Excel formulas using Excel online integrated with Connect, which means no student purchase of Excel is required. Student "Hint" videos demonstrating a guided example are included.

New! Text Hints

Text Hints in *Connect* provide short, written tips or hints on how to approach key points of select exercises. The instructor can choose to turn the Hint feature on or off using assignment settings.

New! Guided Examples

"Hint" videos in *Connect* provide a narrated, step-by-step walkthrough of select exercises that are similar to those being assigned, providing reinforcement where students need it most. These short presentations can be turned on or off by the instructor.

Integration of Important Topics throughout the Text

Key topic areas for the course are integrated across the chapters. As previously noted, strategy is integrated throughout the text. In addition, accounting for "lean" is included in four chapters as it relates to the subject matter of that chapter. Similarly, time-driven activity-based costing (TDABC) is covered in the ABC chapter (Chapter 5) and also in the chapter on budgeting (Chapter 10). ABC appears in most of the chapters in Part Two because it has a key role in planning and decision making. Nonfinancial performance measures and the balanced scorecard (BSC) are introduced in Part One and then covered as part of the operational and management control chapters included in Parts Three and Four. Resource consumption accounting (RCA) is covered both in Chapter 5 and again in Chapter 15. The topic of capacity resource planning is covered in Chapters 10 and 15. These are just examples of the efforts the authors have made to integrate key topics throughout the text.

Enhancing Features from Prior Releases

•

- The Excel Tutorial videos and documentation for each chapter have been fully reproduced for the tenth edition, using Excel version 16. Students can simultaneously hone their Excel skills and apply those skills to managerial topics using functions such as pivot tables, charts and graphs, Goal Seek, Solver, and regression analysis. Tutorials are offered for each chapter in both step-by-step tutorial documents and videos. In addition, the book provides "Applying Excel" content within *Connect*, enabling instructors to more easily integrate Excel into their courses and allowing students further practice using algorithmic versions. As always, *Cost Management* is unique in its integration of Excel skills into both the text of the chapters and much of the end-of-chapter content.
- Cost Management: A Strategic Emphasis, 2024 release, also offers a large selection of recently used Certified Management Accountant (CMA) Exam problems and essay questions (with solutions) in Connect. These problems and essay questions are linked to the book chapters to which the topics most closely relate, and they create an even richer library of content (much of it auto-gradable) that instructors may use to build homework and other assignments. These problems also present

°°°



valuable practice material for students who are interested in pursuing the CMA designation, either as students or following their formal education.

- Significant new material has been added to *Connect* to greatly enhance the usefulness of this teaching and learning environment.
- Chapters have been revised to include up-to-date issues in cost management and discuss how
 accountants are dealing with these issues; examples include the COVID-19 recession, ESG
 reporting, data analytics, the volatility of foreign exchange rates, strategic cost management, and
 changes in management compensation practices, among others. Because of the strategic focus of
 the book, we put emphasis on providing current, real-world examples in the text and in the problem
 material. This material is then updated for each new release.
- End-of-chapter exercises and problems have been enhanced, with a strong focus on providing clarity and a clear linkage to chapter learning objectives, with varying and appropriate levels of challenge.



Remote Proctoring and Browser-Locking Capabilities

New remote proctoring and browser-locking capabilities, hosted by Proctorio within *Connect*, provide control of the assessment environment by enabling security options and verifying the identity of the student.

Seamlessly integrated within *Connect*, these services allow instructors to control students' assessment experience by restricting browser activity, recording students' activity, and verifying students are doing their own work.

Instant and detailed reporting gives instructors an at-a-glance view of potential academic integrity concerns, thereby avoiding personal bias and supporting evidence-based claims.

Evergreen

Content and technology are ever-changing, and it is important that you can keep your course up to date with the latest information and assessments. That's why we want to deliver the most current and relevant content for your course, hassle-free.

Cost Management is moving to an Evergreen delivery model, which means it has content, tools, and technology that is updated and relevant, with updates delivered directly to your existing McGraw Hill *Connect*[®] course. Engage students and freshen up assignments with up-to-date coverage of select topics and assessments, all without having to switch editions or build a new course.

Polling

Every learner has unique needs. Uncover where and when you're needed with the new Polling tool in McGraw Hill *Connect*[®]! Polling allows you to discover where students are in real time. Engage students and help them create connections with your course content while gaining valuable insight during lectures. Leverage polling data to deliver personalized instruction when and where it is needed most.



ReadAnywhere[®] App

Read or study when it's convenient with McGraw Hill's free ReadAnywhere[®] app. Available for iOS and Android smartphones or tablets, it gives users access to McGraw Hill tools including the eBook and SmartBook[®] or Adaptive Learning Assignments in McGraw Hill *Connect*[®]. Students can take notes, highlight, and complete assignments offline—all their work will sync when connected to Wi-Fi. Students log in with their *Connect* username and password to start learning—anytime, anywhere!



Test Builder in Connect

Available within McGraw Hill *Connect*[®], Test Builder is a cloud-based tool that enables instructors to format tests that can be printed, administered within a Learning Management System, or exported as a Word document. 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.



Enhancements for This Release

For All Chapters:

- Real-World Focus feature updates throughout
- Updates to time-based elements and links in EOC
- Additions and revisions to end-ofchapter content for adaptability in *Connect*

Part One: Introduction to Strategy, Cost Management, and

Cost Systems

Chapter 1: Cost Management and Strategy

- Updated and revised chapter opener (Walmart)
- Added discussion of ESG (replacing Social, Political, and Climate Change Considerations, now called Environmental, Social, and Governance (ESG) Considerations) to "The Contemporary Business Environment section, added "ESG reporting" as a glossary term
- Added brief discussion of the IMA Management Accounting Competency Framework, added new exhibit with framework graphic
- Revised Cost Management in Action and Comments on CMA

Chapter 2: Implementing Strategy: The Value Chain, the Balanced Scorecard, and the Strategy Map

- Updated and revised chapter opener (Amazon)
- Revised Sustainability section, updating time-based elements and implementing more ESG language

Chapter 3: Basic Cost Management Concepts

- Updated opening scenario to mention 2022 results of the cost-cutting efforts started in 2016, that was a 5-year cost reduction plan
- COST MANAGEMENT IN ACTION—Cost per Bushel of Soybeans in the U.S.
- Clarification of language on cost behavior and cost classifications

Chapter 4: Job Costing

- COST MANAGEMENT IN ACTION—Is Job Costing a Match for Caterpillar's Manufacturing Process?
- Updates to sections on cost flows, discussing technology and the proration method for disposition of over/underapplied overhead

Chapter 5: Activity-Based Costing and Customer Profitability Analysis

• New subsection added to Customer Profitability section titled "Customer Acquisition Costs"

Chapter 6: Process Costing

- Updated opening scenario to reflect information current as of 2022
- Updates for currency to Cost Management in Action

Chapter 7: Cost Allocation: Departments, Joint Products, and By-Products

• Clarifying language and revisions throughout

• •

Part Two: Planning and Decision Making

Chapter 8: Cost Estimation

- Updated chapter opener to be more current and incorporate supply chain disruptions experienced in 2020–2022
- The Five Steps of Strategic Decision Making for Harrah's—Updated Harrah's is now Caesars
- Minor updates to text and wording updates for clarity

Chapter 9: Short-Term Profit Planning: Cost-Volume-Profit (CVP) Analysis

• Updated chapter opener to reflect information current for iHeartMedia as of August 2022

Chapter 10: Strategy and the Master Budget

• Updated chapter opener with current information about Johnson & Johnson

Chapter 11: Decision Making with a Strategic Emphasis

• Updated chapter opener to add an example from Amazon to the existing Apple example

Chapter 12: Strategy and the Analysis of Capital Investments

- Revised chapter opener with new company (AT&T)
- Revised "Recent Developments. . ." section in "Strategy and the Analysis of Capital Expenditures"

- Updates and revisions to four Real-World Focus items
- Two new problems, both available in *Connect*

Chapter 13: Cost Planning for the Product Life Cycle: Target Costing, Theory of Constraints, and Strategic Pricing

- Two new Real-World Focus items (discussing designing for the market and pricing with artificial intelligence) with updates to three others
- Appendix and associated end-ofchapter content removed

Part Three: Operational-Level Control

Chapter 14: Operational Performance Measurement: Sales, Direct Cost Variances, and the Role of Nonfinancial Performance Measures

• Updated and revised chapter opener (UPS)

Chapter 15: Operational Performance Measurement: Indirect Cost Variances and Resource Capacity Management

- Updated and revised chapter opener (Southwest Airlines)
- Revised Cost Management in Action and Comments on CMA

Chapter 16: Operational Performance Measurement: Further Analysis of Productivity and Sales

• Updated the opening scenario to reflect information current as of July 2022

Chapter 17: The Management and Control of Quality

- Updated and revised chapter opener
- Updated Cost Management In Action based on 2022 college rankings

Part Four: Management-Level Control

Chapter 18: Strategic

Performance Measurement: Cost Centers, Profit Centers, and the Balanced Scorecard

Revised chapter opener

Chapter 19: Strategic

Performance Measurement: Investment Centers and Transfer Pricing

• New chapter opener about MLB cost per win measure

Chapter 20: Management Compensation, Business Analysis, and Business Valuation

• New chapter opener about Oracle's executive compensation

Acknowledgments

Our Sincerest Thanks . . .

In writing this book, we were fortunate to have received extensive feedback from a number of accounting educators. We want to thank our colleagues for their careful and complete review of our work. The comments that we received were invaluable in helping us to shape the manuscript. We believe that this collaborative development process helped us to create a text that will truly meet the needs of today's students and instructors. We are sincerely grateful to the following individuals for their participation in the process:

Reviewers of Past Releases:

Wagdy Abdallah, Seton Hall University Nas Ahadiat, California State Polytechnic University-Pomona Margaret Andersen, North Dakota State University Vidya N. Awasthi, Seattle University K. R. Balachandran, New York University Mohamed E. Bayou, School of Management, University of Michigan–Dearborn Janice Benson, University of Wyoming Jeremiah Bentley, University of Massachusetts-Amherst Marvin L. Bouillon, Iowa State University Kristine Brands, Regis University Wayne Bremser, Villanova University Wede E. Brownell, University of Central Oklahoma Laurie Burney, *Baylor University* Cathleen Burns, Trinity University Tom Buttross, Pennsylvania State-Harrisburg Tim Cairney, Georgia Southern University Dennis Caplan, Oregon State University Sandra Cereola, James Madison University James A. Chiafery, University of Massachusetts-Boston Bea Chiang, The College of New Jersey Michele Chwastiak, University of New *Mexico–Albuquerque* Andrew Clinton, Central College Matthew Cobabe, Virginia Tech Jeffrey Cohen, Boston College Cheryl Corke, Genesee Community College

Alan B. Czyzewski, Indiana State University Robert J. DePasquale, Saint Vincent College Jennifer Dosch, Metropolitan State University Joe Dowd, Eastern Washington University Robert W. Duron, Chadron State College David Eichelberger, Austin Peay State University Rafik Elias, California State University-Los Angeles James M. Emig, Villanova University Sidney Ewer, Missouri State University Karen Farmer, Texas A&M University Jerry W. Ferry, University of North Alabama Michael Flores, Wichita State University Jay D. Forsyth, Central Washington University Benjamin P. Foster, University of Louisville Michael J. Gallagher, DeSales University Steven Gattuso, Canisius College Mike Grayson, Jackson State University Ralph Greenberg, Temple University-Philadelphia Olen L. Greer, Southwest Missouri State University Donald C. Gribbin, Southern Illinois University Sanjay Gupta, Valdosta State University Matthew Haertzen, University of Arizona Michael Hammond, Missouri State University Betty Harper, Middle Tennessee State University Jeannie Harrington, Middle Tennessee State University

• •

Judith A. Harris, Nova Southeastern University Syd Hasan, George Mason University Haihong He, California State University-Los Angeles Aleecia Hibbets, University of Louisiana-Monroe James Higgins, Holy Family University Jay Holmen, University of Wisconsin-Eau Claire Linda Holmes, University of Wisconsin-Whitewater Norma C. Holter, Towson University David R. Honodel, University of Denver Bambi Hora, University of Central Oklahoma Todd Jensen, California State University-Sacramento Sanford R. Kahn, University of Cincinnati Vijay Karan, California State University-Fullerton Larry N. Killough, Virginia Polytechnic Institute and State University Il-Woon Kim, University of Akron Mehmet C. Kocakulah, University of Southern Indiana Laura Jean Kreissl, University of Wisconsin-Parkside Leslie Kren, University of Wisconsin-Milwaukee Sandra S. Lang, McKendree College Randall E. LaSalle, West Chester University of Pennsylvania Dan Law, Gonzaga University Sara Leone, University of St. Francis Haijin Lin, University of Houston Ping Lin, California State University-Long Beach Xiang Liu, California State University-San Bernardino Stephen Makar, University of Wisconsin-Oshkosh Joetta Malone, Strayer University Man C. Maloo, Towson University Linda Marquis, Northern Kentucky University John McGowan, St. Louis University Brian L. McGuire, University of Southern Indiana Laurie B. McWhorter, Mississippi State University

Yaw M. Mensah, Rutgers University Tammy Metze, Milwaukee Area Technical College Jamshed Mistry, Suffolk University Chervl E. Mitchem, Virginia State University Michael Morris, University of Notre Dame Ann Murphy, Metropolitan State College of Denver Richard Newmark, University of Northern Colorado Jennifer Niece, Assumption College Dan O'Brien, Madison College Margaret O'Reilly-Allen, Rider University Lisa Owens, Clemson University Chei M. Paik, George Washington University Frank A. Paliotta, Northwest Christian University Joanne Pencak, Castleton State College Hugh Pforsich, University of Idaho Letitia Pleis, Metropolitan State University of Denver Shirley Polejewski, University of St. Thomas Kay Poston, University of Indianapolis Jenice Prather-Kinsey, University of Missouri–Columbia Jason T. Rasso, University of South Carolina Jack Ruhl, Western Michigan University Martha L. Sale. Sam Houston State University Marsha Scheidt, University of Tennessee-Chattanooga Stanley Self, Kaplan University Dennis Shanholtzer, Metropolitan State University Shiv Sharma, Robert Morris University Kenneth P. Sinclair, Lehigh University Stevenson Smith, University of South Dakota John L. Stancil, Florida Southern College Justin P. Stearns, University of Illinois-Springfield Ronald Stoltzfus, Eastern Mennonite University Ronald A. Stunda, Birmingham-Southern College Steve Swirsky, Florida A&M University Jerry Thorne, North Carolina A&T State University Rich White, Florida Metro University



Many talented educators and professionals have worked hard to create the materials for this product, and for their efforts, we are grateful. Thank you to our contributing authors and accuracy checkers who have worked diligently on this new release:

Text, Connect, and Supplement Accuracy Checkers: Helen Roybark, Beth Kobylarz, Patti Lopez; Eric Weinstein, Suffolk County Community College; Teresa Alenikov, Cerritos College

PowerPoint reviews: Helen Roybark

Excel videos revision: Hayden Gunnell

Test Bank revision: Derek Smith

Finally, we are most appreciative of the outstanding assistance and support provided by the professionals of McGraw Hill: Tim Vertovec, our VP, Rebecca Olson, senior portfolio director, and Stephanie DeRosa, our associate portfolio manager, for their guidance; our senior product developers, Erin Quinones and Michael McCormick, for their invaluable suggestions; Nate Anderson, our executive marketing manager, for his significant promotional efforts; Amy Gehl and George Theofanopoulous, our content project managers, for their attention to detail and for the outstanding presentation of the text.

Ed Blocher Paul Juras Steve Smith



Brief Contents

PART ONE

Introduction to Strategy, Cost Management, and Cost Systems 1

- 1 Cost Management and Strategy 2
- 2 Implementing Strategy: The Value Chain, the Balanced Scorecard, and the Strategy Map 39
- **3** Basic Cost Management Concepts **75**
- 4 Job Costing 108
- 5 Activity-Based Costing and Customer Profitability Analysis 144
- 6 Process Costing 192
- 7 Cost Allocation: Departments, Joint Products, and By-Products 241

PART TWO

Planning and Decision Making 285

- 8 Cost Estimation 286
- 9 Short-Term Profit Planning: Cost-Volume-Profit (CVP) Analysis 335
- **10** Strategy and the Master Budget 377
- 11 Decision Making with a Strategic Emphasis 435
- 12 Strategy and the Analysis of Capital Investments 486
- 13 Cost Planning for the Product Life Cycle: Target Costing, Theory of Constraints, and Strategic Pricing 554

PART THREE

Operational-Level Control 595

- 14 Operational Performance Measurement: Sales, Direct Cost Variances, and the Role of Nonfinancial Performance Measures 596
- 15 Operational Performance Measurement: Indirect Cost Variances and Resource Capacity Management 647
- 16 Operational Performance Measurement: Further Analysis of Productivity and Sales 696
- 17 The Management and Control of Quality 739

PART FOUR

Management-Level Control 799

- 18 Strategic Performance Measurement: Cost Centers, Profit Centers, and the Balanced Scorecard 800
- 19 Strategic Performance Measurement: Investment Centers and Transfer Pricing 849
- 20 Management Compensation, Business Analysis, and Business Valuation 895

GLOSSARY 932

INDEX 943

Contents

Walkthrough vii

PART ONE

INTRODUCTION TO STRATEGY, COST MANAGEMENT, AND COST SYSTEMS 1

Chapter 1 Cost Management and Strategy 2 Management Accounting and the Role of Cost Management 3 The Four Functions of Management 5 Strategic Management and the Strategic Emphasis in Cost Management 6 Types of Organizations 6 The Contemporary Business Environment 8 The Global Business Environment 8 *Lean Manufacturing* 8 Use of Information Technology, the Internet, and Enterprise Resource Management 9 Focus on the Customer 9 Management Organization 9 Environmental, Social, and Governance (ESG) Considerations 10 The Strategic Focus of Cost Management 10 Contemporary Management Techniques: The Management Accountant's Response to the Contemporary Business Environment 11 The Balanced Scorecard (BSC) and Strategy Map 11 The Value Chain 12 Activity-Based Costing and Management 13 **Business Analytics** 13 Target Costing 13 Life-Cycle Costing 13 Benchmarking 14 Business Process Improvement 14 Total Quality Management 14 Lean Accounting 14 The Theory of Constraints 14 Sustainability 15 Enterprise Risk Management 15 How a Firm Succeeds: The Competitive Strategy 15 Developing a Competitive Strategy 17 Cost Leadership 17 Differentiation 17 Other Strategic Issues 17 The Five Steps of Strategic Decision Making 18 The Professional Environment of Cost Management 19 Professional Organizations 20 Professional Certifications 22 Professional Ethics 23

Summary 25 Key Terms 26 Comments on Cost Management in Action 26 Self-Study Problem 26 Questions 27 Brief Exercises 28 Exercises 29 Problems 31 Solution to Self-Study Problem 37

Chapter 2 Implementing Strategy: The Value Chain, the Balanced Scorecard, and the Strategy Map 39

Strengths-Weaknesses-Opportunities-Threats (SWOT) Analysis 40 Execution 42 Value-Chain Analysis 44 Value-Chain Analysis in Computer Manufacturing 46 The Five Steps of Strategic Decision Making for CIC Manufacturing 47 The Balanced Scorecard and Strategy Map 48 The Balanced Scorecard (BSC) 48 The Strategy Map 50 Sustainability: Expanding the Balanced Scorecard 53 Indicators of Concern about Sustainability 53 How Companies Have Responded 54 Sustainability Measures for the Balanced Scorecard 55 Summary 56 Key Terms 57 Comments on Cost Management in Action 57 Self-Study Problems 57 Ouestions 58 Brief Exercises 59 Exercises 60 Problems 62 Solutions to Self-Study Problems 73

Chapter 3 Basic Cost Management Concepts 75

Costs, Cost Drivers, Cost Objects, and Cost Assignment 76 *Cost Assignment and Cost Allocation: Direct and Indirect Costs* 77 *Cost Drivers and Cost Behavior* 80 *Activity-Based Cost Drivers* 80 *Volume-Based Cost Drivers* 80 *Structural and Executional Cost Drivers* 86 *The Five Steps of Strategic Decision Making for Procter & Gamble* 87 Cost Concepts for Product and Service Costing 88 Product Costs and Period Costs 89 Manufacturing and Merchandising Costing 90 Attributes of Cost Information 92 Periodic and Perpetual Inventory Systems 94 Summary 94 Key Terms 94 Comments on Cost Management in Action 95 Self-Study Problem 95 Questions 95 Brief Exercises 96 Exercises 97 Problems 103 Solution to Self-Study Problem 106

Chapter 4 Job Costing 108

Costing Systems 109 Cost Accumulation: Job or Process Costing? 109 Cost Measurement: Actual, Normal, or Standard Costing? 110 **Overhead Application under Normal Costing:** Volume-Based or Activity-Based? 110 The Strategic Role of Costing 111 Job Costing: The Cost Flows 111 Direct and Indirect Materials Costs 112 Direct and Indirect Labor Costs 115 Factory Overhead Costs 116 The Application of Factory Overhead in Normal Costing 117 Cost Drivers for Factory Overhead Application 117 Applying Factory Overhead Costs 117 Departmental Overhead Rates 118 Disposition of Underapplied and Overapplied Overhead 119 Potential Errors in Overhead Application 120 Job Costing in Service Industries; Project Costing 121 Operation Costing 123 Summary 125 Appendix: Spoilage, Rework, and Scrap in Job Costing 126 Key Terms 127 Comments on Cost Management in Action 127 Self-Study Problem 128 Ouestions 129 Brief Exercises 129 Exercises 131 Problems 134 Solution to Self-Study Problem 142

Chapter 5 Activity-Based Costing and Customer Profitability Analysis 144

The Strategic Role of Activity-Based Costing 145 Role of Volume-Based Costing 146 Activity-Based Costing 146

Resources, Activities, Resource Consumption Cost Drivers, and Activity Consumption Cost Drivers 146 What Is Activity-Based Costing? 147 The Two-Stage Cost Assignment Procedure 147 Steps in Developing an Activity-Based Costing System 149 Step 1: Identify Resource Costs and Activities 149 Step 2: Assign Resource Costs to Activities 150 Step 3: Assign Activity Costs to Cost Objects 151 Benefits of Activity-Based Costing 151 A Comparison of Volume-Based and Activity-Based Costing 152 Volume-Based Costing 152 Activity-Based Costing 153 The Five Steps of Strategic Decision Making for Haymarket BioTech Inc. 155 Calculating the Cost of Idle Capacity in ABC 155 Activity-Based Management 157 What Is Activity-Based Management? 157 Activity Analysis 158 Value-Added Analysis 158 Real-World Activity-Based Costing/Management Applications 160 Customer Profitability Analysis 161 Customer Cost Analysis 162 Customer Profitability Analysis 163 Customer Per Customer Acquired 164 Customer Lifetime Value 166 Implementation Issues and Extensions 167 Multistage Activity-Based Costing 168 Resource Consumption Accounting (RCA) 169 Time-Driven Activity-Based Costing (TDABC) 170 Summary 171 Key Terms 172 Comments on Cost Management in Action 172 Self-Study Problem 172 Ouestions 173 Brief Exercises 174 Exercises 174 Problems 180 Solution to Self-Study Problem 190

Chapter 6 Process Costing 192

Characteristics of Process Costing Systems 193 Equivalent Units 194 Flow of Costs in Process Costing 195 Steps in Process Costing (The Production Cost Report) 196 Process Costing Methods 197 Illustration of Process Costing 198 Weighted-Average Method 198 First-In, First-Out (FIFO) Method 201 Comparison of Weighted-Average and FIFO Methods 207 Process Costing with Multiple Departments 207 Transferred-in Costs 209

Weighted-Average Method 209 The FIFO Method 211 Journal Entries for Process Costing 214 Implementation and Enhancement of Process Costing 215 Activity-Based Costing and the Theory of Constraints 215 Just-in-Time Systems and Backflush Costing 215 Normal and Standard Process Costing 217 Summary 218 Appendix: Spoilage in Process Costing 218 Key Terms 222 Comments on Cost Management in Action 222 Self-Study Problems 222 Ouestions 223 Brief Exercises 224 Exercises 225 Problems 227 Solutions to Self-Study Problems 236

Chapter 7 Cost Allocation: Departments, Joint Products, and By-Products 241

The Strategic Role and Objectives of Cost Allocation 243 The Ethical Issues of Cost Allocation 244 Cost Allocation to Service and Production Departments 244 First Phase: Trace Direct Costs and Allocate Indirect Costs to All Departments 246 Allocation in Second and Third Phases 247 Implementation Issues 252 Cost Allocation in Service Industries 257 Joint Product Costing 260 Methods for Allocating Joint Costs to Joint Products 261 Summary 265 Appendix: By-Product Costing 266 Key Terms 269 Comments on Cost Management in Action 269 Self-Study Problem 270 Ouestions 270 Brief Exercises 270 Exercises 271 Problems 275 Solution to Self-Study Problem 283

PART TWO PLANNING AND DECISION MAKING 285

Chapter 8 Cost Estimation 286

Strategic Role of Cost Estimation 287
Using Cost Estimation to Predict Future Costs 287
Using Cost Estimation to Identify Cost Drivers 289
Six Steps of Cost Estimation 289
Step 1: Define the Cost Object 289
Step 2: Determine the Cost Drivers 289
Step 3: Collect Consistent and Accurate Data 289
Step 4: Graph the Data 290

Step 5: Select and Employ the Estimation Method 290 Step 6: Assess the Accuracy of the Cost Estimate 290 Cost Estimation Methods 291 An Illustration of Cost Estimation 291 High-Low Method 291 Regression Analysis 294 An Example: Using Regression to Estimate Maintenance Costs 299 A Second Example: Using Excel for Regression Analysis 300 Illustration of the Use of Regression Analysis in the Gaming Industry 301 The Five Steps of Strategic Decision Making for Caesars 301 Time-Series and Cross-Sectional Regression 302 Implementation Problems: Nonlinearity 304 Summary 305 Appendix: Learning Curve Analysis 305 Regression Analysis Supplement (online) 309 Key Terms 309 Comments on Cost Management in Action 309 Self-Study Problems 310 Questions 312 Brief Exercises 313 Exercises 314 Problems 320 Solutions to Self-Study Problems 331

Chapter 9 Short-Term Profit Planning: Cost-Volume-Profit (CVP) Analysis 335

Cost-Volume-Profit Analysis 336 Contribution Margin and Contribution Income Statement 337 Strategic Role of CVP Analysis 339 CVP Analysis for Breakeven Planning 340 Breakeven in Units, O 340 Breakeven in Dollars 340 Shortcut Formulas 341 CVP Graph and the Profit-Volume Graph 341 CVP Analysis for Profit Planning 343 Revenue Planning 343 Cost Planning 343 Including Income Taxes in CVP Analysis 347 CVP Analysis for Activity-Based Costing 348 Dealing with Uncertainty 350 What-If Analysis 350 Decision Tables/Decision Trees/Expected Value Analysis 350 Margin of Safety (MOS) 351 Operating Leverage 352 The Five Steps of Strategic Decision Making for CVP Analysis 355 CVP Analysis with Two or More Products/Services 355 Multiproduct Profit Planning Using the Weighted-Average Contribution Margin Ratio 356 Multiproduct Profit Planning Using the Weighted-Average Contribution Margin per Unit 357 Value Stream Accounting and CVP Analysis 357

CVP Analysis for Not-for-Profit Organizations 358 Assumptions and Limitations of Conventional CVP Analysis 359 *Linearity, the Relevant Range, and Step Costs 359* Summary 360 Key Terms 360 Comments on Cost Management in Action 361 Self-Study Problem 361 Questions 361 Brief Exercises 361 Exercises 362 Problems 367 Solution to Self-Study Problem 376

Chapter 10 Strategy and the Master Budget 377

Role of Budgets 378 Strategy and the Master Budget 379 Importance of Strategy in Budgeting 379 Strategic Goals and Long-Term Objectives 379 Short-Term Objectives and the Master Budget 380 The Budgeting Process 380 Budget Committee 381 Budget Period 381 Budget Guidelines 381 Negotiation, Review, and Approval 381 Revision 381 Comprehensive Budgeting Example: Kerry Window Systems Inc. 381 The Five Steps of Strategic Decision Making for Kerry Window Systems Inc. 382 Master Budget 382 Sales Budget 382 Manufacturing Budgets 384 Merchandise Purchases Budget 390 Selling and Administrative Expense Budget 390 Cash Receipts (Collections) Budget 391 Cash Budget 392 Budgeted Income Statement 394 Budgeted Balance Sheet 394 Uncertainty and the Budgeting Process 395 What-If Analysis 396 Sensitivity Analysis 398 Scenario Analysis 399 Budgeting in Service Companies 399 Budgeting in Service Industries 399 Alternative Budgeting Approaches 401 Zero-Base Budgeting 401 Activity-Based Budgeting 402 Time-Driven Activity-Based Budgeting 404 Kaizen (Continuous-Improvement) Budgeting 405 Behavioral Issues in Budgeting 405 Budgetary Slack 405

Goal Congruence 406 Authoritative or Participative Budgeting? 406 Difficulty Level of the Budget Target 406 Linkage of Compensation and Budgeted Performance 407 Summary 409 Key Terms 410 Comments on Cost Management in Action 410 Self-Study Problems 410 Questions 412 Brief Exercises 412 Exercises 413 Problems 424 Solutions to Self-Study Problems 432

Chapter 11 Decision Making with a Strategic Emphasis 435

The Five Steps of the Decision-Making Process 436 Relevant Cost Analysis 437 Relevant Cost Information 437 Batch-Level Cost Drivers 439 Depreciation Expense: Relevant or Not? 440 Other Relevant Information 441 Strategic Analysis 441 Special-Order Decisions 442 Relevant Cost Analysis 442 Strategic Analysis 444 Is TTS Operating at Full Capacity? 444 Excessive Relevant Cost Pricing 444 Other Important Strategic Factors 445 Value Stream Accounting and the Special-Order Decision 445 Make-vs.-Buy and Lease-vs.-Buy Decisions 445 Relevant Cost Analysis 445 Make-vs.-Buy Decision 445 Lease-vs.-Purchase (Buy) Decision 446 Strategic Analysis 448 Decisions to Sell before or after Additional Processing 449 Relevant Cost Analysis 449 Strategic Analysis 450 Product- (or Service-) Line Profitability Analysis: Keep or Drop a Product (or Service) Line 451 Relevant Cost Analysis 451 Strategic Analysis 452 Profitability Analysis: Service Offerings of Not-for-Profit Organizations 453 Relevant Cost Analysis 453 Strategic Analysis 454 Constrained Optimization Analysis: Short-Term Product-Mix Decisions 454 Case 1: One Production Constraint 454 Case 2: Two or More Production Constraints 456



Behavioral and Implementation Issues 458 Consideration of Strategic Objectives 458 Predatory Pricing Practices 458 Replacement of Variable Costs with Fixed Costs 458 Proper Identification of Relevant Factors 459 Summary 459

Appendix: Linear Programming and the Product-Mix Decision 460

Key Terms 463 Comments on Cost Management in Action 463 Self-Study Problems 464 Questions 465 Brief Exercises 465 Exercises 466 Problems 471 Solutions to Self-Study Problems 484

Chapter 12 Strategy and the Analysis of Capital Investments 486

Strategy and the Analysis of Capital Expenditures 487 The Nature of Capital Expenditures 487 Recent Developments in Capital Investment: Economic Uncertainty and COVID-19 487 Strategic Analysis 488 The Role of Accounting in the Capital Budgeting Process 489 Linkage to the Master Budget 489 Linkage to Strategy and the Balanced Scorecard 489 Generation of Relevant Financial Data for Decision-Making Purposes 490 Conducting Post Audits 491 The Five Steps of Strategic Decision Making: Cost-Benefit Analysis of a Proposed Hospital Bar-Code Technology Investment 491 Identification of Relevant Cash Flow Data for Capital Investment Analysis 492 Why Focus on Cash Flows and the Timing of These Cash Flows? 492 Cash Flows—A Framework for Analysis 492 Sample Data Set: Mendoza Company—Equipment-Purchase Decision 493 Determining After-Tax Cash Flows for Capital Investment Analysis 493 Recap—After-Tax Cash Flow Information for the Mendoza Company Investment Proposal 498 Discounted Cash Flow Capital Budgeting Decision Models 499 Types of Capital Budgeting Decision Models 499 DCF Models: Specifying the Discount Rate 499 Estimating the WACC 499 Net Present Value Decision Model 502 Internal Rate of Return Decision Model 503 The Modified Internal Rate of Return 505

Comparison of NPV and IRR Methods: Which to Use? 506 Uncertainty and the Capital Budgeting Process 506 Sensitivity Analysis 506 Real Options 509 Other Capital Budgeting Decision Models 513 Pavback Period 513 Accounting (Book) Rate of Return 516 Behavioral Issues in Capital Budgeting 517 Common Behavioral Problems: Cost Escalation, Incrementalism, and Uncertainty Intolerance 517 Goal Congruence Issues 518 Addressing the Goal Congruence Problem 519 Summary 520 Appendix A: Structuring an Asset Replacement Decision Problem—Spreadsheet Templates 522 **Appendix B: DCF Models: Some Advanced Considerations** 525 Appendix C: Present Value Tables 527 Key Terms 529 Comments on Cost Management in Action 529 Self-Study Problem 529 Questions 531 Brief Exercises 531 Exercises 532 Problems 541 Solution to Self-Study Problem 549

Chapter 13 Cost Planning for the Product Life Cycle: Target Costing, Theory of Constraints, and Strategic Pricing 554

Target Costing 556 Value Engineering 558 Target Costing and Kaizen 561 An Illustration: Target Costing in Health Product Manufacturing 561 An Illustration Using Quality Function Deployment 562 Benefits of Target Costing 565 The Theory of Constraints 565 The Use of the Theory of Constraints in Health Product Manufacturing 566 Steps in the Theory of Constraints Analysis 567 The Five Steps of Strategic Decision Making for Speed and Efficiency in the Fashion Industry 571 Theory of Constraints Reports 572 Activity-Based Costing and the Theory of Constraints 573 Life-Cycle Costing 573 The Importance of Design 573 Strategic Pricing Using the Product Life Cycle 575 Pricing Using the Cost Life Cycle 576 Strategic Pricing for Phases of the Sales Life Cycle 578 Strategic Pricing: Analytical and Peak Pricing Methods 579



Summary 579 Key Terms 580 Comments on Cost Management in Action 580 Self-Study Problem 580 Questions 581 Brief Exercises 582 Exercises 582 Problems 587 Solutions to Self-Study Problem 594

PART THREE

OPERATIONAL-LEVEL CONTROL 595

Chapter 14 Operational Performance Measurement: Sales, Direct Cost Variances, and the Role of Nonfinancial Performance Measures 596

The Schmidt Machinery Company 597 Management Accounting and Control Systems 598 Developing an Operational Control System: The Five Steps of Strategic Decision Making for Schmidt Machinery 599 Short-Term Financial Control 599 Flexible Budgets and Profit-Variance Analysis 600 The Flexible Budget 600 Sales Volume Variance and the Flexible Budget Variances 602 Further Analysis of the Direct Materials Flexible Budget Variance 608 Standard Costs 613 Standard Costs vs. a Standard Cost System 613 Types of Standards 614 Standard-Setting Procedures 615 Establishing Standard Costs 615 Recording Cost Flows and Variances in a Standard Cost System 616 Direct Materials Cost 616 Direct Labor Cost 618 Application of Standard Factory Overhead Costs 619 Completion of Production 619 The Strategic Role of Nonfinancial Performance Indicators 619 Limitations of Short-Term Financial Control 620 Business Processes 621 **Operating Processes** 622 Just-in-Time Manufacturing 623 Summary 625 Key Terms 627 Comments on Cost Management in Action 627 Self-Study Problems 627 Questions 629 Brief Exercises 629 Exercises 630

Problems 637 Solutions to Self-Study Problems 643

Chapter 15 Operational Performance Measurement: Indirect Cost Variances and Resource Capacity Management 647

Standard Overhead Costs: Planning vs. Control 648 Variance Analysis for Factory (Manufacturing) Overhead Costs 651 Variable Overhead Cost Analysis 651 Interpretation and Implications of Variable Overhead Variances 653 Fixed Overhead Cost Analysis 654 Interpretation of Fixed Overhead Variances 658 Alternative Analyses of Overhead Variances 659 Summary of Overhead Variances 661 Supplementing Financial Results with Nonfinancial Performance Indicators 661 Recording Standard Overhead Costs 662 Journal Entries and Variances for Overhead Costs 662 End-of-Period Disposition of Variances 664 Variance Disposition 664 The Effects of Denominator Level Choice on Full Costing Income 666 Standard Costs in Service Organizations 667 Overhead Cost Variances in Traditional ABC Systems 668 ABC-Based Flexible Budgets for Control 668 Flexible Budget Analysis under Traditional ABC When There Is a Standard Batch Size for Production Activity 670 Extension of ABC Analysis: GPK and RCA 671 Investigation of Variances 672 Causes and Controllability 672 Role of Control Charts 673 Summary 673 Variance Investigation under Uncertainty Supplement (Online) 674 Key Terms 674 Comments on Cost Management in Action 675 Self-Study Problem 675 Questions 676 Brief Exercises 677 Exercises 678 Problems 684 Solution to Self-Study Problem 693

Chapter 16 Operational Performance Measurement: Further Analysis of Productivity and Sales 696

The Strategic Role of the Flexible Budget in Analyzing Productivity and Sales 697 Analyzing Productivity 698 *Partial Productivity 701 Total Productivity 706*



Analyzing Sales: Comparison with the Master Budget 707 Sales Volume Variance Partitioned into Sales Quantity and Sales Mix Variances 708 Sales Quantity Variance Partitioned into Market Size and Market Share Variances 710 The Five Steps of Strategic Decision Making for Schmidt Machinery 715 Analyzing Sales: Comparison with Prior Period Results 716 Analysis of Selling Price and Volume Variances 716 Analysis of Mix and Quantity Variances 718 Analysis of Variable Cost Variances 719 Summary 719 Key Terms 720 Comments on Cost Management in Action 720 Self-Study Problems 721 Ouestions 721 **Brief Exercises** 722 Exercises 723 Problems 727 Solutions to Self-Study Problems 734

Chapter 17 The Management and Control of Quality 739

The Strategic Importance of Quality 741 Baldrige Quality Award 741 ISO 9000 and ISO 14000 741 Quality and Profitability: A Conceptual Linkage 741 Accounting's Role in the Management and Control of Quality 742 The Five Steps of Strategic Decision Making: Improving Quality in Pharmaceutical and Medical Product Companies 743 Comprehensive Framework for Managing and Controlling Quality 744 The Meaning of Quality 744 Knowledge of Business Processes 744 Role of the Customer 744 Financial Component 746 Nonfinancial Performance Indicators 746 Feedback Loops 746 Relevant Cost Analysis of Quality-Related Spending and Investments 746 Link to Operations Management and Statistics 746 Breadth of the System 746 Alternative Approaches to Setting Quality-Related Expectations 746 Setting Quality Expectations: A Six Sigma Approach 747 Setting Quality Expectations: Goalpost vs. Absolute Conformance Standards 748 Taguchi Quality Loss Function (QLF) 750 Financial Measures and Cost of Quality 754 Relevant Cost Analysis for Decision Making 754

Cost of Quality (COQ) Reporting 754 COQ Reports 758 Cost of Quality (COQ) and Activity-Based Costing 760 Nonfinancial Quality Indicators 760 Internal Nonfinancial Quality Metrics 760 External (Customer Satisfaction) Quality Metrics 761 Role of Nonfinancial Performance Measures 762 Detecting and Correcting Poor Quality 763 Detecting Poor Quality 763 Taking Corrective Action 765 Lean Manufacturing and Accounting for "Lean" 768 Lean Manufacturing 768 Accounting for Lean 770 The Strategic Role of Lean Accounting 771 Summary 772 Key Terms 773 Comments on Cost Management in Action 773 Self-Study Problems 773 Questions 774 Brief Exercises 775 Exercises 778 Problems 788 Solutions to Self-Study Problems 797

PART FOUR

MANAGEMENT-LEVEL CONTROL 799

Chapter 18 Strategic Performance Measurement: Cost Centers, Profit Centers, and the Balanced Scorecard 800

Performance Measurement and Control 801 Operational Control vs. Management Control 802 Objectives of Management Control 803 Employment Contracts 803 Design of Management Control Systems for Motivation and Evaluation 805 Informal Control Systems 806 Formal Control Systems 807 Strategic Performance Measurement 807 Decentralization 807 Types of Strategic Business Units 808 The Balanced Scorecard 809 Cost Centers 809 Strategic Issues Related to Implementing Cost Centers 810 Implementing Cost Centers in Departments 810 Outsourcing or Consolidating Cost Centers 812 Cost Allocation 813 Revenue Centers 814 Profit Centers 815 Strategic Role of Profit Centers 815 The Contribution Income Statement 816 Variable Costing vs. Full Costing for Evaluating Profit Centers 817



Strategic Performance Measurement and the Balanced Scorecard 820 Implementing the Balanced Scorecard and the Strategy Map for Performance Evaluation 821 Implementing Strategy Using the Balanced Scorecard 822 Management Control in Service Firms and Not-for-Profit Organizations 822 Summary 823 Key Terms 824 Comments on Cost Management in Action 824 Self-Study Problem 825 Ouestions 825 Brief Exercises 826 Exercises 827 Problems 837 Solution to Self-Study Problem 847

Chapter 19 Strategic Performance Measurement: Investment Centers and Transfer Pricing 849

Five Steps in the Evaluation of the Financial Performance of Investment Centers in an Organization 850 Part One: Financial Performance Indicators for Investment Centers 851 Return on Investment 852 Return on Investment Equals Return on Sales Times Asset Turnover (ROI = $ROS \times AT$) 852 Illustration of Short-Term Financial Performance Evaluation Using ROI 853 Return on Investment: Measurement Issues 855 Strategic Issues Regarding the Use of ROI 858 Residual Income 860 Time Period of Analysis: Single vs. Multiperiod Perspective 862 Limitations of Residual Income 862 Economic Value Added 862 *Estimating EVA*[®] 863 Alternative Approaches to Estimating EVA® NOPAT and EVA® Capital 864 Using Average Total Assets 866 Part Two: Transfer Pricing 866 When Is Transfer Pricing Important? 866 Objectives of Transfer Pricing 866 Transfer Pricing Methods 867 Choosing the Right Transfer Pricing Method: The Firmwide Perspective 869 General Transfer Pricing Rule 872 International Issues in Transfer Pricing 872 Income Tax Planning Opportunities: International Transfer Pricing 873 Other International Considerations 874

Advance Pricing Agreements 875 Summary 876 Key Terms 876 Comments on Cost Management in Action 876 Self-Study Problems 877 Questions 877 Brief Exercises 878 Exercises 878 Problems 883 Solutions to Self-Study Problems 893

Chapter 20 Management Compensation, Business Analysis, and Business Valuation 895

Part One: The Strategic Role of Management Compensation 896 Types of Management Compensation 896 Strategic Role and Objectives of Management Compensation 897 Designing Compensation for Existing Strategic Conditions 897 Risk Aversion and Management Compensation 898 Ethical Issues 898 **Objectives of Management Compensation** 898 Bonus Plans 899 Bases for Bonus Compensation 900 Bonus Compensation Pools 901 Bonus Payment Options 902 Tax Planning and Financial Reporting 903 Management Compensation in Service Firms 905 Part Two: Business Analysis and Business Valuation 906 Business Analysis 906 The Balanced Scorecard 906 Financial Ratio Analysis 908 **Business Valuation** 909 The Discounted Cash Flow Method 910 Multiples-Based Valuation 911 Enterprise Value 911 An Illustration of the Five Steps of Strategic Decision Making in the Valuation of a Fashion Retailer 912 Summary 913 Key Terms 914 Comments on Cost Management in Action 914 Self-Study Problems 915 **Ouestions** 915 Brief Exercises 916 Exercises 917 Problems 922 Solutions to Self-Study Problems 931

Glossary 932

Index 943

