SIXTEENTH EDITION

INTRODUCTION TO Management Accounting

Horngren | Sundem | Burgstahler | Schatzberg

SIXTEENTH EDITION

Introduction to MANAGEMENT ACCOUNTING

Charles T. Horngren
Stanford University

Gary L. Sundem
University of Washington – Seattle

David Burgstahler
University of Washington – Seattle

Jeff Schatzberg
University of Arizona

PEARSON

Boston Columbus Indianapolis New York San Francisco Upper Saddle River
Amsterdam Cape Town Dubai London Madrid Milan Munich Paris Montréal Toronto
Delhi Mexico City São Paulo Sydney Hong Kong Seoul Singapore Taipei Tokyo

To our spouses and children,
and to all our students, past and present.

Editor-in-Chief: Donna Battista
Acquisitions Editor: Ellen Geary
Director of Editorial Services: Ashley Santora
Editorial Project Manager: Nicole Sam
Editorial Assistants: Jane Avery and Lauren Zanedis
Director of Marketing: Maggie Moylan Leen
Marketing Manager: Alison Haskins
Marketing Assistant: Kimberly Lovato
Managing Editor, Production: Jeff Holcomb
Sr. Production Project Manager: Roberta Sherman
Manufacturing Buyer: Carol Melville
Sr. Art Director: Anthony Gemmellaro
Cover Design: Anthony Gemmellaro
Interior Design: 511 Design and Anthony Gemmellaro
Cover Photo: Pete Gardner/Photographer's Choice/Getty Images
Media Project Manager, Editorial: James Bateman
Media Project Manager, Production: John Cassar
Full-Service Project Management: GEX Publishing Services
Composition: GEX Publishing Services
Printer/Binder: RR Donnelley Jefferson City
Cover Printer: Lehigh-Phoenix Color/Hagerstown
Text Font: 10/12 Times

Credits and acknowledgments borrowed from other sources and reproduced, with permission, in this textbook appear on appropriate page within text.

Library of Congress Cataloging-in-Publication Data
Horngren, Charles T.
Introduction to management accounting / Charles T. Horngren, Stanford University; Gary L. Sundem, University of Washington - Seattle; David Burgstahler, University of Washington - Seattle; Jeff Schatzberg, University of Arizona. -- Sixteenth edition.
pages cm
Includes index.
ISBN 978-0-13-305878-9 (casebound)
1. Managerial accounting. I. Title.
HF5635.H814 2014
658.15'11--dc23
2012047454

10 9 8 7 6 5 4 3 2 1

PEARSON

ISBN 13: 978-0-13-305878-9
ISBN 10: 0-13-305878-6

About the Authors

Charles T. Horngren was the Edmund W. Littlefield Professor of Accounting, emeritus, at Stanford University. A graduate of Marquette University, he received his MBA from Harvard University and his PhD from the University of Chicago. He also received honorary doctorates from Marquette University and DePaul University.

A certified public accountant, Horngren served on the Accounting Principles Board, the Financial Accounting Standards Board Advisory Council, and the Council of the American Institute of Certified Public Accountants and served as a trustee of the Financial Accounting Foundation, which oversees the Financial Accounting Standards Board and the Government Accounting Standards Board. He is a member of the Accounting Hall of Fame.

Horngren served the American Accounting Association as its president and as director of research. He received the association's first annual Outstanding Accounting Educator Award. He also received its Lifetime Contribution to Management Accounting Award.

The California Certified Public Accountants Foundation gave Horngren its Faculty Excellence Award and its Distinguished Professor Award. He is the first person to have received both awards. The American Institute of Certified Public Accountants presented him with its first Outstanding Educator Award. He was also named Accountant of the Year, Education, by the national professional accounting fraternity, Beta Alpha Psi.

Professor Horngren was a member of the Institute of Management Accountants, where he received its Distinguished Service Award. He was a member of the Institute's Board of Regents, which administers the Certified Management Accountant examinations.

Horngren authored several other accounting books published by Prentice Hall: *Cost Accounting: A Managerial Emphasis*, *Introduction to Financial Accounting*, *Accounting*, and *Financial Accounting*. He was also the Consulting Editor for the Charles T. Horngren Series in Accounting.

Gary L. Sundem is professor of accounting emeritus at the University of Washington, Seattle. He received his BA from Carleton College and his MBA and PhD from Stanford University.

Professor Sundem has served as President of the American Accounting Association, Executive Director of the Accounting Education Change Commission, and Editor of *The Accounting Review*. He is currently president of the International Association for Accounting Education and Research.

Sundem is a past president of the Seattle chapter of the IMA (formerly the Institute of Management Accountants). He has served on IMA's national board of directors and chaired its Academic Relations and Professional Development committees. He has chaired the AACSB's Accounting Accreditation Committee He currently serves on the Board of Trustees of Rainier Mutual Funds and the Board of Trustees of Carleton College, where he chairs the audit committee. He received the Carleton College Outstanding Alumni award in 2002.

Professor Sundem has numerous publications in accounting and finance journals including *Issues in Accounting Education*, *The Accounting Review*, *Journal of Accounting Research*, and *Journal of Finance*. He was selected as the Outstanding Accounting Educator by the American Accounting Association in 1998 and by the Washington Society of CPAs in 1987.

David Burgstahler is the Julius A. Roller Professor of Accounting at the University of Washington, Seattle. He received his BA degree from the University of Minnesota–Duluth, and his PhD from the University of Iowa. He has been associate dean for masters programs and executive education and acting dean at the University of Washington Business School. He has served on more than 40 PhD supervisory committees and has been recognized multiple times as Beta Alpha Psi Professor of the Year and as MBA Professor of the Quarter at the University of Washington.

Professor Burgstahler was 2007–2009 vice president of publications of the American Accounting Association and has served on a number of Association committees.

Professor Burgstahler received the American Accounting Association's American Institute of Certified Public Accountants Notable Contributions to Accounting Literature Award in 2002. He has numerous publications in journals including *The Accounting Review*, *Journal of Management Accounting Research*, *Journal of Accounting Research*, *Journal of Accounting and Economics*, *Contemporary Accounting Research*, *Auditing: A Journal of Practice and Theory*, *Behavioral Research in Accounting*, and *The CPA Journal*.

Jeff Schatzberg is the Vice-Dean and Eller Professor of Accounting in the Eller College of Management at the University of Arizona. Professor Schatzberg received his BA (in philosophy), MA (in accounting), and PhD (in business administration), all at the University of Iowa. Professor Schatzberg has numerous publications in the most prestigious accounting and business journals, including the *Journal of Accounting Research*, *The Accounting Review, Contemporary Accounting Research*, *Auditing: A Journal of Practice and Theory, Journal of Management Accounting Research,* and *Issues in Accounting Education*. His teaching and research interests are in managerial accounting and auditing. He has given numerous seminars at several U.S. universities and international schools in Canada, England, Wales, Norway, France, Germany, and Switzerland. Schatzberg has also served on the editorial board of several scholarly accounting journals.

Professor Schatzberg has been teaching undergraduate, graduate, and MBA managerial accounting courses at the University of Arizona for the past 26 years. He has extensive experience in executive education worldwide (e.g., United States, China, Korea, Taiwan, Mexico, and Peru), has developed customized managerial accounting programs and performed consulting for numerous companies (e.g., Raytheon, Honeywell, Microsoft, and Intel), and has taught executives from many multinational firms (e.g., IBM, Motorola, LG, BenQ, Acer, and Mattel). Professor Schatzberg has received the MBA Faculty of the Year Award from the Eller Graduate School of Business at the University of Arizona on seven occasions and is the recipient of the Arizona Society of CPA's Excellence in Teaching Award. He is a CPA and worked for several years as an auditor and tax accountant in the Phoenix office of KPMG Peat Marwick. His work experience includes both manufacturing and service industry firms, as well as not-for-profit institutions.

Brief Contents

This page intentionally left blank

Contents

Preface

Now more than ever, managers have to understand how their decisions affect costs.

Management accounting is an essential tool that enhances a manager's ability to make effective economic decisions. Because understanding concepts is more important than memorizing techniques, *Introduction to Management Accounting*, 16th edition, describes both theory and practice so students understand how to produce and apply information that's useful in day-to-day decision making. From the first chapter, we encourage students to think about the advantages and disadvantages of various techniques, not to simply memorize and apply the techniques.

Introduction to Management Accounting, 16th edition, deals with all business sectors—nonprofit, retail, wholesale, service, selling, and administrative situations—as well as manufacturing. The focus is on planning and control decisions, not on product costing for inventory valuation and income determination.

Our Philosophy

Introduce concepts and principles early, then revisit them at more complex levels as students gain understanding, and provide appropriate real-company examples at every stage.

In management accounting courses students learn how managers use accounting information to help make better business decisions. They begin their understanding of managerial decisions by asking, "How will my decisions affect the costs and revenues of the organization?" Students then progress to more complex questions: "What is the most appropriate cost-management system for the company?" "What products or services should we emphasize?" "What do our budget variances mean?" Introduction to Management Accounting presents the most basic cost concepts in chapters 1–6 and adds more complex analyses that build on these concepts in the remaining chapters.

Our goals are to choose relevant subject matter and to present it clearly and accessibly, using many examples drawn from actual companies. Examples from companies, such as Starbucks, Boeing, AT&T, McDonald's, Microsoft, and more, help students understand management accounting concepts in a real-company context.

Introduction to Financial Accounting, 11th edition, and *Introduction to Management Accounting*, 16th edition, together provide a seamless presentation for any first-year accounting course. Please contact your Pearson representative about cost-saving discounts when adopting both books.

New Edition Enhancements and Updates

The authors have made changes to both update the topic coverage and to add clarity to the discussion of various topics. Some noteworthy changes include the following:

- **New and revised "Business First" boxes** provide insights into operations at well-known organizations, including Microsoft, General Electric, Southwest Airlines, Harley-Davidson, Nortel Networks, and Harvard University.
- **New and revised chapter-opening vignettes** help students understand accounting's role in current business practice. We revisit the chapter-opening company throughout the chapter so that students can see how accounting influences managers in real companies. Students will recognize many of the companies, such as Starbucks, Boeing, US Airways, McDonald's, Nike, and Dell.
- **A problem** in each chapter based on Nike's SEC Form 10-K. These problems illustrate how publicly available information can lead to insights about a company, its costs, and its management decisions.

- **Increased coverage of ethics**, including an ethics problem in each chapter's assignment material.
- **End-of-chapter material** includes new and significantly revised exercises and problems to provide fresh, new examples.

Chapter-Specific Updates

Chapter 1 emphasizes the importance of accounting information for decision makers and the role of accounting systems in control. The chapter continues to emphasize the importance of ethics in business, with a section devoted to "Ethical Conduct for Professional Accountants." We shortened the discussion of entry-level careers in accounting and expanded the discussion of trends in management accounting.

Chapter 2 is a major update in the 16th edition. The discussion of mixed-cost and step-cost behavior has been moved up to this chapter, immediately following the discussion of fixed- and variable-cost behavior. Also, degree of operating leverage is defined and illustrated with an example.

Chapter 3 has been reorganized and provides a more focused discussion of cost behavior and cost estimation, as well as an enhanced examination of regression analysis.

Chapter 4 uses Dell as the primary example throughout the chapter, and in this edition we discuss Dell's strategic decision to shift their product mix away from consumer sales and toward enterprise solutions and services. We describe how cost management systems at Dell support strategic decisions as well as operational control. The discussion of cost categories and cost terminology has been rewritten and refined.

In **Chapter 5** we enhanced the pricing focus of the chapter, and further refined our discussion of the accounting formats that aid in such decision making, namely the absorption versus contribution margin approaches. We compare and contrast these two approaches throughout the chapter.

Chapter 6 has been edited to enhance operating decisions and the incremental analysis framework. The decision-making focus was further emphasized and related examples and problems were revised and updated.

Chapter 7 emphasizes the importance of budgets for both planning and control. The second half of the chapter illustrates the details of preparing a budget using the Cooking Hut example used in previous editions.

Chapter 8 has been reorganized to develop variance concepts in smaller steps. Basic variance concepts and terminology are introduced at the beginning of the chapter. The example introduced at the beginning of the chapter is first used to illustrate the static-budget variances for income. Then the static-budget variance is analyzed as the sum of activity-level and flexible-budget variances. Then, income variances are analyzed as more detailed revenue and cost variances. Finally, flexible-budget variances are divided into price and quantity variances (for materials and labor) or spending and efficiency variances (for variable overhead).

Chapter 9 includes multiple examples of performance evaluation and incentive issues for service organizations such as health-care organizations and hotels. We use the balance scorecard as an integrated framework to consider both financial and nonfinancial performance measures. The penultimate section of the chapter outlines issues of designing and implementing management control systems for service and nonprofit organizations.

In **Chapter 10**, learning objectives 4 and 5 have been revised, where objective 5 now focuses on the incentives created by alternative performance measures. We also revised the discussion of alternative measures of performance and profitability.

Chapter 11 includes a detailed, step-by-step example of calculation of net present value (NPV). The discussion of the internal rate of return formulation and its relation to the NPV formulation has also been expanded, though the chapter continues to primarily focus on the NPV model. The discussion of tax effects has also been further clarified.

Chapter 12 includes extensive revisions for clarity throughout the chapter. The general guidelines for allocating service department costs have been revised and condensed and the section showing how to apply the guidelines has been reorganized. The steps in ABC cost allocation were reduced from 4 to 3 and their description extensively revised. Finally, the discussion of which department to allocate first in step-down allocations moved from a footnote to the text.

Chapter 13 includes an enhanced discussion of overhead cost allocation and disposition of overhead variances. The complex discussion of variances was clarified as were the related problems and examples.

Chapter 14 has been revised to clarify the discussion throughout the chapter, especially regarding job-order costing and process costing. These two systems are explained in more detail and are compared and contrasted in a more meaningful way.

Chapter 15 includes updates to the General Mills examples throughout the chapters as well as to the Business First box on corporate citizenship awards. Revisions for clarity include an expanded discussion of accrued revenues and accrued expenses, a major revision of the presentation of the first 7 transactions of King Hardware, an added balance sheet after transaction 2 to show how a balance sheet changes with each transaction, and a revision of the section on nonprofit organizations.

In **Chapter 16**, in addition to updating the Nike examples throughout, there is a revised discussion of goodwill, an expanded coverage of diluted EPS, and coverage of the FASB/IASB proposal that would mandate the direct method for the cash flow statement.

Chapter 17 includes a new learning objective on using financial statement analysis, a new section showing how income statements and balance sheets show noncontrolling interests, and a new line in all consolidation tables to clarify the totals before eliminating entries. Finally, we have updated all financial statement references throughout.

Supplements for Instructors and Students

INSTRUCTOR'S RESOURCE MANUAL Substantially revised, this resource manual provides insightful and useful tips on how to best manage course content when using *Introduction to Management Accounting*, 16th edition, in class. Chapter-by-chapter explanations and pedagogical philosophies are clearly delineated and oriented to greatly aid the teaching process.

SOLUTIONS MANUAL Comprehensive solutions, prepared by the authors, are provided for all end-of-chapter material. The Solutions Manual includes a listing of problems covering each learning objective, sample assignment schedules, a linking of 15th edition problems to those in this edition, comments on choices of problems in each chapter, and key amounts from suggested solutions to selected problems.

TEST ITEM FILE This is a ready-to-use bank of testing material that contains, for each chapter, a variety of types of questions, including true/false, multiple-choice, and critical thinking problems. For ease of use, each question is linked to chapter objectives and also provides a suggested difficulty level and references to text pages where answers can be found.

TESTGEN This testing software is designed to aid in creating custom tests in minutes. Features include question randomization, a point-and-drag interface, and extensive customizable settings.

POWERPOINT PRESENTATION Complete PowerPoint presentations are provided for each chapter. Instructors may download and use each presentation as is or customize the slides. Each presentation allows instructors to offer an interactive presentation using colorful graphics, outlines of chapter material, and graphical explanations of difficult topics. This is available online at http://www.pearsonhighered.com/horngren.

COURSE WEB SITE AT HTTP://WWW.PEARSONHIGHERED.COM/HORNGREN This complete online resource offers a variety of Internet-based teaching and learning support. It provides a wealth of resources for students and faculty, including Excel spreadsheet templates.

MyAccountingLab MyAccountingLab provides students with a personalized interactive learning environment where they can learn at their own pace and measure their progress.

HALLMARK FEATURES

- **Personalized help** is available on MyAccountingLab whenever students need it with the interactive "Help Me Solve This" tool. This tool automatically generates algorithmic versions of a particular problem and provides step-by-step assistance until the solution is obtained.
- **Dynamic learning resources** found in MyAccountingLab cater to students' individual learning styles. All Learning Aids can be turned off by the instructor.
- **A personalized Study Plan**, for self-paced learning, links students directly to MyAccountingLab's interactive tutorial exercises on the topics they have yet to master.

NEW FEATURES FOR 2012

- **Excel Integration**. MyAccountingLab now allows students to work through end-of-chapter or quiz problems in an Excel simulated environment. Their work is then automatically scored and reported to the MyAccountingLab Gradebook.
- **Open-response Questions**.

Acknowledgments

We have received ideas, assistance, miscellaneous critiques, and assorted assignment material in conversations with and by mail from many students, professors, and business leaders. Each has our gratitude, but the list is too long to enumerate here. We wish to thank the following reviewers whose feedback was helpful in this and previous editions:

Jim Carroll, Georgian Court University
James Chiafery, University of Massachusetts Boston
Constance J. Crawford, MBA, CPA, Ramapo College of New Jersey
William Creel, Herzing College
Stan Davis, Indiana University – Purdue University Fort Wayne
Chris Gilbert, Glendale Community College
Valerie Goodwin, Olean Business Institute
Lawrence Grasso, Central Connecticut State University
Henry Huang, Butler University
Agatha Jeffers, Montclair State University
Cody King, Georgia Southwestern State University
Roman J. Klusas, University of Indianapolis
Chuo-Hsuan (Jason) Lee, Plattsburgh State University of New York
Lisa Martin, Hampton College
Maureen Mascha, Marquette University
Jerold R. Miller, Chaparral College
David Mona, Champlain College
Julian Mooney, Georgia Southern University
Behnaz Quigley, Marymount University
Bill Rankin, Colorado State University
Patrick Rogan, Cosumnes River College
Walter Smith, Siena College
Ken Snow, Kaplan University & Florida Community College at Jacksonville
John Stancil, Florida Southern College
Vic Stanton, Stanford Graduate School of Business
Holly Sudano, Florida State University
Diane Tanner, University of North Florida
Geoffrey Tickell, Indiana University of Pennsylvania
Michael Tyler, Barry University
Karen Wisniewski, County College of Morris

Students in our classes have provided invaluable feedback on previous editions, for which we are grateful.

Many people at Pearson also earn our deepest thanks for their thoughtful contributions, including Stephanie Wall, Ellen Geary, Nicole Sam, Jane Avery, Lauren Zanedis, Roberta Sherman, Anthony Gemmellaro, James Bateman, and Carol Melville.

Finally, the authors greatly appreciate the contributions that Bill Stratton made to the development of the book over many years.

Charles T. Horngren
Gary L. Sundem
David Burgstahler
Jeff Schatzberg

Introduction to

Management Accounting

CHAPTER

1

Managerial Accounting, the Business Organization, and Professional Ethics

LEARNING OBJECTIVES

When you have finished studying this chapter, you should be able to:

1. Explain why accounting is essential for decision makers and managers.
2. Describe the major users and uses of accounting information.
3. Explain the role of budgets and performance reports in planning and control.
4. Describe the cost-benefit and behavioral issues involved in designing an accounting system.
5. Discuss the role accountants play in the company's value-chain functions.
6. Identify current trends in management accounting.
7. Explain why ethics and standards of ethical conduct are important to accountants.

▸ STARBUCKS

If you had asked most people a decade or two ago whether consumers around the world would pay a premium price for a "better" cup of coffee, few would have answered yes. Nevertheless, the expansion of **Starbucks** since its founding in 1971 in Seattle's Pike Place Market has been nothing short of phenomenal. In 2011, Starbucks' total revenues—the amount the company received for all items sold—were $11.7 billion, compared with only $700 million in 1996. Net income—the profit that Starbucks made—was $1.7 billion, up from only $42 million in 1996. Total assets—the recorded value of the items owned by Starbucks—grew from less than $900 million in 1996 to more than $7.3 billion in 2011. These numbers are accounting measures of the cumulative success of numerous managers of Starbucks stores in many countries. Managers use these figures, along with more detailed accounting numbers, to make day-to-day decisions and to measure performance.

Starbucks has established a worldwide reputation to match its financial success. Interbrand ranked Starbucks among the 100 best global brands for 2011. Starbucks ranked seventy-third on *Fortune* magazine's "100 Best Companies to Work For." *Corporate Responsibility* magazine placed it thirty-ninth in its list of "100 Best Corporate Citizens." Finally, in 2011 *Fortune* named Starbucks the sixteenth most admired company in the world and named founder and CEO Howard Schultz the businessperson of the year.

How did Starbucks accomplish all this? As we embark on our journey into the world of management accounting, we will explore what it takes for a company such as Starbucks to ensure that when Mei-Hwa Zhang walks into a Starbucks in Beijing, she has much the same quality experience as Mohammad Kumar does in a Starbucks in Kuwait or Franz Mueller does in Zurich. All Starbucks' managers, from baristas to store managers to the chief executive officer, use accounting reports to assess how well their units meet corporate goals and objectives. Accounting provides a common language to help managers around the world communicate and coordinate their actions. By the time you finish reading this book, you will be comfortable with the language of accounting. You will know why it is necessary to understand accounting information in order to use it wisely in your decisions. You will also understand the role of performance evaluation systems in communicating strategy and coordinating actions throughout an organization.

Managerial accounting information is used in all sorts of decisions. For example, consider decisions you might face as a manager in the following situations:

Starbucks' coffee shops have strategic locations throughout the world, including this one in Beijing.

- Suppose you are a **Boeing** engineer preparing manufacturing specifications for a component of its new 787 Dreamliner airplane. There are three possible ways to organize the assembly of the component. Which is the most cost-effective approach?
- Suppose you are a product manager at **General Mills** and you are designing a new marketing plan for Cheerios. Market research predicts that distributing free samples in the mail will increase annual sales by 4%. Will profits from the added sales be more than the cost of producing and distributing the free samples?
- **Bank of America** offers free checking to customers with no minimum balance requirement in their MyAccess™ checking account. How much does it cost the bank to provide this free service?
- Kitsap County Special Olympics holds a series of athletic events for disabled youth. As executive director, you must set a goal for the group's annual fund drive based on the estimated cost to support its planned activities.
- Madison Park Cafe currently is open only for dinner, but the owner is considering opening for lunch. The average lunch is priced at about $15, and the café expects to serve about 40 lunches per day. Can the chef produce a luncheon menu that meets the café's quality standards at an average cost that yields a reasonable profit?
- **Amazon.com** offers free 2-day shipping on all orders for subscribers that pay a single $79 annual fee. Does the fee plus the profits from increased sales to subscribers exceed the cost of providing free shipping?

For all these decisions, managers rely on managerial accounting information.

In this chapter, we provide an overview of management accounting in all types of organizations. Larry White, former chair of the **Institute of Management Accountants (IMA),** the largest U.S. professional organization focused on internal accounting, sums up the role of management accounting as follows: "Management accountants are committed to helping their organization achieve its strategic goals by providing decision support, planning, and control for business operations with a high level of ethics and professional competence." ■

Institute of Management Accountants (IMA)
The largest U.S. professional organization of accountants focused on internal accounting.

management accounting
The branch of accounting that produces information for managers within an organization. It is the process of identifying, measuring, accumulating, analyzing, preparing, interpreting, and communicating information that helps managers fulfill organizational objectives.

Management Accounting and Your Career

Objective 1

Explain why accounting is essential for decision makers and managers.

In this book we focus on **management accounting**, which is the process of identifying, measuring, accumulating, analyzing, preparing, interpreting, and communicating information that helps managers fulfill organizational objectives. In contrast, **financial accounting** produces information for external parties, such as stockholders, suppliers, banks, and government regulatory agencies. Exhibit 1-1 summarizes the major differences between management accounting and financial accounting.

This book is written primarily for managers who are not accounting specialists. All managers use information from accounting systems. By learning about accounting systems, you will better understand the relationships among different components of an organization. You also learn why it is essential to understand the system that generates accounting information in order to use that information in any of a wide variety of functional decisions (including purchasing, manufacturing, inventory management, hiring, marketing, and pricing, among others). You will learn to evaluate whether your accounting system is providing the information you need for your decisions. You will learn to evaluate performance measures generated by your accounting system and assess whether the performance measures create appropriate incentives. In sum, a thorough understanding of accounting is essential for managers in any organization.

financial accounting
The branch of accounting that develops information for external decision makers, such as stockholders, suppliers, banks, and government regulatory agencies.

When accounting is mentioned, most people think first of financial accounting. Independent auditors—**certified public accountants (CPAs)** in the United States and **chartered accountants (CAs)** in many other nations—provide assurance to external users about the reliability of companies'

certified public accountant (CPA)
In the United States, independent accountants who assure the reliability of companies' published financial statements.

	Management Accounting	Financial Accounting
Primary users	Organization managers at various levels	Outside parties such as investors and government agencies but also organization managers
Freedom of choice of accounting measures	No constraints other than requiring the benefits of improved management decisions to exceed information costs	Constrained by generally accepted accounting principles (GAAP)
Behavioral implications in selecting accounting measures	Choice should consider how measurements and reports will influence managers' daily behavior	Choice based on how to measure and communicate economic phenomena; behavioral considerations are secondary, although executive compensation based on reported results may have behavioral impacts
Time focus of reports	Future orientation: formal use of budgets as well as historical records. Example: 20X2 budget versus 20X2 actual performance	Past orientation: historical evaluation; example: 20X2 actual performance versus 20X1 actual performance
Time span of reports	Flexible, varying from hourly to 10–15 years	Less flexible; usually one year or one quarter
Types of reports	Detailed reports include details about products, departments, territories, etc.	Summary reports: primarily report on the entity as a whole
Influence of other functional areas	Field is less sharply defined; heavier use of economics, decision sciences, and behavioral sciences	Field is more sharply defined; lighter use of related disciplines

Exhibit 1-1
Distinctions Between Management Accounting and Financial Accounting

chartered accountant (CA)
In many countries, the equivalent to the CPA in the United States—independent accountants who assure the reliability of companies' financial statements.

certified management accountant (CMA)
The management accountant's counterpart to the CPA.

published financial statements. Another, even larger, group of people work in private industry and government as management accounting specialists. Though management accountants often help to produce financial statements for external users, they primarily produce accounting information for internal users. The **certified management accountant (CMA)** designation is the management accountant's counterpart to the CPA. The Institute of Management Accountants (IMA) oversees the CMA program. CMAs must pass an examination covering (1) financial planning, performance, and control, and (2) financial decision making.[1] Like the CPA designation, the CMA confers status and often opens the door to higher-level positions. A survey by *Financial Executive* magazine showed that 33% of CEOs in companies with revenues greater than $500 million had risen through the finance/accounting ranks, compared with 26% from operations and 21% from sales and marketing.

Roles of Accounting Information

Objective 2

Describe the major users and uses of accounting information.

One basic purpose of accounting information is to help you make decisions. Every day, you and your organization face a new and continually changing set of decisions, and many of these decisions rely on accounting information. When you understand how your decisions affect costs and revenues, you will be a better decision maker.

A second basic purpose of accounting is to help you plan and control your organization's operations. Plans describe how the organization will achieve its objectives. Control is the process of implementing plans and evaluating whether your organization is achieving its objectives. When you understand how people respond to the incentives created by performance evaluation and control systems, you will be better able to assess which system creates the most appropriate incentives.

[1]For information about the IMA and the CMA exam, see www.imanet.org.

Organizations address these two purposes by designing and implementing **accounting systems**, which are formal mechanisms for gathering, organizing, and communication information about an organization's activities. The organization of this book reflects how accounting systems address these two basic purposes. Part 1, Chapters 2 through 6, focuses on the decision-making purpose of accounting information. These chapters help you determine what costs are relevant for different decisions and how accounting systems generate relevant costs for managers, demonstrating a key concept in management accounting: "Different costs for different purposes." Part 2, Chapters 7 through 10, deals with planning and control systems. These chapters show how measuring performance affects managers' incentives, leading to a second key concept: "You get what you measure." Parts 3 and 4 explore these concepts in still more depth, as Part 3, Chapter 11, focuses on relevant costs for long-term capital investment decisions and Part 4, Chapters 12 through 14, describes systems to generate detailed product costing information.

accounting system
A formal mechanism for gathering, organizing, and communicating information about an organization's activities.

As you progress in your study of management accounting and in your career, you move from understanding how to use information from existing accounting systems to creating systems that produce information useful to your particular decisions. Early in your studies, you initially react to the systems that are described to you, making sure that you understand how each system works and how to use the information it produces in your decisions. Early in your career, you may have little opportunity to influence the management accounting system, and your initial goal is simply to understand and use the information from the accounting system. As you advance in your studies, you learn about increasingly complex systems designed to provide information for a variety of purposes. As you learn about specific alternatives, you also develop the ability to design new alternatives that provide better information for your decision-making and performance evaluation purposes. Finally, you develop the proficiency and understanding required to evaluate the relative advantages of alternative accounting systems. You will likely see a parallel progression in the use of management accounting in your career. As you advance, you are able to suggest changes to improve the existing systems, and eventually you may be in a position to influence the systems implemented by your organization. The more you can influence management accounting systems, the more important it is to understand their role.

Information for Decision Making and Planning and Control

What types of accounting information do managers need for decision making and performance evaluation and control? For **decision making**—choosing among alternative courses of action to achieve some objective—accounting information helps answer problem-solving questions. For performance evaluation and control, accounting helps answer scorecard and attention-directing questions:

decision making
Choosing among alternative courses of action designed to achieve some objective.

1. Scorecard questions: Is the company doing well or poorly? **Scorekeeping** is the accumulation, classification, and reporting of data that help users understand and evaluate organizational performance. Scorekeeping information must be accurate and reliable to be useful. For example, Starbucks produces numerous reports to evaluate results for stores and divisions.
2. Attention-directing questions: Which areas require additional investigation? **Attention directing** involves reporting and interpreting information that helps managers to focus on operating problems, imperfections, inefficiencies, and opportunities. For example, a manager who sees that a Starbucks store has reported profits of $120,000 when budgeted profit was $150,000 will look for explanations as to why the store did not achieve its budget.
3. Problem-solving questions: Of the alternatives being considered, which is the best? The **problem-solving** aspect of accounting involves analysis of alternative courses of action and identification of the best course to follow. For example, Starbucks experiments with adding various items to its menu. After an analysis of how a new product will affect revenues and costs, management decides which items to add and which to delete.

scorekeeping
The accumulation, classification, and reporting of data that help users understand and evaluate performance.

attention directing
Reporting and interpreting information that helps managers to focus on operating problems, imperfections, inefficiencies, and opportunities.

problem solving
Analysis of possible courses of action and identification of the best course to follow.

The scorecard and attention-directing uses of information are closely related. The same information that helps a manager understand and evaluate performance may also serve an attention-directing function for the manager's superior. For example, by pinpointing where actual results differ from plans, performance reports show managers how they are doing and where to take action. Companies produce most scorecard and attention-directing information on a routine basis every day, month, quarter, or year.

In contrast, specific decisions often require problem-solving information beyond the information routinely generated for scorekeeping and attention directing. When organizations make decisions (such as how to price products and special orders, whether to make or to buy components, whether to add or drop a product, how to adjust product mix, or whether to keep or replace equipment), specially-prepared information is often required. For example, Starbucks uses problem-solving information when deciding whether to run ads during the Super Bowl™ broadcast.

Decision making is the core of the management process. Decisions range from the routine (setting daily production schedules) to the non-routine (launching a new product line), and accountants are information specialists who aid the decision makers. Managers use accounting information for all types of decisions. Accountants must make sure that they produce information that is useful for these decisions and managers must work with accountants to get the information that is needed.

Making Managerial Decisions

What type of information—scorekeeping, attention-directing, or problem-solving—would managers use for each of the following decisions? Why?

1. Deciding whether to replace a traditional assembly line with a fully automated robotic process
2. Evaluating the performance of a division for the preceding year
3. Identifying which products exceeded their budgeted profitability and which ones fell short of their budgets

Answers

1. Problem-solving. This is a one-time decision for which managers need information about the potential impacts of each of the alternatives under consideration.
2. Scorekeeping. This is a routine evaluation of an organizational unit for which managers want systematic data on a regular basis.
3. Attention-directing. To identify products that need attention, managers want information that highlights deviations of actual results from pre-specified expectations in the budget.

planning
Setting objectives for an organization and determining how to attain them.

control
Implementing plans and using feedback to evaluate the attainment of objectives.

Another essential element of the management process is planning and controlling the organization's operations. **Planning** provides the answers to two questions: What objectives does the organization want to achieve? When and how will the organization achieve these objectives? **Control** refers to implementing plans and using feedback to evaluate the attainment of objectives. Thus, feedback is crucial to the cycle of planning and control. Planning determines action, action generates feedback, and the control phase uses this feedback to influence further planning and actions. Timely, systematic reports provided by the accounting system are a primary source of useful feedback.

The left side of Exhibit 1-2 demonstrates the planning and control cycle of current operations that could be used by a particular Starbucks store. The planning section in Exhibit 1-2 shows an objective for the store (increase profitability) and how it will be attained (product growth and improved marketing). The control section shows the actions that are intended to increase profitability and how Starbucks will evaluate the actions. The Starbucks store will implement its plan to expand the number of drinks on its menu and increase advertising. Management will evaluate these actions based on three performance measures, the increase in drinks sold, increase in advertising expenditures, and the increase in revenue. Managers will then use the performance evaluation results for further planning and implementation.

Management by Exception

Objective 3

Explain the role of budgets and performance reports in planning and control.

The right side of Exhibit 1-2 shows that the accounting system formalizes plans by expressing them as budgets. A **budget** is a quantitative expression of a plan of action and an aid to coordinating and implementing plans. Budgets are the chief devices for disciplining management planning. Without budgets, planning may not get the front-and-center focus that it deserves. The Starbucks store expresses its plan for product growth and improved marketing through revenue and advertising budgets.

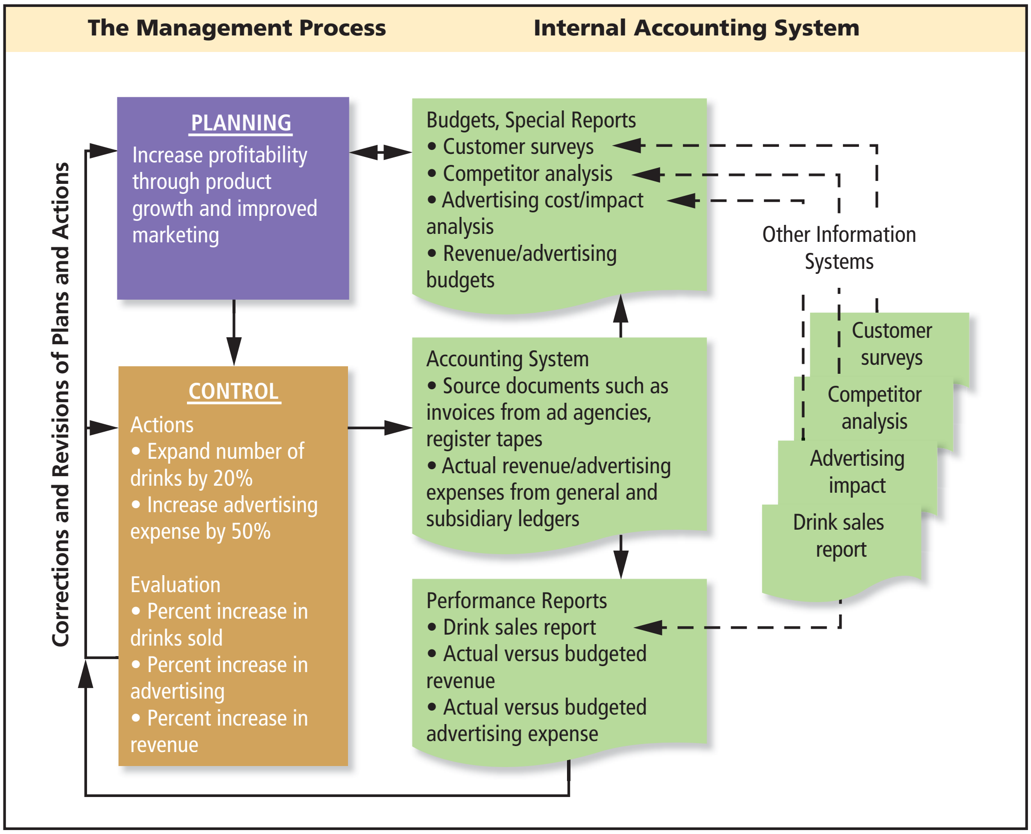

Exhibit 1-2
Starbucks Store—Accounting Framework for Planning and Control

The accounting system records, measures, and classifies actions to produce performance reports (the last box in Exhibit 1-2). **Performance reports** provide feedback by comparing results with plans and by highlighting **variances**, which are deviations from plans. Organizations use performance reports to judge managers' decisions and the productivity of organizational units. Performance reports compare actual results to budgets, thereby motivating managers to achieve the objectives. For example, managers of the Starbucks store evaluate the effectiveness of its advertising plan by comparing the increase in revenue and profits to the increase in advertising costs. Based on their evaluation, managers at Starbucks make corrections and revisions to their plans.

budget
A quantitative expression of a plan of action and an aid to coordinating and implementing the plan.

performance reports
Feedback provided by comparing results with plans and by highlighting variances.

variances
Deviations from plans.

Exhibit 1-3 shows a simple performance report for a hypothetical Starbucks store, the Mayfair Starbucks. The first column of Exhibit 1-3 is the budget for March 20X1. It is based on a predicted level of sales and the estimated costs needed to support that level of sales. After managers and their superiors agree on a budget, it becomes the managers' target for the month. As the store sells its products and incurs costs, Starbucks' accounting system collects the revenue and cost information. At the end of each month (or more often if managers need more frequent feedback), the accounting department prepares a store-level performance report, such as the one in Exhibit 1-3. Managers use the performance report to help evaluate the store's operations.

The Mayfair store report shows that the store met its targeted sales, but the $2,500 unfavorable variance for ingredients shows that these costs were $2,500 over budget. Other variances show that store labor costs were $400 under budget and other labor was $50 over budget. At the Mayfair store, management would undoubtedly focus attention on ingredients, which had by far the largest unfavorable variance. However, it may also be worthwhile to investigate the $400 favorable labor variance. By investigating favorable variances, managers may find better ways of doing things.

Performance reports spur investigation of exceptions—items for which actual amounts differ significantly from budgeted amounts. Managers then revise operations to conform with the plans or revise the plans. This process is **management by exception**, which means concentrating more on areas that deviate from the plan and less on areas that conform with plans. Thus, the management-by-exception approach frees managers from needless concern with those phases of operations that adhere to plans and are running smoothly. However, well-conceived plans incorporate enough discretion or flexibility so that the manager feels free to pursue any unforeseen opportunities.

management by exception
Concentrating more on areas that deviate from the plan and less on areas that conform with plans and are presumed to be running smoothly.

	Budget	Actual	Variance
Sales	$50,000	$50,000	$ 0
Less:			
Ingredients	$22,000	$24,500	$2,500 U
Store labor (baristas, etc.)	12,000	11,600	400 F
Other labor (managers, supervisors)	6,000	6,050	50 U
Utilities, maintenance, etc.	4,500	4,500	0
Total expenses	$44,500	$46,650	$2,150 U
Total operating income	$ 5,500	$ 3,350	$2,150 U

U = unfavorable—actual cost greater than budgeted; actual revenue or profit less than budgeted
F = favorable—actual cost less than budgeted; actual revenue or profit greater than budgeted

Exhibit 1-3
Mayfair Starbucks Store—Performance Report for the Month Ended March 31, 20X1

Notice that although budgets aid planning and performance reports aid control, it is not accountants but operating managers and their subordinates who use accounting reports to plan and control operations. Accounting assists the managerial planning and control functions by providing prompt measurements of actions and by systematically pinpointing trouble spots.

Influences on Accounting Systems

Accounting systems vary across organizations—systems must meet the needs of each particular organization. In order to reduce costs and complexity, many organizations use a general-purpose accounting system that attempts to meet the needs of both external and internal users. However, as outlined in Exhibit 1-1, there are important differences between management accounting information and financial accounting information. Systems developed primarily for external reporting may not produce the most useful information for managers.

There are three categories of requirements imposed on accounting systems designed to meet the requirements of external users. First, public companies' financial reports for external users must adhere to a set of standards known as **generally accepted accounting principles (GAAP)** as determined by the Financial Accounting Standards Board (FASB) in the United States and the International Accounting Standards Board (IASB) in most of the rest of the world. Second, every company is also subject to various taxes, and therefore subject to various reporting requirements specified by tax rules and regulations. Third, many companies are subject to other government regulations.

There are many other governmental regulations that influence accounting systems. For example, in 2002 the **Sarbanes-Oxley Act** added several levels of regulation in the United States. Driven by corporate bankruptcies blamed in part on accounting lapses (as well as deficiencies in corporate governance, lax securities regulation, and executive greed), the act requires more top-management oversight of a company's accounting policies and procedures. By requiring chief executive officers to sign a statement certifying the accuracy of the company's financial statements, the act makes accounting numbers the concern of all managers, not just the accountants. Sarbanes-Oxley requires external auditors to examine and prepare a separate report on a company's system of **internal controls**—policies to protect and make the most efficient use of an organization's assets.

Another example of broad regulation is the **Foreign Corrupt Practices Act**, a U.S. law forbidding bribery and other corrupt practices but also requiring companies to maintain reasonably detailed accounting records and to have an appropriate system of internal controls. The word *Foreign* in the title is somewhat misleading because the act's provisions apply to all publicly held companies, even if they do not conduct business outside the United States. This law requires that companies maintain their accounting records in reasonable detail and accuracy. Most companies have **internal auditors** who review and evaluate accounting systems, including companies' internal controls, and conduct **management audits**—reviews to determine whether managers are implementing the policies and procedures specified by top management. A final specific area of regulation is government contracting. Universities, defense contractors, and others contracting with the U.S. government must comply with numerous reporting requirements.

The requirements of external reporting should not take precedence over the scorekeeping, attention-directing, and problem-solving information that is generated to meet the needs of

generally accepted accounting principles (GAAP)
A set of standards to which public companies' published financial statements must adhere.

Sarbanes-Oxley Act
A 2002 law that requires top-management oversight of a company's accounting policies and procedures.

internal controls
Policies to protect and make the most efficient use of an organization's assets.

Foreign Corrupt Practices Act
A U.S. law forbidding bribery and other corrupt practices. The law also requires all publicly held companies to maintain their accounting records in reasonable detail and accuracy and have an appropriate system of internal controls.

internal auditors
Accountants who review and evaluate accounting systems, including their internal controls.

management audit
A review to determine whether managers are implementing the policies and procedures specified by top management.

internal users. In later chapters, we will see many examples where a general-purpose accounting system designed to meet external reporting requirements does not generate the information needed for management decisions. As a decision-maker, you must recognize when information from the existing accounting system is not sufficient for your decision and be prepared to ask for additional information to be generated. Your requests for more information should be balanced against the cost of obtaining the information. As explained in the following section, you should only incur the cost to acquire additional information when the expected benefit of an improved decision exceeds the cost of the information.

Cost-Benefit and Behavioral Considerations

Objective 4

Describe the cost-benefit and behavioral issues involved in designing an accounting system.

Managers should keep two important ideas in mind when designing accounting systems: (1) the cost-benefit balance and (2) behavioral implications.

The **cost-benefit balance**—weighing estimated costs against probable benefits—is the primary consideration in choosing among accounting systems and methods. We will refer again and again to cost-benefit considerations throughout this book. Accounting systems are economic goods—like office supplies or labor—available at various costs. Which system does a manager want to buy: a simple file drawer for amassing receipts and canceled checks, an elaborate budgeting system based on computerized models of the organization and its subunits, or something in between?

cost-benefit balance
Weighing estimated costs against probable benefits, the primary consideration in choosing among accounting systems and methods.

The answer depends on a straightforward concept that often becomes complex when applied to real decisions. The concept is that the manager should purchase the system that provides the largest excess of benefits over cost. Real-world applications of this concept are often complex because the expected benefits are difficult to assess. For example, consider a manager at University Clinic who is considering installing a HorizonMIS®-computerized system from **American Medical Systems of Ohio** for managing a medical practice. With this system, users enter a piece of information only once and the system automatically integrates it with billing, insurance claims, and patient history records. Such a system is efficient and is subject to few errors, but should it be purchased? The expected benefits from the new system come from improved decisions or better controls, and it can be very difficult to develop a comprehensive assessment of these benefits, a point that will be illustrated repeatedly in later chapters.

Management accounting reports influence the decisions of managers. The system must provide accurate, timely reports in a form useful to managers. If a report is too complex, too difficult to use, or arrives too late, the manager may not use the report in making decisions. A report that goes unused creates no benefits.

Managers should also consider **behavioral implications**, that is, the system's effect on employees' decisions and behavior. For example, consider a performance report that a manager's superiors use to evaluate the operations for which the manager is responsible. If the report unfairly attributes excessive costs to the manager's operations, the manager may lose confidence in the system and not let it influence future decisions.

behavioral implications
The accounting system's effect on the behavior, specifically the decisions, of managers.

In a nutshell, think of management accounting as a balance between costs and benefits of accounting information coupled with an awareness of the importance of behavioral effects. Therefore, management accountants must understand related disciplines, such as economics, the decision sciences, and the behavioral sciences, to make intelligent decisions about the best information to supply to managers.

Planning and Control for Product Life Cycles and the Value Chain

To effectively plan and control production of goods or services, accountants and other managers must consider the product's life cycle. **Product life cycle** refers to the various stages through which a product passes: conception and product development; introduction into the market; maturation of the market; and, finally, withdrawal from the market. At each stage, managers face differing costs and potential returns. Exhibit 1-4 shows a typical product life cycle.

product life cycle
The various stages through which a product passes, from conception and development to introduction into the market to maturation and, finally, withdrawal from the market.

In the planning process, managers predict revenues and costs over the entire life cycle—however long or short. Then accounting systems track actual costs and revenues throughout the life cycle. Periodic comparisons between planned costs and revenues and actual costs and revenues allow managers to assess the current profitability of a product, determine its current product life-cycle stage, and make any needed changes in strategy.