MANAGERIAL ACCOUNTING

FIFTH EDITION

Pearson

BRAUN • TIETZ

Prepare, Apply, and Confirm

- **Auto-Graded Excel Projects**—Using proven, field-tested technology, MyAccountingLab's new auto-graded Excel Projects allow instructors to seamlessly integrate Excel content into their course without having to manually grade spreadsheets. Students have the opportunity to practice important Accounting skills in Microsoft Excel, helping them to master key concepts and gain proficiency in Excel. Students simply download a spreadsheet, work live on an accounting problem in Excel, and then upload that file back into MyAccountingLab, where they receive reports on their work that provide personalized, detailed feedback to pinpoint where they went wrong on any step of the problem. Available with select titles.

- **Enhanced eText**—The Pearson eText gives students access to their textbook anytime, anywhere. In addition to note-taking, highlighting, and bookmarking, the Pearson eText offers interactive and sharing features. Students actively read and learn through auto-graded practice, author videos, and more. Instructors can share comments or highlights, and students can add their own, for a tight community of learners in any class.

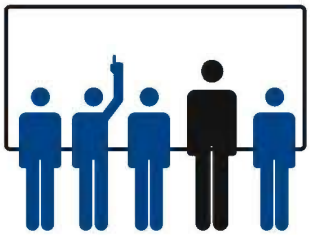
- Keep students engaged in learning on their own time, while helping them achieve greater conceptual understanding of course material through author-created solutions videos, opportunities to Try It!, and live exhibits.

- **Dynamic Study Modules**—With a focus on key topics, these modules work by continuously assessing student performance and activity in real time and, using data and analytics, provide personalized content to reinforce concepts that target each student's particular strengths and weakness.

with MyAccountingLab®

- **Hallmark Features**—Personalized Learning Aids, like Help Me Solve This, Demo Docs, and instant feedback are available for further practice and mastery when students need the help most!

- **Learning Catalytics**—Generates classroom discussion, guides lecture, and promotes peer-to-peer learning with real-time analytics. Now, students can use any device to interact in the classroom.



- **Personalized Study Plan**—Assists students in monitoring their own progress by offering them a customized study plan based on Homework, Quiz, and Test results. Includes regenerated exercises with unlimited practice, as well as the opportunity to earn mastery points by completing quizzes on recommended learning objectives.

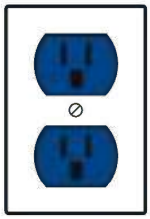
- **Worked Solutions**—Provide step-by-step explanations on how to solve select problems using the exact numbers and data that were presented in the problem. Instructors will have access to the Worked Out Solutions in preview and review mode.

Prepare, Apply, and Confirm with MyAccountingLab®

- **Algorithmic Test Bank**—Instructors have the ability to create multiple versions of a test or extra practice for students.

- **Reporting Dashboard**—View, analyze, and report learning outcomes clearly and easily. Available via the Gradebook and fully mobile-ready, the Reporting Dashboard presents student performance data at the class, section, and program levels in an accessible, visual manner.

- **LMS Integration**—Link from any LMS platform to access assignments, rosters, and resources, and synchronize MyLab grades with your LMS gradebook. For students, new direct, single sign-on provides access to all the personalized learning MyLab resources that make studying more efficient and effective.



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ACCOUNTING in the headlines

Accounting in the Headlines.

One of the biggest challenges for accounting instructors is that students often feel disengaged from the course material, which can seem abstract and unrelated to their personal experiences. But by incorporating real-life examples, instructors can spark student interest and engagement, especially when teaching accounting at the introductory level.

Accounting in the Headlines, an award-winning blog by renowned author Wendy Tietz, does just that with stories about real companies and events that can be used in the accounting classroom to illustrate introductory financial and managerial accounting concepts.

Concise, tailorable, and updated on a weekly basis, these articles easily fit into the typical introductory accounting curriculum, whether the course is delivered in-person or online. **Accounting in the Headlines articles, along with multiple-choice and polling questions, can be assigned through MyAccountingLab and Learning Catalytics™. Instructors are also provided with discussion questions, PowerPoint slides, and handout files, to support learning initiatives.**

http://accountingintheheadlines.com

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Managerial Accounting

Fifth Edition

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Pearson

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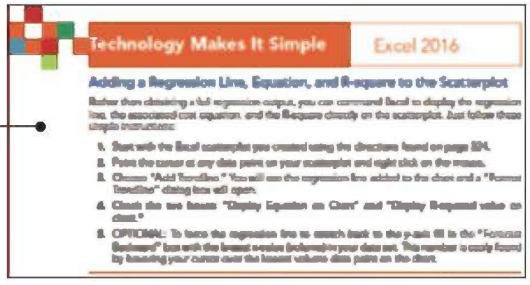
BRIEF CONTENTS

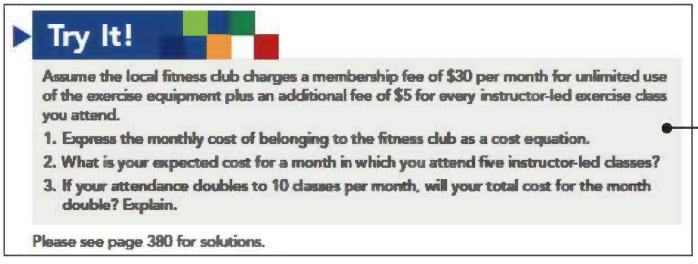
CONTENTS

Visual Walk-Through

Technology Makes it Simple

Expanded to include several new topics, these features give students step-by-step directions on how to use Microsoft Excel 2016 to perform the accounting task with more efficiency. Examples include: scatterplots, regression analysis, capital budgeting, CVP graphs, budgeting, and sensitivity analysis.



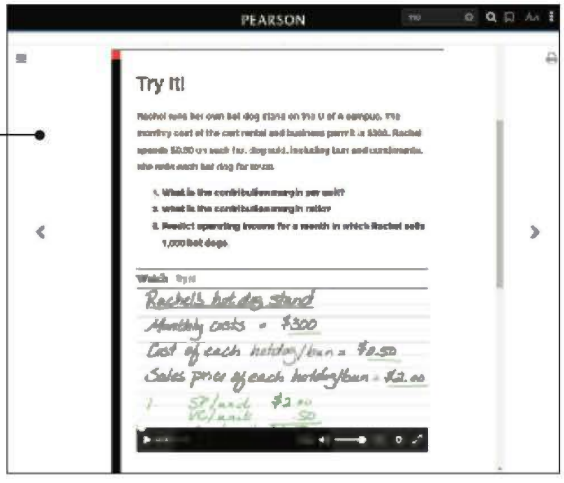


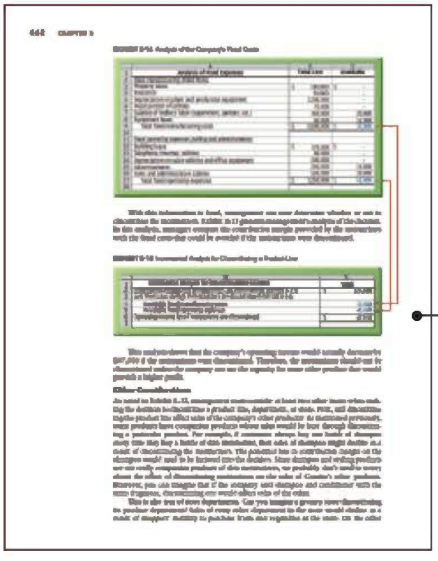
Try It! Interactive Questions

Found throughout the chapter, Try It! interactive questions give students the opportunity to apply the concept they just learned. Linking in the eText will allow students to practice in MyAccountingLab® without interrupting their interaction with the eText. Students' performance on the questions creates a precise adaptive study plan for additional practice.

Video Solutions

Found in the eText and MyAccountingLab, the video solutions feature the author walking through the Try It! problems on a white board. Designed to give students detailed help when they need it.



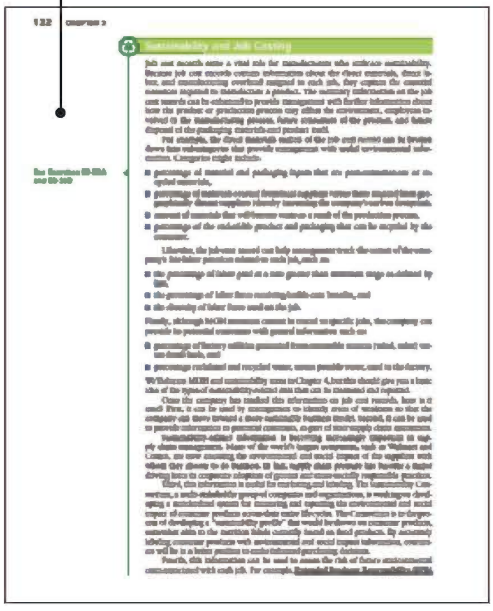


Excel Exhibits

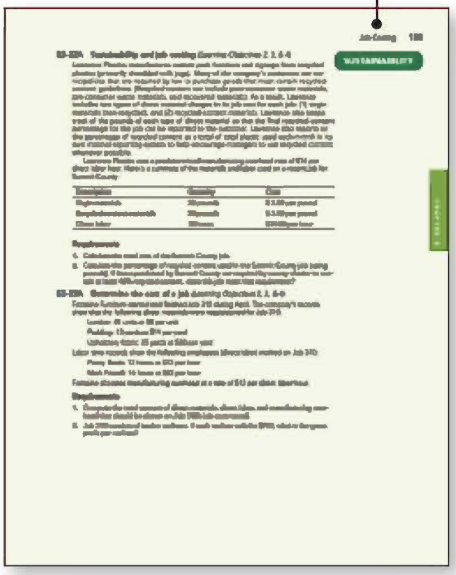
To give students a glimpse into the real world presentation of managerial accounting topics, all financial statements and schedules are presented in Excel. In the eText, a video link on selected exhibits will teach students how to create the same schedule using Excel.

Sustainability

Within every chapter is a section on how sustainability relates to the main chapter topic.



Also included is a quick reference on which end-of-chapter problems correspond to the sustainability concept.

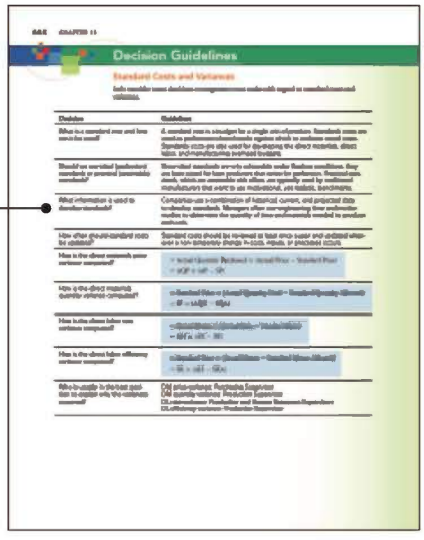


Sustainability Chapter

This chapter provides a deeper dive into how sustainability can generate business value. It also includes sections on sustainability reporting, the Sustainability Accounting Standards Board, and environmental management accounting systems.

Why is this important?

Found throughout the chapter, this feature connects accounting with the business environment so that students can better understand the business significance of managerial accounting.

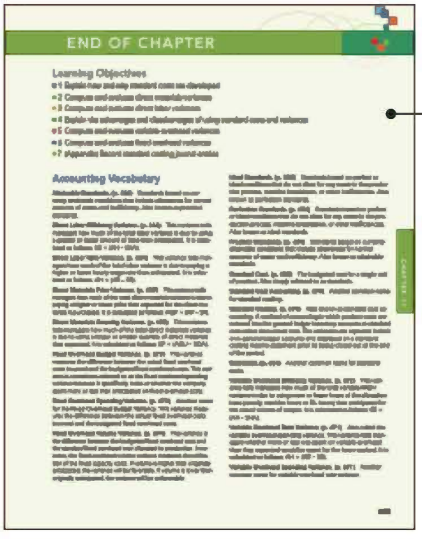


Decision Guidelines

Found at the midpoint and end of each chapter, this feature uses a business decision context to summarize key terms, concepts, and formulas from the chapter in question and answer format.

Stop & Think

Found at various points within each chapter, this feature includes a question-and-answer snapshot asking students to critically examine a concept they just learned.

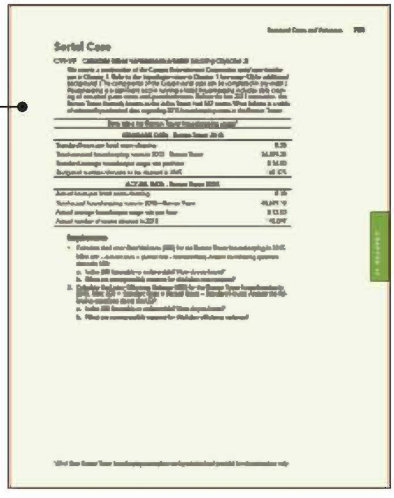


End-of-Chapter Problems

The end-of-chapter content for short exercises, exercises, and problems has been refreshed for this edition. End-of-chapter items are structured to allow students to progress from simple to more rigorous as they move from item to item.

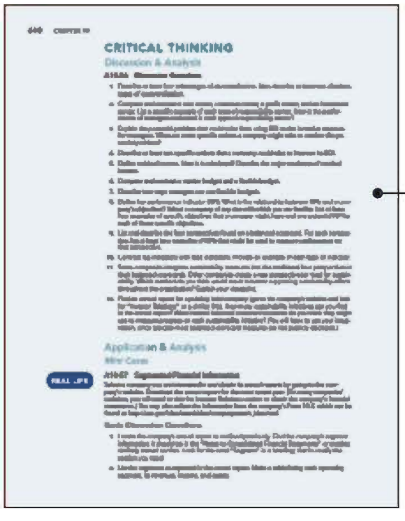
New short exercises based on real world situations have been added to every chapter to help students make the connection between the real world and the concepts being studied.

NEW!



Serial Case

A serial (continuing) case that focuses on one real world company has been added to the end-of-chapter material. The serial case consists of several small cases, one per chapter. These cases are meant to inspire critical thinking and to connect the content with real life by following one company through all of the chapters in managerial accounting.



Critical Thinking

Problems are included to provide students with the opportunity for applied critical thinking. These problems include ethical topics, mini cases, and decision-making cases in real companies.

- Ethics Mini Cases based on the IMA Statement of Professional Practice are highlighted with an icon.

  ETHICS

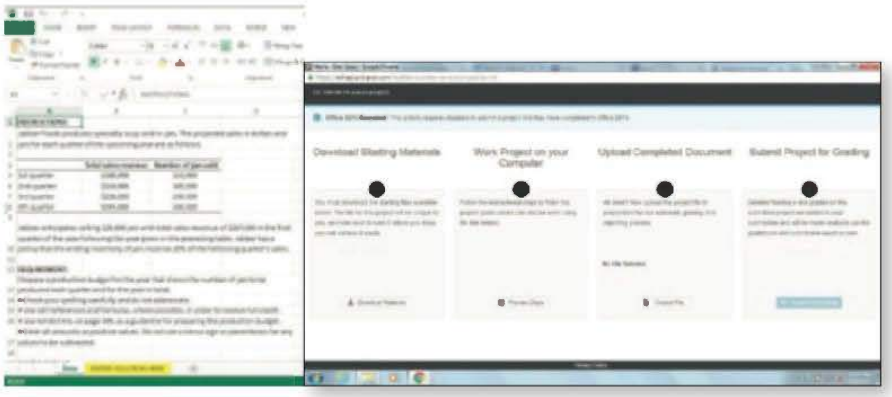
- Real Life Mini Cases focusing on a real company and the decisions presented in business are highlighted with an icon.

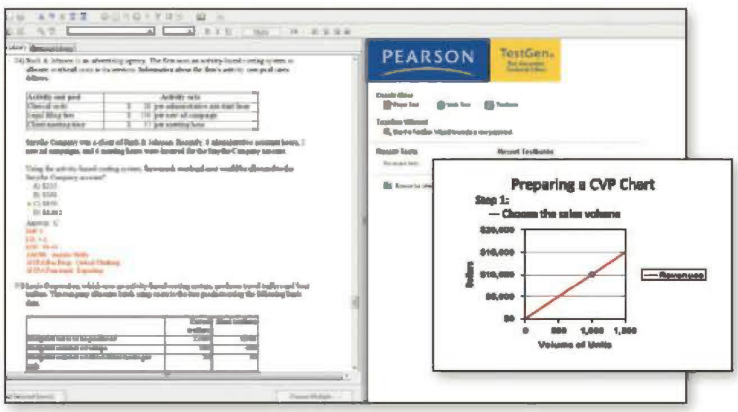
  REAL LIFE

NEW!

Excel in MyAccountingLab

- Students will download and complete problem in Microsoft Excel.
- Students receive personalized, detailed feedback upon uploading their completed spreadsheets.
- Questions will be auto-graded and reported to the grade book.





Test Bank and PowerPoints

Test bank includes algorithmic questions and 30% new material. PowerPoints have been updated and refreshed for the new edition. Worked-out problems contain the entire problem statement.

NEW!

Directed Reading Guides

Directed reading guides, which have been prepared by the authors, help students take thorough notes while reading the text and glean the most important information from each chapter. Each chapter's reading guide follows the text, paragraph-by-paragraph, asking students to answer questions and fill in the blanks, thereby keeping students actively engaged while preparing for class.

NEW!

Accounting in the Headlines Blog

Accounting in the Headlines, www.accountingintheheadlines.com is a blog written by Wendy Tietz. New stories are added to the blog each week. The blog contains short stories about real-life companies and current events that can be used in the accounting classroom to illustrate introductory accounting concepts. The blog posts contain discussion questions, PowerPoint slides, and handout files, making it a turnkey solution for instructors wanting to use real-life examples in their classes. All content is intended to be brief and fit easily into the typical introductory accounting class. In addition to the content found on the blog site, multiple-choice questions related to each blog post can be found in MyAccountingLab and in Learning Catalytics.

NEW!

Concept Videos for Students

Short videos focusing on key concepts are available in MyAccountingLab to further emphasize major concepts. These videos can be assigned in homework or used as part of a flipped classroom strategy.

CONTENT CHANGES TO THE FIFTH EDITION

Both students and instructors will benefit from a variety of new content in the fifth edition.

New and updated content within the text:

- Refreshed chapter opening stories attract student attention and lay the groundwork for the chapter using recognizable, real-world companies.
- Updated sustainability features in each chapter show how sustainability relates to the chapter content.
- Select modifications and enhancements were made to each chapter to make it easier for students to grasp difficult concepts. Some of these modifications include the following:

Chapter 1 Redesigned to focus on the professional nature of management accounting, including the American Accounting Association's Vision Model, IMA's definition of management accounting, technical and soft skills required by professionals, summary of CMA exam requirements, and a step-by-step model for critical thinking that can be referenced and used throughout the course. The chapter also includes a section on why management accounting is important to students majoring in other fields of study.

Chapter 2 Simplified language used for product costs (rather than inventoriable product costs) now used throughout the book; revised discussion of direct and indirect costs.

Chapter 3 Introduction and illustration of manufacturing overhead as a cost pool; Decision Guidelines now include job costing journal entries.

Chapter 5 Red arrows and speech bubbles on Exhibits help students better understand process costing calculations.

Chapter 7 Learning objective 3 expanded to illustrate the impact of changing business conditions on operating income as well as on the breakeven point.

Chapter 8 Streamlined introduction on relevant data; new company example for pricing, special order, and product discontinuation decisions; new "pitfalls to avoid" section with each decision; additional summary problem with worked out solution.

Chapter 10 To provide continuity between budgeting and performance evaluation, the flexible budgeting example now includes the entire income statement using the company featured in Chapter 9; updated PepsiCo data illustrates responsibility accounting.

Chapter 11 Company example tied to Chapters 9 and 10 to provide continuity between chapter topics; variance exhibits are more specifically labeled to better serve as references for students.

Chapter 14 Updated with the latest financial information from Target, Macy's, Kohl's, and Walmart; revised description of horizontal and vertical analysis; two additional profitability ratios included in the chapter.

Chapter 15 Updated for recent company examples and new data on sustainability reporting; new sections on the Sustainability Accounting Standards Board and inclusion of the landmark 2015 Paris Agreement.

New and updated content within the end-of-chapter material:

Quick Checks Updated quick checks in each chapter. These questions are conceptual in nature.

Short Exercises All short exercises have been updated. In addition, a new real world short exercise is included in every chapter.

Exercises All exercises have been updated.

Problems All problems have been updated.

Ethics Mini Cases Updated case at the end of each chapter based on the IMA Statement of Professional Practice.

Real Life Mini Cases Updated case at the end of each chapter focusing on a real company situation.

Serial Case An all-new serial case has been added to the end-of-chapter material. All of these cases focus on the same real world company and continue throughout the text.

ABOUT THE AUTHORS

Karen Wilken Braun is a professor for the Department of Accountancy in the Weatherhead School of Management at Case Western Reserve University. Dr Braun is also the Beta Alpha Psi adviser and the director of the undergraduate accounting program. Professor Braun was on the faculty of the J.M. Tull School of Accounting at the University of Georgia before her appointment at Case Western Reserve University. She has received several student-nominated Outstanding Teacher of the Year awards at both business schools, and is regularly asked to speak to student clubs and organizations about personal financial planning.

Professor Braun is a Certified Public Accountant and holds membership in the American Accounting Association (AAA), the Institute of Management Accountants, and the American Institute of Certified Public Accountants. She also holds the Chartered Global Management Accountant designation, and is a member of the AAA's Management Accounting Section as well as the Teaching, Learning and Curriculum Section. Dr. Braun has has regularly held leadership positions with the AAA's Conference on Teaching and Learning in Accounting (CTLA) including co-chairing the 2015 and 2016 conferences. She was awarded the 2016 Bea Sanders/AICPA Teaching Innovation Award for her development of Excel-based active-learning resources for introductory managerial accounting courses. Dr. Braun's research and teaching interests revolve around lean operations, sustainability, corporate responsibility, and accounting education. Dr. Braun's work has been published in *Contemporary Accounting Research, Issues in Accounting Education*, and *Journal of Accounting Education*.

Dr. Braun received her Ph.D. from the University of Connecticut and her B.A., summa cum laude, from Luther College, where she was a member of Phi Beta Kappa. Dr. Braun gained public accounting experience while working at Arthur Andersen & Co. and accumulated additional business and management accounting experience as a corporate controller.

Professor Braun has two daughters who are both in college. In her free time, she enjoys biking, gardening, hiking, skiing, and spending time with family and friends.

To my children, Rachel and Hannah, who are the joy of my life,
and to my students, who inspire me daily.

Karen W. Braun

Wendy M. Tietz is a professor for the Department of Accounting in the College of Business Administration at Kent State University. She teaches introductory financial and managerial accounting in a variety of formats, including large sections, small sections, and web-based sections. She has received numerous college and university teaching awards while at Kent State University.

Dr. Tietz is a Certified Public Accountant, a Certified Management Accountant, and a Chartered Global Management Accountant. She is a member of the American Accounting Association (AAA), the Institute of Management Accountants and the American Institute of Certified Public Accountants. She is a member of the AAA's Management Accounting Section as well as the Teaching, Learning and Curriculum Section. She has published in *Strategic Finance, IMA Educational Case Journal, Issues in Accounting Education, Accounting Education: An International Journal*, and *Journal of Accounting & Public Policy*. She regularly presents at AAA regional and national meetings.

Dr. Tietz authors a blog, Accounting in the Headlines, which has real-world news stories and resources for use in the introductory accounting classroom. Dr. Tietz was awarded the Bea Sanders/AICPA Teaching Innovation Award for her blog in 2014 and the Jim Bulloch/IMA Award for Innovations in Management Accounting Education in 2016. She was also awarded the Best Educational/Case Award for the Teaching, Learning and Curriculum Section (AAA, Ohio Region) in 2016. Dr. Tietz earned her Ph.D. from Kent State University. She received both her M.B.A. and B.S.A. from the University of Akron. She worked in industry for several years, both as a controller for a financial institution and as the operations manager and controller for a recycled plastics manufacturer.

Dr. Tietz and her husband, Russ, have two grown sons. In her spare time, she enjoys walking, reading, and spending time with family and friends. She is also intensely interested in using technology and social media in education.

To my husband, Russ, who steadfastly and enthusiastically supports every new project.

Wendy M. Tietz

ACKNOWLEDGMENTS

We'd like to extend a special thank you to our reviewers who took the time to help us develop teaching and learning tools for Managerial Accounting courses to come. We value and appreciate their commitment, dedication, and passion for their students and the classroom:

Managerial Accounting, 5e and prior editions

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Pickture/Alamy

Sources: Starbucks 2015 10-K filing www.starbucks.com/about-us/company-information/starbucks-company-timeline; starbucks.com/responsibility

Introduction to Managerial Accounting

Learning Objectives

- **1** Identify managers' three primary responsibilities
- **2** Distinguish financial accounting from managerial accounting
- **3** Describe the roles and skills required of management accountants within the organization
- **4** Describe the role of the Institute of Management Accountants (IMA) and apply its ethical standards
- **5** Discuss the business trends and regulations affecting management accounting

Starbucks Corporation, which began operations in 1971 as a sole coffee bean shop in Seattle's well-known Pike Street Market, now has over 23,000 company-owned and licensed stores in 68 countries around the world. The company's success can be attributed to innovative thinking, carefully disciplined expansion, and a focus on corporate responsibility. The company believes that its commitment to ethically sourced coffee, contributions to local communities, and superior employee benefits to part-time as well as full-time employees contribute to the company's objective of being one of the most recognized and respected brands in the world. Management accounting plays a role in implementing the company's strategy. Without information on the costs and benefits of different beverages, programs, distribution channels, and geographic areas, Starbucks would not be able to make responsible, yet profitable, decisions. Starbucks uses management accounting to make operating decisions that focus on corporate responsibility, while also keeping the company financially strong. Case in point: $100 invested in Starbucks's stock in 2010 would have been worth $480 at the end of fiscal 2015, a return well above the S&P 500.

As the Starbucks story shows, managers use accounting information for much more than preparing annual financial statements. They use managerial accounting information to guide their actions and decisions. For Starbucks, these decisions might include opening new stores, adding new products, or even providing new employee benefits, such as Starbucks's new tuition reimbursement plan. Management accounting information helps management decide whether any or all of these actions will help accomplish the company's ultimate goals. In this chapter, we'll introduce managerial accounting, describe how it differs from financial accounting, and discuss the skills and ethics management accountants need. We will also discuss the regulatory and business environment in which today's managers and management accountants operate.

What Is Managerial Accounting?

Managerial accounting, also referred to as management accounting, focuses on the financial insight needed for an organization to achieve success. In the words of the Institute of Management Accountants,

> **Management accounting** *is a profession that involves partnering in management decision making, devising planning and performance management systems, and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy.*[1]

As you will see throughout the book, managerial accounting is very different from financial accounting. Financial accounting focuses on providing stockholders and creditors with the information they need to make investment and lending decisions. This information takes the form of financial statements: the balance sheet, income statement, statement of shareholders' equity, and statement of cash flows. On the other hand, managerial accounting focuses on identifying, interpreting, analyzing, and implementing the financial information internal management needs to run the company efficiently, effectively, and profitably. This information takes many forms depending on management's needs.

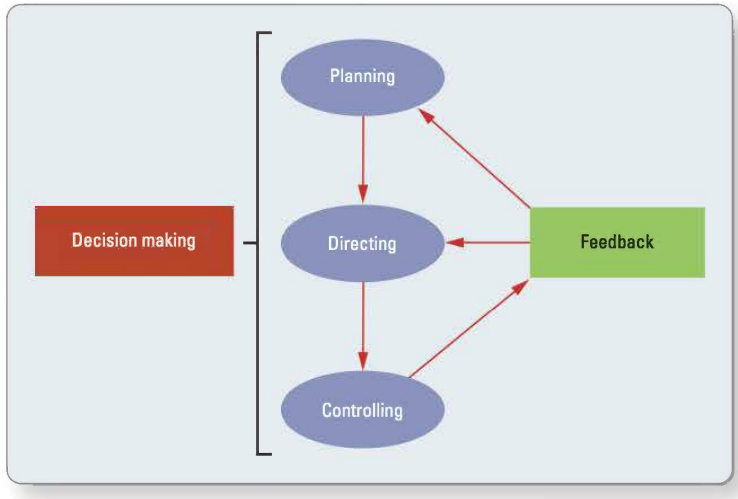
To understand the kind of information managers need, let's first look at their primary responsibilities.

Managers' Three Primary Responsibilities

1 Identify managers' three primary responsibilities

Managerial accounting helps managers fulfill their three primary responsibilities, as shown in Exhibit 1-1: planning, directing, and controlling. Integrated throughout these responsibilities is **decision making** (identifying alternative courses of action and choosing among them).

EXHIBIT 1-1 Managers' Three Primary Responsibilities



[1]Statement on Management Accounting, "Definition of Management Accounting," Institute of Management Accountants, 2008.

- **Planning** involves setting goals and objectives for the company and determining how to achieve them. For example, one of Starbucks's goals is to generate more sales. One strategy to achieve this goal is to open more retail locations. For example, the company opened 731 new company-operated stores in fiscal 2015, roughly half in the United States and half in China and the Asia-Pacific.[2] Another strategy is to develop new products and new distribution channels (such as selling coffee through grocery stores and warehouse clubs). Managerial accounting translates these plans into **budgets**—the quantitative expression of a plan. Management analyzes the budgets before proceeding to determine whether its expansion plans make financial sense.
- **Directing** means overseeing the company's day-to-day operations. Management uses sales and costs information by store, region, and distribution channel, to run daily business operations. For example, Starbucks managers use sales data to determine which beverages on the menu and products in the stores are generating the most sales. They use that information to adjust product offerings, marketing strategies, and retail expansion decisions.
- **Controlling** means evaluating the results of business operations against the plan and making adjustments to keep the company pressing toward its goals. Starbucks uses performance reports to compare each store's actual performance against the budget and then based on that *feedback* take corrective actions if needed. If actual costs are higher than planned, or actual sales are lower than planned, then management may revise its plans or adjust operations.

Management is continually making decisions while it plans, directs, and controls operations. Starbucks management must decide where to open new stores, which stores to refurnish, what prices to set for beverages and other products in the store, and so forth. Managerial accounting provides the financial insight needed to help make these decisions.

A Road Map: How Managerial Accounting Fits In

This book will show you how managerial accounting helps managers fulfill their responsibilities. The rest of the text is organized around the following themes:

1. **Managerial Accounting Building Blocks** Chapter 1 helps you understand more about the management accounting profession and today's business environment. Chapter 2 teaches you some of the language that is commonly used in managerial accounting. Just as musicians must know the notes to the musical scale, management accountants *and* managers must have a common understanding of these terms to communicate effectively with one another.
2. **Determining Unit Cost (Product Costing)** To run a business profitably, managers must be able to identify the costs associated with manufacturing its products or delivering its services. For example, Starbucks's managers need to know the cost of producing each beverage on the menu as well as the cost of operating each retail location. Managers must have this information so that they can set prices high enough to cover costs and generate an adequate profit. Chapters 3, 4, and 5 show you how businesses determine these costs. Chapter 4 also shows how managers can effectively control costs by eliminating wasteful activities and focusing on quality.
3. **Making Decisions** Before Harold Schultz opened the first Starbucks coffee house, he must have thought about the volume of sales needed just to break even—that is, just to cover costs. In order to do so, he had to first identify and estimate the types of costs the coffee house would incur, as well as the profit that would be generated on each beverage served. These topics are covered in Chapters 6 and 7. Chapter 6 shows how managers identify different types of cost behavior, while Chapter 7 shows how managers determine the profitability of each unit sold as well as the

[2]Starbucks 2015 10-K filing.

company's breakeven point. Chapter 8 continues to use cost behavior information to walk through common business decisions, such as outsourcing and pricing decisions. Finally, Chapter 12 shows how managers decide whether to invest in new equipment, new projects, or new locations.

4. **Planning** Budgets are management's primary tool for expressing its plans. Chapter 9 discusses all of the components of the master budget and the way companies like Starbucks use the budgeting process to implement their business goals and strategies.
5. **Controlling and Evaluating** Management uses many different performance evaluation tools to determine whether individual segments of the business are reaching company goals. Chapters 10 and 11 describe these tools in detail. Chapters 13 and 14 describe how the statement of cash flows and financial statement analysis can be used to evaluate the performance of the company as a whole. Finally, Chapter 15 discusses how companies are beginning to address the sustainability of their operations, by measuring, reporting, and minimizing the negative impact of their operations on people and the environment. As you saw in the opening story, some of Starbucks's primary business concerns are to use ethically sourced coffee, contribute to local communities, and provide superior employee benefits to part-time as well as full-time employees.

Differences Between Managerial Accounting and Financial Accounting

2 Distinguish financial accounting from managerial accounting

Managerial accounting information differs from financial accounting information in many respects. Exhibit 1-2 summarizes these differences. Take a few minutes to study the exhibit (on page 5), and then we'll apply it to Starbucks.

Starbucks's *financial accounting* system is geared toward producing annual and quarterly consolidated financial statements that will be used by investors and creditors to make investment and lending decisions. Since Starbucks is a publicly traded company, its financial statements can be easily found on the Internet by searching for its 10-K (annual) and 10-Q (quarterly) SEC filings. The financial statements, which must be prepared in accordance with Generally Accepted Accounting Principles (GAAP), objectively summarize the transactions that occurred between Starbucks and external parties during the previous period. The Securities and Exchange Commission (SEC) requires that the annual financial statements of publicly traded companies, such as Starbucks, be audited by independent certified public accountants (CPAs). Starbucks's financial statements are useful to its investors and creditors, but they do not provide management with enough information to run the company effectively.

Starbucks's *managerial accounting* system is designed to provide internal managers with the accounting information needed to plan, direct, and control operations. Since managerial accounting information is specifically designed to help *internal* management, it is confidential information that is generally *not* available to the public. There are no GAAP-type standards or audits required for managerial accounting. To provide Starbucks's management with the information needed to make good business decisions, managerial accounting reports focus on smaller segments of the company (such as individual retail locations, geographic areas, and specific beverages and products) rather than the company as a whole. Rather than preparing reports just once a year, Starbucks prepares managerial accounting reports as often as needed, which could be as frequently as daily or even hourly. Many companies even use "real-time performance dashboards" that constantly update so that managers have the financial information they need to control operations and make timely decisions. Since managerial accounting revolves around planning and decision making, much of it focuses on the *future* rather than on the past. Any information that is *relevant* to management will be included. Finally, since every company is different, managerial accounting systems will vary from company to company. In designing

EXHIBIT 1-2 Managerial Accounting Versus Financial Accounting

MANAGERIAL ACCOUNTING	ISSUE	FINANCIAL ACCOUNTING
Internal users such as managers.	Who are the primary users of the information?	External users, such as creditors, stockholders, and government regulators.
To help managers plan, direct, and control business operations and make business decisions.	What is the purpose of the information?	To help external users make investing and lending decisions.
Any internal accounting report deemed worthwhile by management.	What is the primary accounting product?	Financial statements.
Management determines what it wants in a report, and how it wants it formatted. Reports are prepared only when management believes the benefit of using the report exceeds the cost of preparing the report.	What must be included in the report, and how must it be formatted?	Generally Accepted Accounting Principles (GAAP) determine the content and format of financial statements.
While some information is based on past transactions, managerial accounting focuses on the future. It provides information on both external and internal transactions.	What is the underlying basis of the information?	The information is based on historical transactions with external parties.
The information must be relevant.	What information characteristic is emphasized?	The information must be reliable and objective.
Segments of the business, such as products, customers, geographical regions, departments, and divisions.	What business "unit" is the report about?	The company as a whole (consolidated financial statements). Limited segment data is provided in the footnotes.
It depends on management's needs. Some reports are prepared daily, while others may be prepared only one time.	How often are the reports prepared?	Annually and quarterly.
There are no independent audits. However, the company's internal audit function may examine the procedures used in preparing the reports.	Does anyone verify the information?	Independent certified public accountants (CPAs) audit the annual financial statements of publicly traded companies and express an opinion on the fairness of the financial information they contain.
No authoritative body requires managerial accounting reports.	Is the information required by an outside group/ government agency?	Yes, the Securities and Exchange Commission (SEC) requires publicly traded companies to issue annual audited financial statements.
Management carefully considers behavioral implications when designing the managerial accounting system.	Is there any concern over how the reports will affect employee behavior?	The concern is about adequacy of disclosure; behavioral implications are secondary.

the system, management will weigh the costs of collecting and analyzing information with the benefits they expect to receive. Management will also consider how the system will affect employees' behavior. Employees try to perform well on the parts of their jobs that the accounting system measures and rewards.

What Role Do Management Accountants Play?

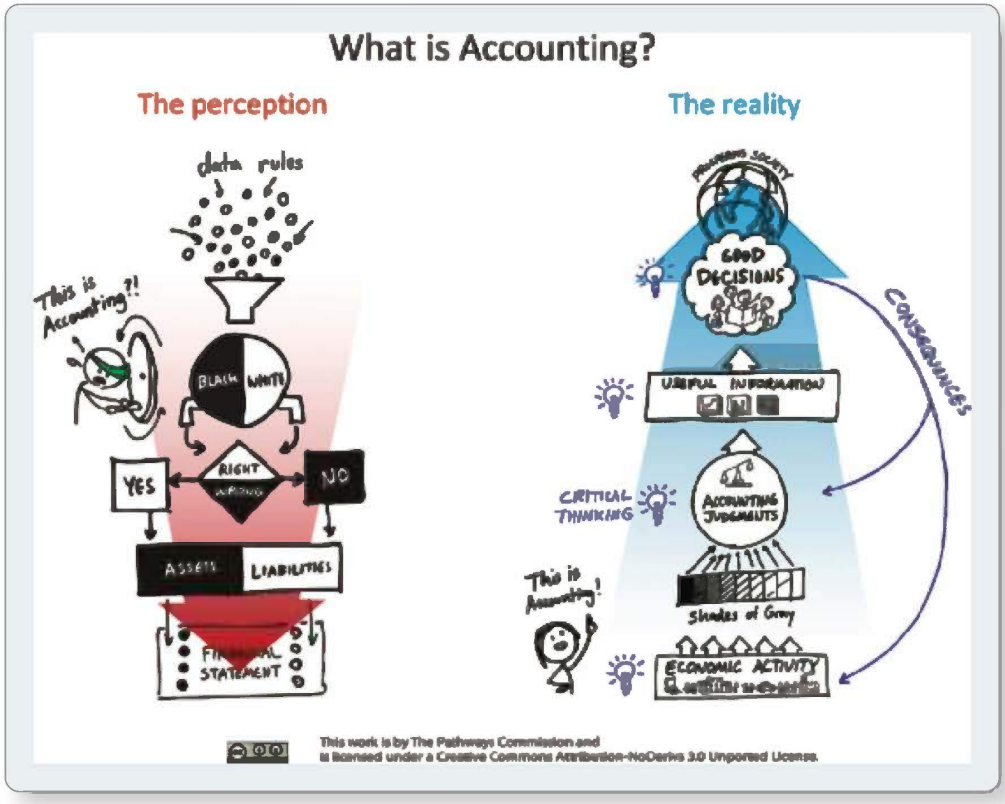
In this section, we'll look at the role of management accountants within the organization and the skills they need to help their organizations succeed.

The Role of Management Accountants

3 Describe the roles and skills required of management accountants within the organization

When you think of accountants, what do you picture? Many people picture accountants the way they were 50 to 100 years ago, before the widespread use of computers when everything about measuring business transactions was relatively simplistic. As shown on the left in Exhibit 1-3, many people have the erroneous conception that accountants are nothing more than "bean counters," plugging numbers into set formulas and using a black and white set of rules to churn out information for others to use. If this were true, being an accountant would be tedious and noncreative work indeed. Thankfully, nothing could be farther from the truth.

EXHIBIT 1-3 The Perception and the Reality



Source: © American Accounting Association. Used with permission.

As shown on the right in Exhibit 1-3, today's accountants are professionals who use an immense amount of critical thinking, insight, and judgment to capture the reality of today's complex economic events. As valued financial advisors, managerial accountants partner with management to make critical business decisions that have widespread and significant consequences for the business and for society. Let's face it: the business world is much more complex than it was in your grandparents' day. With rapidly changing technology and continual business innovation, the role of accountants has drastically changed from what it used to be. In fact, management accountants are rarely referred to by that name any more; instead, they are usually referred to as business advisors, analysts, or finance professionals.

As you go through each topic in this book, keep the blue picture in Exhibit 1-3 in mind, and ask yourself the following questions:

1. **What is the business issue, event, or problem, and how can accounting help to solve it?** Management accounting always begins with some relevant business issue that management is facing or some economic event that occurred in the past or might occur in the future. Management accounting is used to shed light on the issue and direct management's path.
2. **What are the "gray areas"?** In other words, what differences in methods, assumptions, estimates, measurement choices, and judgment calls might impact the information that is used for decision making? Because of the gray areas and judgment involved, accounting numbers are rarely as precise as they may seem.
3. **What are the implications for the business if the accounting information used in the decision is "wrong"?** Because of the gray areas, it's difficult to say that accounting information is ever "wrong." However, judgment in these gray areas could lead to financial estimates that are on the high side or on the low side. What are the consequences of numbers that are too high or too low? Would estimates that are "off" in one direction be worse than the other direction?

Since you are studying management accounting for the first time, the topics in the book may at first appear very straightforward and immutable. However, if you consider the three questions listed above, you'll begin to see the significance of the judgment calls that go into management accounting and the ramifications to the business decisions that are consequently made.

The Skills Required of Management Accountants

To understand the skills required of management accountants, let's go back to the definition of management accounting with which we started the chapter:

> *Management accounting is a profession that involves partnering in management decision making, devising planning and performance management systems, and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy.*[3]

First and foremost, management accounting is a profession (in a later section, we'll describe the professional organizations that represent management accountants). Since management accountants work in a professional advisory role, they need a vast array of

EXHIBIT 1-4 Technical and Nontechnical Competencies Needed by Management Accountants

Technical Competencies	Nontechnical Competencies
• Planning, budgeting, and forecasting	• Ethics
• Internal financial reporting	• Communication
• Performance management	• Customer service
• Cost management	• Adaptability
• Internal controls	• Strategic thinking
• Technology	• Process improvement
• Decision analysis	• Leadership
• Financial statement analysis	• Collaboration
• Investment decision making	• Business acumen
• Enterprise risk management	• Change management

[3]Statement on Management Accounting, "Definition of Management Accounting," Institute of Management Accountants, 2008.

skills. Some of these skills are technical, whereas others are nontechnical competencies, which are often referred to as "soft-skills." A recent survey of management accounting professionals revealed some of the top skills they need to help their organizations achieve success. Exhibit 1-4 summarizes some of these competencies.[4]

This book will introduce you to most of the technical competencies listed in Exhibit 1-4, as well as give you the opportunity to advance many of your nontechnical skills. As you can see in the exhibit, the ability to use technology and common software, such as Microsoft Excel, is a critical skill management accountants need to possess. Because Excel is used so pervasively in business, you will see many of the exhibits in this book featured in Excel. You will also see features in several chapters that teach you how to use Excel to perform various tasks. Regardless of your future career path, becoming as proficient as you can with Excel during this course will help you become more marketable and more valuable to your future employer.

Managerial Accounting Is Important to All Careers

As you can see, management accountants don't fit the stereotypical accountant portrayed in movies and shows. Because of their expanding role, management accountants have truly become trusted and valued internal business advisors. But what if you don't plan to major in accounting? How can this course be of use to you? Here are just a few specific ways this course can help you prepare for your future business career:

- **Entrepreneurs** If you are planning to be an entrepreneur, you'll first want to know if your business idea makes financial sense. How high will volume have to be for your business to at least break even? How high will it have to be for your business to earn the level of profit that you want to achieve? As you begin to implement your business plan, should you negotiate sales contracts that are more fixed (flat fee) or variable (fee per activity)? What about costs? Would having more fixed costs or variable costs be better? How sensitive will your profits be to changes in volume if the economy booms or if it takes a turn for the worse? How will you decide whether to invest in new equipment and technology? As your business grows in size, how will you divide it into manageable segments and relinquish oversight of day-to-day operations to others, while at the same time retain control? How can you design systems to ensure your managers will make decisions that are consistent with your goals? And if you decide to raise capital or sell your business, what will potential investors want to see when they analyze your financial statements and study your statement of cash flows? All of these topics are addressed in this book.
- **Business Management** If you are planning to be a general business manager, not a day will go by in which you don't consider the financial ramifications of your decisions. You'll need to have a firm grasp on the costs of obtaining or manufacturing every product you sell and/or every service you deliver. You'll also want to understand how costly every activity within the company is to perform and have specific strategies in hand for controlling and reducing those costs. You'll need to understand which costs will increase as your volume increases and which costs will be unaffected by changes in volume. Cost information will drive many, if not all, of your decisions about where to locate, what to produce, which suppliers to use, whether to outsource, which products to emphasize, whether to implement quality improvement initiatives, whether to automate some of your processes, how to price your products or bid for jobs, whether to discontinue certain products or operations, and so forth. Every business decision you make will be rooted in revenue and cost information, so it will be important for you to understand how those costs were obtained and what they include. Different costs will be used for different purposes. All of these topics are addressed in this book.
- **Marketing and Sales** If you are planning to be in marketing and sales, your marketing strategy, assumptions, and predictions will be the driving force behind the company's entire budget. As a result, you will be intimately involved with developing the budget. Product-line profitability reports will show you which products are most profitable and will guide your decisions about which products to emphasize. Cost information

[4]"The Skills Gap in Entry-level Management Accounting and Finance," Institute of Management Accountants and American Quality and Productivity Center, 2014.

will drive many of your pricing decisions, as well as decisions about whether to accept special orders at reduced sales prices or give volume discounts. The company's stance on sustainability may impact your ability to attract various customers and target different markets. All of these topics are addressed in this book.

- **Nonbusiness Majors** Even if you are planning to be a nurse, engineer, musician, or fashion designer, the information you learn in this course will be of consequence to you. All organizations, including nonprofits and governmental agencies, use cost and revenue information to guide their plans, actions, and decisions. No matter what your career path, every activity you engage in will impact the costs and revenues of your organization. That holds true, whether you are tending to sick patients, designing bridges, managing a symphony orchestra, or designing clothes. Management will expect you to operate under limited resources and will often look to you for revenue and expense estimates for specific projects or for specific periods of time. Management may also hand you budgets, cost data, and performance reports and expect you to understand it and use it for making decisions. The more you understand the underlying financial information, the better prepared you will be.

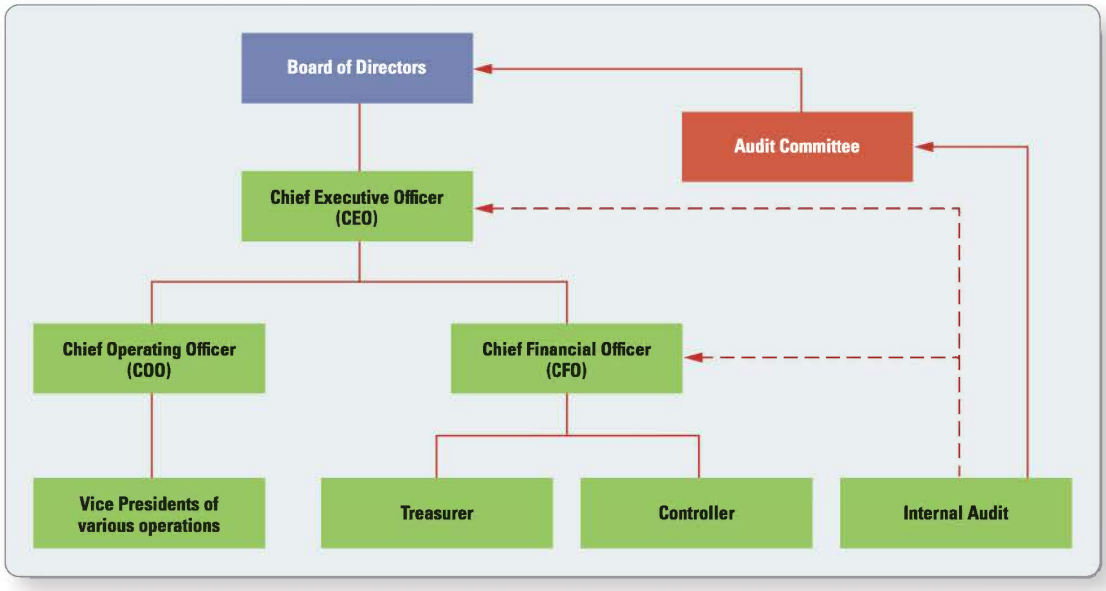
We've chosen to highlight just a few specific business career tracks here, but many of the same issues will pertain to all business careers, including those in logistics, supply chain management, production, and finance. There is such a huge overlap in business between managerial accounting and finance that both are often referred to as the "finance function," and the people who work in this function, regardless of whether they were accounting or finance majors, are often referred to as analysts. No matter what your eventual career, you will be using managerial accounting information. As is often said, accounting is the language of business, so the more you know about it, the more valuable you will be to your organization.

Accounting within the Organizational Structure

Most corporations are too large to be governed directly by their stockholders. Therefore, stockholders elect a board of directors to oversee the company. Exhibit 1-5 shows a typical organizational structure, with the green boxes representing employees of the firm and the orange and blue boxes representing nonemployees.

The board members meet only periodically, so they hire a chief executive officer (CEO) to manage the company on a daily basis. The CEO hires other executives to run various aspects

EXHIBIT 1-5 Typical Organizational Structure



of the organization, including the **chief operating officer (COO)** and the **chief financial officer (CFO)**. The COO is responsible for the company's operations, such as research and development (R&D), production, and distribution. The CFO is responsible for all of the company's financial concerns. The **treasurer** and the **controller** report directly to the CFO. The treasurer is primarily responsible for raising capital (through issuing stocks and bonds) and investing funds. The controller is usually responsible for general financial accounting, managerial accounting, and tax reporting. Many organizations have other C-Suite personnel not pictured in Exhibit 1-5, such as Chief Information Officer (in charge of the company's technology infrastructure) and the Chief Sustainability Officer (in charge of devising, implementing, and reporting on the company's sustainability initiatives). The CFO, controller, and others within the accounting function work closely with these individuals since technology plays a significant role in collecting managerial accounting information, and, as you'll see later in the chapter and book, managerial accounting both impacts, and is impacted by, sustainability initiatives.

Let's now turn our attention to the right side of Exhibit 1-5. The New York Stock Exchange requires that listed companies have an **internal audit function**. The role of the internal audit function is to ensure that the company's internal controls and risk management policies are functioning properly. The Internal Audit Department reports directly to a subcommittee of the board of directors called the **audit committee**. The audit committee oversees the internal audit function as well as the annual audit of the financial statements by independent CPAs. Both the Internal Audit Department and the independent CPAs report directly to the audit committee for one very important reason: to ensure that management will not intimidate them or bias their work. However, since the audit committee meets only periodically, it is not practical for the audit committee to manage the internal audit function on a day-to-day basis. Therefore, the internal audit function also reports to a senior executive, such as the CFO or CEO, for administrative matters.

Why is this important?

"Management accountants act as internal business advisors. They provide the financial information and in-depth analysis needed to make good business decisions."

When you look at the organizational chart pictured in Exhibit 1-5, where do you think management accountants work? It depends on the company. Management accountants used to work in accounting departments and reported directly to the controller. Now, over half of management accountants are located throughout companies and work on cross-functional teams. **Cross-functional teams** consist of employees representing various functions of the company, such as R&D, design, production, marketing, distribution, and customer service. Cross-functional teams are effective because each member can address business decisions from a different viewpoint. These teams often report to various vice presidents of operations. Management accountants frequently take the leadership role in cross-functional teams since financial impact is the driving force in almost all business decisions.

Professional Associations

4 Describe the role of the Institute of Management Accountants (IMA) and apply its ethical standards

The **Institute of Management Accountants (IMA)** is the professional association for management accountants in the United States. Its mission is to provide a forum for research, practice development, education, knowledge sharing, and advocacy of the highest ethical and best practices in management accounting *and* finance. The IMA also educates society about the role management accountants play in organizations. According to the IMA, about 85 to 90% of accountants work in organizations, performing the roles discussed earlier. The IMA publishes a monthly journal called *Strategic Finance* that addresses current topics of interest to management accountants and helps them keep abreast of recent techniques and trends.

The IMA also issues the **Certified Management Accountant (CMA)** certification. Over 50,000 people around the globe have become CMAs. To become a CMA, you must pass a rigorous examination, gain two years of relevant professional experience, and maintain continuing professional education. You must also have a baccalaureate degree, although the degree does *not* need to be in accounting. One nice feature of the CMA exam is that you don't have to wait until you graduate from college to take it. Thus, you can start working on valuable credentials that will earn you a higher salary even before you

graduate from college. A recent global survey conducted by the IMA revealed that, globally, CMAs earn 61% higher salaries than their non-CMA peers.

The CMA exam consists of two parts. Each part of the exam is 4 hours long and consists of 100 multiple-choice questions as well as two essay questions. As shown in the following, most of the topics on the exam are introduced in this textbook:

Part 1-Financial Reporting, Planning, Performance and Control—Financial Reporting (the financial statements, including the Statement of Cash Flows, Chapter 13); Planning, Budgeting and Forecasting (Chapters 9 and 6), Performance Management (Chapters 10 and 11); Cost Management (Chapters 2, 3, 4, 5, and 6); and Internal Controls.

Part 2-Financial Decision Making—Financial Statement Analysis (Chapter 14); Corporate Finance; Risk Management; Decision Analysis (Chapters 7 and 8); Investment Decisions (Chapter 12); and Professional Ethics (Chapter 1).

The CMA exam topics reinforce the technical skills, shown in Exhibit 1-4, that management accountants are expected to have. If you like the material in this course as well as in your finance course, you should strongly consider taking the CMA exam. You can also become a student member of the IMA for a significantly reduced annual fee, which will give you access to its job posting website as well as all of its publications. Finally, the IMA hosts an annual three-day student leadership conference at a different location in the United States each year. You can find out more about the IMA at its website: www.imanet.org.

In 2012, the **American Institute of Certified Public Accountants (AICPA)**, the world's largest association representing the accounting profession, joined forces with England's Chartered Institute of Management Accountants (CIMA) to launch a separate specialized credential geared toward members who work, or have worked, in accounting roles in business, industry, or government. The **Chartered Global Management Accountant (CGMA)** designation, which is available to qualifying AICPA and CIMA members, is meant to recognize the unique business and accounting skill set possessed by those certified public accountants (CPAs) who fill, or have filled, accounting roles within an organization, as opposed to strictly public accounting roles. The CGMA has issued a "Competency Framework" that covers many of the same technical and nontechnical skills shown in Exhibit 1-4. Currently, 36% of AICPA members work in management accounting rather than public accounting.[5] Qualification for the CGMA designation is based on examination and professional experience. You can find out more about the CGMA designation, qualifications, and benefits at www.CGMA.org.

Try It!

Throughout each chapter you will see several "Try It!" features. These features will allow you to see if you understand something you just learned about in the reading. Click the Try It! Icon to practice and get immediate feedback in the etext.

Determine whether each of the following statements is true or false:

1. Managers' three primary responsibilities are planning, directing, and controlling.
2. Management accounting is geared toward external stakeholders, such as investors and creditors.
3. Management accountants often work in cross-functional teams throughout the organization.
4. The internal audit function reports to the audit committee of the board of directors.
5. Management accountants are now more often looked upon as internal business advisors rather than "bean counters" recording historical transactions.
6. Management accountants should be technically proficient, but they don't need strong oral and written communication skills.
7. Management accountants should be proficient in Excel.
8. The AICPA (American Institute of Certified Public Accountants) issues the CMA (Certified Management Accountant) certification.

Please see page 47 for solutions.

[5] www.aicpa.org/About/Pages/About.aspx

Average Salaries of Management Accountants

The average salaries of management accountants reflect their large skill set. Naturally, salaries will vary with the accountant's level of experience, his or her specific job responsibilities, and the size and geographical location of the company. However, to give you a general idea, in 2015, the average base salary (before benefits, profit sharing, or bonuses) of *all* IMA members in the United States was $115,022, while the median base salary of IMA members in the United States with only one to five years of experience was $64,900. Those professionals in the United States with the CMA or CPA certification earned 31% more in total compensation than members with no certification, while those who held *both* the CMA and CPA certifications earned 45% more than noncertified members. You can obtain more specific salary information in the IMA's 2015 Salary Survey.[6]

Robert Half International, Inc., is another good source for salary information. Robert Half publishes a free yearly guide to average salaries for all types of finance professionals. The guide also provides information on current hiring trends. In addition, Robert Half offers a free online interactive salary calculator, which allows you to drill down to salary information by zip code, years of experience, job title, and company size. To explore salaries in the fields of accounting and finance, do a web search on the phrase, "Robert Half Salary Guide and Calculator."

ETHICS

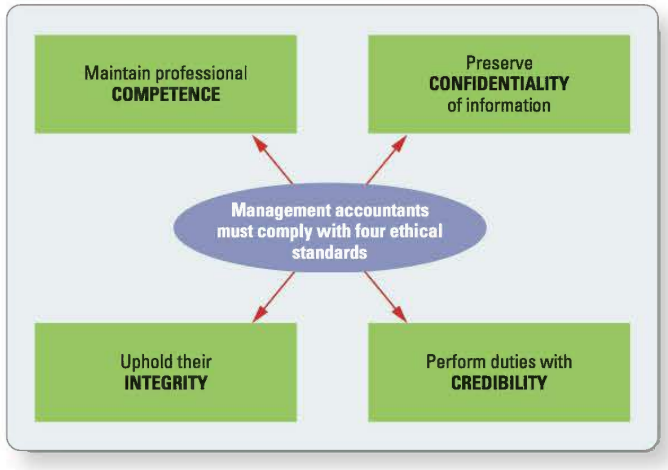
Professional Ethics

Management accountants continually face ethical challenges. The IMA has developed principles and standards to help management accountants deal with these challenges. The principles and standards remind us that society expects professional accountants to exhibit the highest level of ethical behavior. The IMA's *Statement of Ethical Professional Practice* requires management accountants to do the following:

- Maintain their professional competence.
- Preserve the confidentiality of the information they handle.
- Uphold their integrity.
- Perform their duties with credibility.

These ethical standards are summarized in Exhibit 1-6, while the full *Statement of Ethical Professional Practice* appears in Exhibit 1-7.

EXHIBIT 1-6 Summary of Ethical Standards



[6]IMA 2015 U.S. Salary Survey, May 2016. http://www.imanet.org/resources-publications/thought-leadership-new/salary-survey

EXHIBIT 1-7 IMA Statement of Ethical Professional Practice

Members of IMA shall behave ethically. A commitment to ethical professional practice includes: overarching principles that express our values, and standards that guide our conduct.

Principles

IMA's overarching ethical principles include: Honesty, Fairness, Objectivity, and Responsibility. Members shall act in accordance with these principles and shall encourage others within their organizations to adhere to them.

Standards

A member's failure to comply with the following standards may result in disciplinary action.

I. Competence

Each member has a responsibility to:

1. Maintain an appropriate level of professional expertise by continually developing knowledge and skills.
2. Perform professional duties in accordance with relevant laws, regulations, and technical standards.
3. Provide decision support information and recommendations that are accurate, clear, concise, and timely.
4. Recognize and communicate professional limitations or other constraints that would preclude responsible judgment or successful performance of an activity.

II. Confidentiality

Each member has a responsibility to:

1. Keep information confidential except when disclosure is authorized or legally required.
2. Inform all relevant parties regarding appropriate use of confidential information. Monitor subordinates' activities to ensure compliance.
3. Refrain from using confidential information for unethical or illegal advantage.

III. Integrity

Each member has a responsibility to:

1. Mitigate actual conflicts of interest. Regularly communicate with business associates to avoid apparent conflicts of interest. Advise all parties of any potential conflicts.
2. Refrain from engaging in any conduct that would prejudice carrying out duties ethically.
3. Abstain from engaging in or supporting any activity that might discredit the profession.

IV. Credibility

Each member has a responsibility to:

1. Communicate information fairly and objectively.
2. Disclose all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, analyses, or recommendations.
3. Disclose delays or deficiencies in information, timeliness, processing, or internal controls in conformance with organization policy and/or applicable law.

Institute of Management Accountants. Adapted with permission (2006).

Source: Courtesy of IMA (Institute of Management Accountants, www.imanet.org). Adapted with permission.

To resolve ethical dilemmas, the IMA suggests that management accountants first follow their company's established policies for reporting unethical behavior. If the conflict is not resolved through the company's procedures, the management accountant should:

- Discuss the unethical situation with the immediate supervisor unless the supervisor is involved in the unethical situation. If so, notify the supervisor at the next higher managerial level. If the immediate supervisor involved is the CEO, notify the audit committee or board of directors.
- Discuss the unethical situation with an objective advisor. The IMA offers a confidential "Ethics Hotline" to its members. Members may call the hotline and discuss their ethical dilemma. The ethics counselor will not provide a specific resolution but will clarify how the dilemma relates to the IMA's *Statement of Ethical Professional Practice* shown in Exhibit 1-7.
- Consult an attorney regarding legal obligations and rights.

Examples of Ethical Dilemmas

Because professional ethical behavior is so critical, we have included short exercises and cases related to ethical behavior in each chapter of the book. An ethics icon will mark each of these exercises so that they are readily identifiable to you and your instructor.

Unfortunately, the ethical path is not always clear. You may want to act ethically and do the right thing, but the consequences can make it difficult to decide what to do. Let's consider several ethical dilemmas in light of the IMA *Statement of Ethical Professional Practice*.

Dilemma #1

> Sarah Baker is examining the expense reports of her staff, who counted inventory at Top-Flight's warehouses in Arizona. She discovers that Mike Flinders has claimed but not included hotel receipts for over $1,000 of accommodation expenses. Other staff, who also claimed $1,000, did attach hotel receipts. When asked about the receipts, Mike admits that he stayed with an old friend, not in the hotel, but he believes that he deserves the money he saved. After all, the company would have paid his hotel bill.

By asking to be reimbursed for hotel expenses he did not incur, Flinders violated the IMA's integrity standards (conflict of interest in which he tried to enrich himself at the company's expense). Because Baker discovered the inflated expense report, she would not be fulfilling her ethical responsibilities of integrity and credibility if she allowed the reimbursement.

Dilemma #2

> As the accountant of Entreé Computer, you are aware of your company's weak financial condition. Entreé is close to signing a lucrative contract that should ensure its future success. To do so, the controller states that the company must report a profit this year (ending December 31). He suggests, "Two customers have placed orders that are really not supposed to be shipped until early January. Ask production to fill and ship those orders on December 31 so we can record them in this year's sales."

The resolution of this dilemma is less clear-cut. Many people believe that following the controller's suggestion to manipulate the company's income would violate the standards of competence, integrity, and credibility. Others would argue that because Entreé Computer already has the customer orders, shipping the goods and recording the sale in December is still ethical behavior. In this situation, you might discuss the available alternatives with the next managerial level or the IMA ethics hotline counselor.

Dilemma #3

> As a new accounting staff member at Central City Hospital, your supervisor has asked you to prepare the yearly Medicare Cost Report, which the government uses to determine its reimbursement to the hospital for serving Medicare patients. The report requires specialized knowledge that you don't believe you possess. Your supervisor is busy planning for the coming year and cannot offer much guidance while you prepare the report.

This situation is not as rare as you might think. You may be asked to perform tasks that you don't feel qualified to perform. The competence standard requires you to perform professional duties in accordance with laws, regulations, and technical standards; but laws and regulations are always changing. For this reason, the competence standard also requires you to continually develop knowledge and skills. CPAs and CMAs are required to complete annual continuing professional education (about 40 hours per year) to fulfill this responsibility. However, even continuing professional education courses will not cover every situation you may encounter.

In the Medicare cost report situation, advise your supervisor that you currently lack the knowledge required to complete the Medicare report. By doing so, you are complying

with the competence standard that requires you to recognize and communicate any limitations that would preclude you from fulfilling an activity. You should ask for training on the report preparation and supervision by someone experienced in preparing the report. If the supervisor denies your requests, you should ask him or her to reassign the Medicare report to a qualified staff member.

Dilemma #4

> Your company is negotiating a large multiyear sales contract that, if won, would substantially increase the company's future earnings. At a dinner party over the weekend, your friends ask you how you like your job and the company you work for. In your enthusiasm, you tell them not only about your responsibilities at work, but also about the contract negotiations. As soon as the words pop out of your mouth, you worry that you've said too much.

This situation is difficult to avoid. You may be so excited about your job and the company you work for that information unintentionally "slips out" during casual conversation with friends and family. The confidentiality standard requires you to refrain from disclosing information or using confidential information for unethical or illegal advantage. Was the contract negotiation confidential? If so, would your friends invest in company stock in hopes that the negotiations increase stock prices? Or were the negotiations public knowledge in the financial community? If so, your friends would gain no illegal advantage from the information. Recent cases in the news remind us that insider trading (use of inside knowledge for illegal gain) has serious consequences. Even seemingly mundane information about company operations could give competitors an advantage. Therefore, it's best to disclose only information that is meant for public consumption.

Why is this important?

"At the **root** of all business relationships is **trust**. Would you put your **money** in a bank that you didn't trust, invest in a company you knew was '**cooking the books**,' or lend money to someone you thought would never pay you back? As a **manager**, your trust in the other party's **ethical** behavior, and vice versa, will be a vital component of the business **decisions** you make."

Unethical Versus Illegal Behavior

Finally, is there a difference between unethical and illegal behavior? Not all unethical behavior is illegal, but all illegal behavior is unethical. For example, consider the competence standard. The competence standard states that management accountants have a responsibility to provide decision support information that is accurate, clear, concise, and timely. Failure to follow this standard is unethical but in most cases not illegal. Now, consider the integrity standard. It states that management accountants must abstain from any activity that might discredit the profession. A management accountant who commits an illegal act is violating this ethical standard. In other words, ethical behavior encompasses more than simply following the law. The IMA's ethical principles include honesty, fairness, objectivity, and responsibility—principles that are much broader than what is codified in the law.

Decision Guidelines

Managerial Accounting and Management Accountants

Starbucks had to consider the following in designing its managerial accounting system.

Decision	Guidelines
What is the primary purpose and focus of managerial accounting?	Managerial accounting provides information that helps managers plan, direct, and control operations. By focusing on *relevant* information, managerial accounting assists managers in formulating and implementing the organization's strategy and making good business decisions.
What should managers take into consideration when designing managerial accounting systems?	Managers need to weigh the costs of the system (for example, collecting and analyzing data) with the benefits that are expected from using the information to make better decisions. Managers must carefully consider the behavioral effects of the system since employees tend to focus on those aspects of performance that are measured.
Where should management accountants be placed within the organizational structure?	In the past, most management accountants worked in accounting departments. Now, over 50% of management accountants work on cross-functional teams across the organization, where they serve in an advisory role.
What skills should management accountants possess?	Because of their expanding role within the organization, management accountants need both technical skills (such as managerial and financial accounting knowledge and technology skills) and nontechnical skills (such as ethics, communication, critical thinking, and leadership).
What professional associations advocate for management accountants in the United States?	The Institute of Management Accountants (IMA) is the premier organization advocating strictly for the advancement of the management accounting profession. The IMA also issues the CMA certification. In addition, the American Institute of Certified Public Accountants (AICPA) has launched a specialized credential (the CGMA) for CPAs who have experience in industry, business, and government.
By what ethical principles and standards should management accountants abide?	The IMA's overarching ethical *principles* include the following: • Honesty • Objectivity • Fairness • Responsibility The IMA's ethical *standards* include the following: • Competence • Integrity • Confidentiality • Credibility

SUMMARY PROBLEM 1

Requirements

1. Each of the following statements describes a responsibility of management. Match each statement to the management responsibility being fulfilled.

Statement	Management Responsibility
1. Identifying alternative courses of action and choosing among them	**a.** Planning
2. Running the company on a day-to-day basis	**b.** Decision making
3. Determining whether the company's units are operating according to plan	**c.** Directing
4. Setting goals and objectives for the company and determining strategies to achieve them	**d.** Controlling

2. Are the following statements more descriptive of managerial accounting or financial accounting information?
   a. Describes historical transactions with external parties
   b. Is not required by any authoritative body, such as the SEC
   c. Reports on the company's subunits, such as products, geographical areas, and departments
   d. Is intended to be used by creditors and investors
   e. Is formatted in accordance with GAAP
3. Each of the following statements paraphrases an ethical responsibility. Match each statement to the standard of ethical professional practice being fulfilled. Each standard may be used more than once or not at all.

Responsibility	Standard of Ethical Professional Practice
1. Do not disclose company information unless authorized to do so.	**a.** Competence
2. Continue to develop skills and knowledge.	**b.** Confidentiality
3. Don't bias the information and reports presented to management.	**c.** Integrity
4. If you do not have the skills to complete a task correctly, do not pretend that you do.	**d.** Credibility
5. Avoid actual *and* apparent conflicts of interest.	

SOLUTIONS

Requirement 1

1. (b) Decision making
2. (c) Directing
3. (d) Controlling
4. (a) Planning

Requirement 2

a. Financial accounting
b. Managerial accounting
c. Managerial accounting
d. Financial accounting
e. Financial accounting

Requirement 3

1. (b) Confidentiality
2. (a) Competence
3. (d) Credibility
4. (a) Competence
5. (c) Integrity

What Business Trends and Regulations Affect Management Accounting?

Business trends and regulations are continually changing. To remain competitive, companies need to be nimble and adaptable. In this section, we'll describe some of the business trends and regulations that are significantly affecting management accounting.

Big Data, Data Analytics, and Critical Thinking

5 Discuss the business trends and regulations affecting management accounting

The collection of data from sensors, social media, GPS signals, texts, pictures, customer reward cards, and so forth is increasing at an unprecedented rate. In fact, over 90% of the world's data has been created in the last two years.[7] Big, unstructured data, coupled with traditional business transaction data, are changing the ways in which companies operate. Although the power of much of this data still remains untapped, companies are using data visualization software, such as Tableau, and predictive modeling to become more cost-efficient, to better target their sales markets, to uncover fraud, and to innovate.

For business transaction data, many small businesses use ready-to-use accounting software packages, such as QuickBooks or Sage 50, to track their costs and to develop the information that owners and managers need to run the business. But large companies use **enterprise resource planning (ERP)** systems that can integrate all of a company's worldwide functions, departments, and data. ERP systems such as SAP and Oracle gather company data into a centralized data warehouse. The system feeds the data into software for all of the company's business activities, from budgeting and purchasing to production and customer service.

Advantages of ERP systems include the following:

- Companies streamline their operations before mapping them into ERP software. Streamlining operations saves money.
- ERP helps companies respond quickly to changes. A change in sales instantly ripples through the ERP's purchases, production, shipping, and accounting systems.
- An ERP system can replace hundreds of separate software systems, such as different software in different regions, or different payroll, shipping, and production software.

Gone are the days when decisions are made based on gut feelings. Data-driven decision making is here to stay. What can you do to prepare yourself for a data-driven business career? Data are only data, unless they are turned into useful information. The way to turn big data into information is to use critical thinking skills in conjunction with technological skills, such as competency in Excel, SAP, and Tableau. As mentioned earlier in the chapter, management accountants are expected to possess both technical *and* critical thinking skills. In other words, data cannot stand on their own; they require analysis and interpretation if they are to be of use to management.

Critical Thinking

You will need to use critical thinking throughout this course and throughout your career. But what does critical thinking really entail? **Critical thinking** can be described as improving the quality of thought by skillfully analyzing, assessing, and reconstructing it.[8] Critical thinking can be improved by asking yourself the following series of questions about any issue or problem you encounter:[9]

1. What is the purpose, goal, or objective? In other words, what am I trying to accomplish?
2. What is the specific question I'm trying to address? The question will guide your thought process.
3. What data will I need to answer the question? With the sheer magnitude of data available, you'll need to hone in solely on the data that will help you answer the question at hand.

[7] www-01.ibm.com/software/data/bigdata/what-is-big-data.html

[8] Criticalthinking.org

[9] www.criticalthinking.org/ctmodel/logic-model1.htm

4. What concepts am I using, and what assumptions might I be taking for granted? Make sure you clearly identify the concepts and assumptions you are using, since a change in assumption might impact your conclusions.
5. What conclusions am I coming to, and are my inferences logical? *Always* check for logic.
6. What are the implications and consequences of these conclusions? All decisions have repercussions. Think ahead to what the outcome might be.
7. What is my point of view or reference point through which I have viewed the problem? Could I look at the problem from another equally valid point of view? Recognize that your point of view, which is the lens through which you view an issue, might be only one of several equally valid viewpoints.

Often in business, school, and life, you may be faced with problems you don't feel you know how to attack. By asking yourself the series of questions listed above, you can put a thoughtful, intellectual framework around the problem that will help guide your journey toward a solution.

STOP & THINK

Companies are constantly faced with decisions about investing in technological innovations that could potentially save money. While Chapter 12 discusses investment decisions in more detail, we'll consider a simple one-year cost-benefit analysis here. Faced with rising pressure for a $15 per hour minimum wage rate, the fast-food industry is currently exploring the possible use of robotics for order-taking and food preparation tasks. Assume the following facts:

1. By investing in one robotic arm, a fast-food restaurant could potentially save $15 per hour plus 7.65% payroll tax. While the tasks performed by a human associate are more flexible and adaptable than those performed by a robot, assume the robot would replace 10 hours of human labor, 365 days per year.
2. The robotic arm is estimated to cost $35,000 plus $5,000 for installation. While the equipment itself may be in workable condition for up to five years, the company is viewing its implementation as a one-year experiment.
3. The annual cost of running the robotic arm, including utilities and servicing, is expected to be $1,500.

Perform a cost-benefit analysis for the first year of implementation to determine whether the robotic arm would be a financially viable investment if the minimum wage were to be raised to $15 per hour.

Answer:

	A	B	C
1	**Cost-Benefit Analysis**		**Total**
2	***Expected benefits (cost savings):***		
3	Wages: $15 per hour × 10 hours per day × 365 days per year	$ 54,750	
4	Payroll taxes: 7.65% of gross wages	4,188	
5	*Total expected benefits*		$ 58,938
6	***Expected costs:***		
7	Robotic arm and installation	$ 40,000	
8	Cost of operating and servicing	1,500	
9	*Total expected costs*		41,500
10	**Net expected benefit in first year**		$ 17,438
11			

Based on this one-year cost-benefit analysis, the fast-food restaurant would expect to benefit from investing in the robotic technology. This analysis is based on several key assumptions (hours of labor replaced, hourly wage rate, and equipment fully expensed in one year). As with most decisions, the projected financial impact would vary under different assumptions.

Shifting Economy

The U.S. economy is becoming a "knowledge economy" in which more and more people are being employed for their intellectual capital than for their ability to provide manual labor in agricultural and manufacturing roles. Outside of government, more people are now employed in the service sector of the U.S. economy (77 million) than in retail and wholesale merchandising (21 million); manufacturing, construction, and mining (19 million); and agriculture (2 million) combined.[10] Service companies provide health care, communication, transportation, banking, professional consulting, education, hospitality and leisure activities, and other important benefits to society. The critical thinking framework outlined earlier highlights the importance of these skills to knowledge workers in the new economy.

Many managerial accounting practices were first developed to meet the needs of manufacturers during the industrial age of the early twentieth century. However, since the U.S. economy has shifted away from manufacturing, managerial accounting has *expanded* to meet the needs of merchandising companies and service firms as well as manufacturers. For example, consider the following:

1. Manufacturers still need to know how much each unit of their product costs to produce. In addition to using this information for inventory valuation and pricing decisions, manufacturers also use cost information to determine whether they should outsource production to another company or to an overseas location, or even whether they should reshore (relocate) it back in the United States.
2. Because such a large percentage of goods are now produced overseas rather than domestically, retailers must now consider foreign currency translation, shipping costs, and import tariffs when determining the cost of imported products. Managers of merchandising companies also need cost and revenue information about operating their brick and mortar locations as well as their online sales platforms. All of this information helps managers make more strategic and profitable decisions.
3. Service companies also need cost information to make decisions. For example, health care providers need to know the cost of performing procedures and running lab tests; hotel managers need to know the cost of providing rooms and amenities to guests; cell phone carriers and Internet service providers need to know the cost of providing texts, data, and cloud computing services; and entrepreneurs that develop apps, such as Uber and Airbnb, need to have a good understanding of their cost structure and how they will monetize the site. No matter what the service, cost information helps managers make vital business decisions, such as pricing decisions, marketing decisions, decisions to invest in new technology, and market expansion decisions.

Globalization

The barriers to international trade have fallen over the past decades, allowing foreign companies to compete with domestic companies. Firms that are not highly efficient, innovative, and responsive to business trends will vanish from the global market. However, global markets also provide highly competitive domestic companies with great opportunities for growth.

Globalization has several implications for managerial accounting:

- Stiffer competition means managers need more accurate and timely information to make wise business decisions. Companies can no longer afford to make decisions by the "seat of their pants." Detailed, accurate, and real-time cost information has become a necessity for survival.
- Companies must decide whether to expand sales and/or production into foreign countries. To do so, managers need comprehensive estimates of the costs of running international operations and the benefits that can be reaped. They also need to be aware of regulations and laws in other countries that could impact their operations. For example, England

[10] www.bls.gov/emp/ep_table_201.htm

and Europe tend to have much stricter environmental protection laws than the United States.

- Companies can learn new management techniques by observing their international competitors. For example, lean thinking, which is discussed next, was developed in Japan by Toyota. Lean practice has now been adopted, expanded upon, and refined by U.S. companies.

Why is this important?

"To survive in the global marketplace, businesses must quickly respond to customer demand, providing high-quality products and services at a reasonable price."

Lean Thinking and Focus on Quality

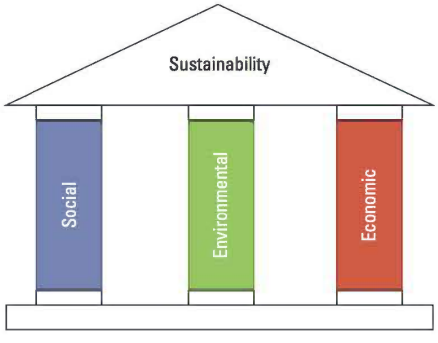
To be competitive in the global market, companies need to be acutely aware of their costs, customer response time, and quality. Market share goes to any company that can do the same thing cheaper, faster, or better. To address these issues, many companies espouse **lean thinking**, which is both a philosophy and a business strategy of operating without waste. The more *wasteful activities* that can be eliminated, the lower the company's costs. The more *wasted time* that can be removed between receiving an order and delivering the product or service, the faster the customer response time. And the more *defects* that can be prevented or removed from the process, the less costly the production process and the higher the customer satisfaction. **Six Sigma**—the goal of producing near perfection (with less than 3.4 defects per million opportunities)—often goes hand in hand with lean thinking. In the second half of Chapter 4, we'll look at some of the unique characteristics of lean operations which companies in every sector of the economy are using with great success. We'll also show how companies analyze the costs associated with their current level of quality as well as make decisions about quality improvement initiatives.

Sustainability, Social Responsibility, and the Triple Bottom Line

Recent years have witnessed an increasing awareness and growing interest in sustainability and social responsibility by both consumers and corporations. The dictionary definition of **sustainability** refers to the ability of a system to maintain its own viability, endure without giving way, or use resources so that they are not depleted or permanently damaged.[11] In other words, it's the ability of a system to operate in such a manner that it is able to continue indefinitely. The United Nations has defined sustainability as "the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs."[12] Others have defined sustainability as an expansion of the golden rule: "Do unto others, including future generations, as you would have done unto you."[13]

As pictured in Exhibit 1-8, sustainability has three pillars: environmental, social, and economic. A company will be viable in the long run only if all three of these factors are

EXHIBIT 1-8 The Three Pillars of Sustainability



[11]www.merriam-webster.com; http://dictionary.reference.com

[12]1987 World Commission on Environment and Development, www.un.org/documents/ga/res/42/ares42-187.htm

[13]Gary Langenwalter, "Business Sustainability: Keeping Lean but with More Green for the Company's Long Haul," 2010, AICPA, Lewisville, Texas.

considered when making business decisions. For example, a company will not be able to survive in the long run if the natural resources (e.g., air, water, soil, minerals, plants, fuel supplies, etc.) or people (e.g., suppliers, customers, employees, communities) it relies on are put in jeopardy. Thus, sustainability is also viewed as the intersection of all three factors, as pictured in Exhibit 1-9. As a result, many companies are beginning to adhere to the notion of a triple bottom line. The **triple bottom line** recognizes that a company's performance should be viewed not only in terms of its ability to generate economic profits for its owners, as has traditionally been the case, but also in terms of its impact on people and the planet.

EXHIBIT 1-9 Sustainability as the Intersection of Three Factors

To move toward sustainability, companies are introducing "green initiatives"—ways of doing business that have fewer negative consequences for the earth's resources. They are innovating new products and manufacturing processes that use recycled materials to reduce the amount of waste going to landfills. The drive is toward a circular economy, where nothing goes to waste. Companies have also recognized the need to be socially responsible—carefully considering how their business affects employees, consumers, citizens, and entire communities. Many companies have introduced means of giving back to their local communities by supporting local schools, employee volunteerism, and charities. Most of the leading companies in the world are now issuing Corporate Social Responsibility (CSR) reports through which they communicate their social and environmental impacts. Businesses are now viewing sustainability and social responsibility as opportunities for innovation and business development. These initiatives not only allow a company to "do the right thing," but they also can lead to economic profits by increasing demand for a company's products and services and reducing costs.

In every chapter of this text, you will see a special section illustrating how management accounting can help companies pursue sustainable, socially responsible business practices. These sections will be marked with a green recycle symbol and will also point you to corresponding homework problems. In addition, Chapter 15 is devoted to sustainability, examining the reasons sustainability makes good business sense and the framework and methods companies use to measure and report on their social and environmental impact.

Integrated Reporting

The corporate reporting landscape is constantly changing. One of the most notable recent global movements is toward integrated reporting. According to the International Integrated Reporting Committee (IIRC), **integrated reporting** (symbolized as < IR >) "is a process that results in communication, most visibly a periodic 'integrated report,' about value creation over time. An integrated report is a concise communication about how an organization's strategy, governance, performance and prospects lead to the creation of value over the short, medium and long term."[14] As such, it is a

[14]www.theiirc.org

broader, more holistic, balanced, and future-looking report than traditional financial statements, which tend to focus on short-term financial measures of past performance. An integrated report essentially describes and measures all material elements of value creation, not just those relating to financial capital. In addition to financial capital, the report considers manufactured, intellectual, human, social, and natural (environmental) capital, which are often more difficult for investors to access through traditional financial reporting.

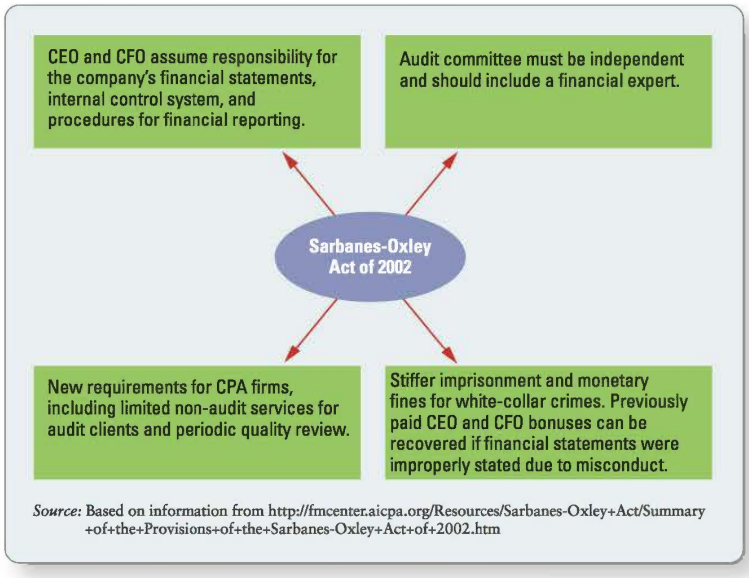
Integrated reporting, which is still in its infancy, is being driven by businesses and institutional investors who want more information for better decision making than that offered by traditional financial statements. Several well-known companies, including Microsoft, Prudential, and Coca-Cola, as well as the Big Four accounting firms, the Chartered Financial Analyst (CFA) Institute, and Goldman Sachs, are working closely with the IIRC to help further develop and refine the < IR > reporting framework. You may keep abreast of current developments in < IR > by visiting www.theiirc.org.

The Sarbanes-Oxley Act of 2002

As a result of corporate accounting scandals, such as those at Enron and WorldCom, the U.S. Congress enacted the **Sarbanes-Oxley Act of 2002 (SOX)**. The purpose of SOX is to restore trust in publicly traded corporations, their management, their financial statements, and their auditors. SOX enhances internal control and financial reporting requirements and establishes new regulatory requirements for publicly traded companies and their independent auditors. Publicly traded companies have spent millions of dollars upgrading their internal controls and accounting systems to comply with SOX regulations.

As shown in Exhibit 1-10, SOX requires the company's CEO and CFO to assume responsibility for their company's financial statements and disclosures. The CEO and CFO must certify that the financial statements and disclosures fairly present, in all material respects, the operations and financial condition of the company. Additionally, they must accept responsibility for establishing and maintaining an adequate internal control structure and procedures for financial reporting. The company must have its internal controls and financial reporting procedures assessed annually.

EXHIBIT 1-10 Some Important Features of SOX



Source: Based on information from http://fmcenter.aicpa.org/Resources/Sarbanes-Oxley+Act/Summary+of+the+Provisions+of+the+Sarbanes-Oxley+Act+of+2002.htm

Why is this important?

"SOX puts more pressure on companies, their managers, and their auditors to ensure that investors get financial information that fairly reflects the company's operations."

SOX also requires audit committee members to be independent; that is, they may not receive any consulting or advisory fees from the company other than for their service on the board of directors. In addition, at least one of the members should be a financial expert. The audit committee oversees not only the internal audit function but also the company's audit by independent CPAs.

To ensure that CPA firms maintain independence from their client company, SOX does not allow CPA firms to provide certain nonaudit services (such as bookkeeping and financial information systems design) to companies during the same period of time in which they are providing audit services. If a company wants to obtain such services from a CPA firm, it must hire a different firm to do the nonaudit work. Tax services may be provided by the same CPA firm if pre-approved by the audit committee. The audit partner must rotate off the audit engagement every five years, and the audit firm must undergo quality reviews every one to three years.

SOX also increases the penalties for white-collar crimes such as corporate fraud. These penalties include both monetary fines and substantial imprisonment. For example, knowingly destroying or creating documents to "impede, obstruct, or influence" any federal investigation can result in up to 20 years of imprisonment.[15]

SOX also contains a "clawback" provision in which previously paid CEO's and CFO's incentive-based compensation can be recovered if the financial statements were misstated due to misconduct. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 further strengthens the clawback rules, such that firms *must* recover all incentive compensation paid to *any* current or former executive, in the three years preceding the restatement, if that compensation would not have been paid under the restated financial statements. In other words, executives will not be allowed to profit from misstated financial statements, even if the misstatement was not due to misconduct.[16]

Since its enactment in 2002, SOX has significantly affected the internal operations of publicly traded corporations and their auditors. SOX will continue to play a major role in corporate management and the auditing profession.

Try It!

Determine whether each of the following statements is true or false:

1. The Sarbanes-Oxley Act of 2002 (SOX) imposes stricter requirements for financial reporting and internal controls and stricter consequences for those who engage in financial statement misconduct and other white-collar crimes.
2. Most business decisions are now based on gut feelings and hunches, rather than being data-driven.
3. Critical thinking can be improved by asking yourself a series of questions about any issue or problem you encounter. These questions, for example, include: What is the objective? What data will I need? What assumptions am I making? Is my conclusion logical?
4. The triple bottom line assesses company performance on three factors: people (social impact), planet (environmental impact), and profit (economic impact).
5. Manufacturing makes up the largest sector of the U.S. economy.
6. The globalization of business has little bearing on management accounting.
7. Computer systems that integrate all of a company's worldwide functions into one database are known as Integrated Worldwide Systems (IWSs).
8. Lean thinking focuses on eliminating waste from operations.

Please see page 47 for solutions.

[15]Go to www.AICPA.org to learn more about SOX.

[16]http://www.pwc.com/us/en/cfodirect/publications/in-brief/sec-dodd-frank-clawback-rule-954.html

Decision Guidelines

The Changing Business and Regulatory Environment

Successful companies have to respond to changes in the business and regulatory environment. Managers have many decisions to make as they adapt to current business trends.

Decision	Guidelines
What impact will big data and data analytics have on our organization?	The abundance of data allows managers to make data-driven decisions, rather than decisions that are made on a hunch. However, critical thinking is needed to turn data into useful information.
How can we use critical thinking to help solve business issues?	The following steps provide a framework for critically examining any issue or problem: **1.** What is the purpose, goal, or objective? In other words, what am I trying to accomplish? **2.** What is the specific question I'm trying to address? The question will guide your thought process. **3.** What data will I need to answer the question? With the sheer magnitude of data available, you'll need to hone in solely on the data that will help you answer the question at hand. **4.** What concepts am I using, and what assumptions might I be taking for granted? Make sure you clearly identify the concepts and assumptions you are using, since a change in assumption might impact your conclusions. **5.** What conclusions am I coming to, and are my inferences logical? *Always* check for logic. **6.** What are the implications and consequences of these conclusions? All decisions have repercussions. Think ahead to what the outcome might be. **7.** What is my point of view or reference point through which I have viewed the problem? Could I look at the problem from another equally valid point of view? Recognize that your point of view, which is the lens through which you view an issue, might be only one of several equally valid viewpoints.
Is management accounting useful in the growing knowledge economy, or is it only applicable to manufacturers?	Managerial accounting has expanded to meet the needs of companies in all sectors of the economy. Managers in service industries need detailed cost and revenue data to plan, control, and direct operations just as much as manufacturers do.
How do companies compete in a global economy?	The globalization of business means more competition but more opportunity as well. To remain competitive, companies must constantly focus on costs, customer response times, and quality. Companies use lean thinking and Six Sigma to reduce wasted resources, reduce wasted time, and improve quality.
How does the concept of sustainability affect business?	Businesses will be viable in the long run only if they take a sustainable approach to operations, carefully considering the impact of the company's operations on people and the planet as well as on profit. Thus, company performance is often evaluated using a triple-bottom-line approach. Businesses are viewing sustainability as an opportunity to "do the right thing" while simultaneously increasing the company's value through innovation, risk minimization, and cost reduction.
Which companies need to comply with SOX?	Publicly traded companies must comply with SOX. To better ensure the legitimacy of companies' financial information, many of the law's specific requirements focus on implementing adequate internal controls, employing better financial reporting procedures, and maintaining independence from the company's auditors.

SUMMARY PROBLEM 2

EZ-Rider Motorcycles is considering whether to expand into Germany. If gas prices increase, the company expects more interest in fuel-efficient transportation such as motorcycles. As a result, the company is considering setting up a motorcycle assembly plant on the outskirts of Berlin.

EZ-Rider Motorcycles estimates that it will cost $850,000 to convert an existing building to motorcycle production. Workers will need training, at a total cost of $65,000. The additional cost to organize the business and to establish relationships is estimated to be $150,000.

The CEO believes the company can earn profits from this expansion (before considering the costs in the preceding paragraph) of $1,624,000.

Requirement

Use cost-benefit analysis to determine whether EZ-Rider should expand into Germany.

▪ SOLUTION

The following cost-benefit analysis indicates that the company should expand into Germany because expected benefits exceed expected costs:

	A	B	C	D
1	**Cost-Benefit Analysis**		**Total**	
2	***Expected Benefits:***			
3	Expected profits from increase in sales		$ 1,624,000	
4	***Expected Costs:***			
5	Conversion of building	$ 850,000		
6	Workforce training	65,000		
7	Organizing and establishing relationships	150,000		
8	Total expected costs		1,065,000	
9	**Net expected benefit**		$ 559,000	
10				

END OF CHAPTER

Learning Objectives

- 1 Identify managers' three primary responsibilities
- 2 Distinguish financial accounting from managerial accounting
- 3 Describe the roles and skills required of management accountants within the organization
- 4 Describe the role of the Institute of Management Accountants (IMA) and apply its ethical standards
- 5 Discuss the business trends and regulations affecting management accounting

Accounting Vocabulary

American Institute of Certified Public Accountants (AICPA). (p. 11) The world's largest association representing the accounting profession; together with the Chartered Institute of Management Accountants (CIMA), offers the Chartered Global Management Accountant (CGMA) designation.

Audit Committee. (p. 10) A subcommittee of the board of directors that is responsible for overseeing both the internal audit function and the annual financial statement audit by independent CPAs.

Board of Directors. (p. 9) The body elected by shareholders to oversee the company.

Budget. (p. 3) Quantitative expression of a plan that helps managers coordinate and implement the plan.

Certified Management Accountant (CMA). (p. 10) A professional certification issued by the IMA to designate expertise in the areas of managerial accounting, economics, and business finance.

Chartered Global Management Accountant (CGMA). (p. 11) A designation available to qualifying American Institute of Certified Public Accountants (AICPA) members that is meant to recognize the unique business and accounting skill set possessed by those CPAs who work, or have worked, in business, industry, or government.

Chief Executive Officer (CEO). (p. 9) The position hired by the board of directors to oversee the company on a daily basis.

Chief Financial Officer (CFO). (p. 10) The position responsible for all of the company's financial concerns.

Chief Operating Officer (COO). (p. 10) The position responsible for overseeing the company's operations.

Controller. (p. 10) The position responsible for general financial accounting, managerial accounting, and tax reporting.

Controlling. (p. 3) One of management's primary responsibilities; evaluating the results of business operations against the plan and making adjustments to keep the company pressing toward its goals.

Cost-Benefit Analysis. (p. 19) Weighing costs against benefits to help make decisions.

Critical Thinking. (p. 18) Improving the quality of thought by skillfully analyzing, assessing, and reconstructing it.

Cross-Functional Teams. (p. 10) Corporate teams whose members represent various functions of the organization, such as R&D, design, production, marketing, distribution, and customer service.

Decision Making. (p. 2) Identifying possible courses of action and choosing among them.

Directing. (p. 3) One of management's primary responsibilities; running the company on a day-to-day basis.

Enterprise Resource Planning (ERP). (p. 18) Software systems that can integrate all of a company's worldwide functions, departments, and data into a single system.

Institute of Management Accountants (IMA). (p. 10) The professional organization that promotes the advancement of the management accounting profession.

Integrated Reporting. (p. 22) A process resulting in a report that describes how a company is creating value over time using financial, manufactured, intellectual, human, social, and natural capital.

Internal Audit Function. (p. 10) The corporate function charged with assessing the effectiveness of the company's internal controls and risk management policies.

Lean Thinking. (p. 21) A philosophy and business strategy of operating without waste.

Management Accounting (p. 2) A profession that involves partnering in management decision making, devising planning and performance management systems, and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy.

Planning. (p. 3) One of management's primary responsibilities: setting goals and objectives for the company and deciding how to achieve them.

Sarbanes-Oxley Act of 2002 (SOX). (p. 23) A congressional act that enhances internal control and financial reporting requirements and establishes new regulatory requirements for publicly traded companies and their independent auditors.

Six Sigma. (p. 21) The goal of producing near perfection with less than 3.4 defects per million opportunities.

Sustainability. (p. 21) The ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Treasurer. (p. 10) The position responsible for raising the firm's capital and investing funds.

Triple Bottom Line. (p. 22) Evaluating a company's performance not only by its ability to generate economic profits, but also by its impact on people and on the planet.

MyAccountingLab

Go to http://myaccountinglab.com/ for the following Quick Check, Short Exercises, Exercises, and Problems. They are available with immediate grading, explanations of correct and incorrect answers, and interactive media that acts as your own online tutor.

Quick Check

1. *(Learning Objective 1)* Which of the following management responsibilities often involves evaluating the results of operations against the budget?
   a. Planning
   b. Directing
   c. Controlling
   d. None of the above

2. *(Learning Objective 2)* Managerial accounting differs from financial accounting in that managerial accounting
   a. tends to report on the company as a whole rather than segments of the company.
   b. emphasizes data relevance over data objectivity.
   c. is used primarily by external decision makers.
   d. is required by Generally Accepted Accounting Principles (GAAP).

3. *(Learning Objective 3)* Which of the following corporate positions is responsible for general financial accounting, managerial accounting, and tax reporting?
   a. Controller
   b. Treasurer
   c. Internal audit
   d. Chief operating officer (COO)

4. *(Learning Objective 3)* Of the following skills, which are needed by today's management accountants?
   a. Strategic thinking
   b. Cost management
   c. Decision analysis
   d. All of the above

5. *(Learning Objective 4)* Which of the following organizations is the professional association specifically for management accountants?
   a. FASB
   b. AICPA
   c. IMA
   d. IFRS

6. *(Learning Objective 4)* Which of the following professional standards requires management accountants to continually develop their knowledge and skills?
   a. Competence
   b. Confidentiality
   c. Integrity
   d. Credibility

7. *(Learning Objective 4)* Which of the following professional standards requires management accountants to not disclose private information about their organizations?
   a. Competence
   b. Confidentiality
   c. Integrity
   d. Credibility

8. *(Learning Objective 5)* Which of the following requires the company's CEO and CFO to assume responsibility for the company's financial statements and disclosures?
   a. Sarbanes-Oxley Act of 2002 (SOX)
   b. Institute of Management Accountants (IMA)
   c. Enterprise Resource Planning (ERP)
   d. Lean operations

9. *(Learning Objective 5)* Which of the following is *false*?
   a. Globalization has increased the necessity for more detailed and accurate cost information.
   b. The triple bottom line focuses on three items: net income, net assets, and return on investment.
   c. ERP systems integrate information from all company functions into a centralized data warehouse.
   d. Lean operations is a philosophy and business strategy of operating without waste.

10. *(Learning Objective 5)* All of the following are business trends affecting management accounting **except:**
    a. shifting economy.
    b. sustainability.
    c. big data.
    d. all of the above.

Quick Check Answers

1. c 2. b 3. a 4. d 5. c 6. a 7. b 8. a 9. b 10. d

Short Exercises

S1-1 Managers' responsibilities *(Learning Objective 1)*

Categorize each of the following activities as to which management responsibility it fulfills: planning, directing, or controlling. Some activities may fulfill more than one responsibility.

a. Management decides to increase sales growth by 20% next year.
b. Management analyzes the impact of a recent advertising campaign by comparing budgeted sales to actual sales.
c. Management reviews hourly sales reports to determine the level of staffing needed to staff the customer service desk.
d. Management uses information on product costs to determine sales prices.
e. To lower production costs, management moves production to China.

S1-2 Contrast managerial and financial accounting *(Learning Objective 2)*

Managerial accounting differs from financial accounting in several areas. Specify whether each of the following characteristics relates to managerial accounting or financial accounting.

a. Reports are usually prepared quarterly and annually.
b. Information is verified by external auditors.
c. Focus is on the past.
d. Main characteristic of information is that it must be relevant.
e. Reports tend to be prepared for the parts of the organization rather than the whole organization.
f. Primary users are internal (i.e., company managers).
g. It is governed by Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS).
h. The primary characteristics of information are that it must be reliable and objective.
i. Reports are prepared as needed.
j. It is not governed by legal requirements.
k. Primary users are external (i.e., creditors, investors).
l. Focus is on the future.
m. Reporting is based mainly on the company as a whole.

S1-3 Accounting roles in the organization *(Learning Objective 3)*

The following is a list of job duties or descriptions. For each item, specify whether it would be most likely to describe the duties or responsibilities of someone working for the treasurer, the controller, or the Internal Auditing Department.

a. Check to make sure that company risk management procedures are being followed.
b. Oversee accounts payable activities.
c. Report to the audit committee of the board of directors *and* to a senior executive, such as the CFO or CEO.
d. Ensure that the company's internal controls are functioning properly.
e. Issue company stock.
f. Perform cash counts at branch offices.
g. Work with various departments in preparing operating budgets for the upcoming year.
h. Create an analysis about whether to lease or buy a delivery truck.
i. Prepare journal entries for month-end closing.
j. Calculate the cost of a product.
k. Prepare company tax returns.
l. Invest company funds.
m. Issue company bonds.

S1-4 Role of internal audit function *(Learning Objective 3)*

The following table lists several characteristics. Place a check mark next to those items that pertain directly to the internal audit function and its role within the organization.

Characteristic	Check (✓) if related to internal auditing
a. Reports directly to the audit committee	
b. Reports to treasurer or controller	
c. Is part of the Accounting Department	
d. Helps to ensure that the company's internal controls are functioning properly	
e. Performs the same function as independent certified public accountants	
f. Usually reports to a senior executive (CFO or CEO) for administrative matters	
g. External audits can be performed by the Internal Auditing Department	
h. Required by the New York Stock Exchange (NYSE) if company stock is publicly traded on the NYSE	
i. Ensures that the company achieves its profit goals	

S1-5 Classify roles within the organization *(Learning Objective 3)*

Complete the following statements with one of the terms listed here. You may use a term more than once, and some terms may not be used at all.

Audit committee	**Board of directors**	**CEO**	**CFO**
Treasurer	**Controller**	**Cross-functional teams**	**COO**

a. The CEO is hired by the _____.
b. A subcommittee of the board of directors is called the _____.
c. Raising capital and investing funds are the direct responsibilities of the _____.
d. The _____ and the _____ report to the CEO.
e. Financial accounting, managerial accounting, and tax reporting are the direct responsibilities of the _____.
f. Management accountants often work on _____.
g. The internal audit function reports to the CFO or the _____ and the _____.
h. The company's operations are the direct responsibility of the _____.

S1-6 Professional organizations and certifications *(Learning Objective 4)*

Complete the following sentences:

1. The Institute of Management Accountants (IMA) issues the _____ _____ _____ certification.
2. The certification offered by IMA focuses on _____ and _____ topics.
3. The monthly professional magazine published by the Institute of Management Accountants is called _____.
4. The certification launched in 2012 jointly by the American Institute of Certified Public Accountants (AICPA) and the Chartered Institute of Management Accountants (CIMA) is called the _____ _____ _____ _____.
5. To earn CMA certification, a candidate must have a(n) _____ degree. The CMA exam can be taken, however, before finishing this degree.

S1-7 Violations of ethical standards *(Learning Objective 4)*

ETHICS

The IMA's *Statement of Ethical Professional Practice* (Exhibit 1–7) requires management accountants to meet standards regarding the following:

- Competence
- Confidentiality
- Integrity
- Credibility

Consider the following situations. Which guidelines are violated in each situation?

a. You do not provide top managers with the detailed job descriptions they requested because you fear they may use this information to cut a position from your department.

b. You tell your sister that your company will report earnings significantly above financial analysts' estimates.

c. You failed to read the detailed specifications of a new software package that you asked your company to purchase. After it is installed, you are surprised that it is incompatible with some of your company's older accounting software.

d. You see that other employees take office supplies for personal use. As an intern, you do the same thing, assuming that this is a "perk."

e. At a financial reporting seminar, you skip the afternoon session and go sightseeing. Your company paid for the registration fee, and you are getting paid for the day.

S1-8 Identify current competitive tools *(Learning Objective 5)*

Companies are facing a great amount of change in every facet of their operations today. To remain competitive, companies must keep abreast of current developments in several areas. You recently got together with a group of friends who work for different companies. Your friends share information about their current challenges in adopting new tools or complying with new regulations. Excerpts from the conversation are presented in the following section. Tell whether each excerpt describes data analytics, Six Sigma, sustainability, the Sarbanes-Oxley Act (SOX), or enterprise resource planning (ERP) systems.

a. Jordan: My company has a new initiative at work. All employees are encouraged to recycle paper and other materials. Employees are also given one work day a year to volunteer to help local nonprofit organizations. Employees are also urged to think outside the box to find ways to reduce the company's carbon footprint. The company has also begun an internal reporting system that reports on its triple bottom line.

b. Kate: I just started a new job in the Auditing Department. My new duties include assisting in the development of testing procedures and methods for determining internal controls effectiveness. I also oversee the testing for assurance of compliance with corporate policies. I am coordinating the review of SEC filings with our external auditors. I also am responsible for preparing periodic compliance status reports for management, the audit committee, and the external auditors.

c. Yiang: My company is working to demonstrate its commitment to continuous quality improvement. We are currently undergoing an extensive audit of our quality management processes and are striving to produce with a defect level of less than 3.4 defects per million parts produced. We hope to gain a competitive advantage through this process.

d. Christopher: We have just installed a system at our company that integrates all of our company's data across all systems. We have one central data warehouse that contains information about our suppliers, our customers, our employees, and our financial information. The software retrieves information from this single data warehouse and all systems are integrated. The process of implementing this system has been very expensive and time consuming, but we are reaping the benefits of being more streamlined, of being able to respond more quickly to changes in the market, and of not having several different software systems operating independently.

e. Emma: Our company is considering whether to set up a sales division in India where we feel there is untapped market potential. However, we have to carefully consider the costs of such an expansion against the increased sales we would see from the new division.

ETHICS

S1-9 Identify ethical standards violated *(Learning Objective 4)*

For each of the situations listed, identify the primary standard from the IMA *Statement of Ethical Professional Practice* that is violated (competence, confidentiality, integrity, or credibility.) Refer to Exhibit 1–7 for the complete standard.

a. Jack, an accountant for a smartphone manufacturer, told his friends about a new model of smartphone being released by the company in the following quarter. For competitive reasons, the company keeps its models shrouded in secrecy until the release date.

b. The CFO directed that certain expenses be reclassified as assets, so that target profit could be achieved. The CFO rationalized that jobs would be saved by reaching the targeted income figures.

c. Even though Meagan's company is adopting a new ERP system that impacts the accounting system, Meagan (a management accountant) has not completed the required ERP training from the vendor.

d. Oliver provides an analysis of the profitability of a company-owned store that is managed by Oliver's best friend, Bob. Oliver neglects to include allocated fixed costs in Bob's report. If Oliver includes those allocated fixed costs, the store will show a loss and Bob's job could be in danger.

e. Yimeng, a purchasing agent for her company, received two tickets from a supplier to the upcoming Ohio State versus University of Michigan football game. These tickets sell for over $500 each.

S1-10 Define key terms *(Learning Objectives 1, 2, 3, 4, and 5)*

Complete the following statements with one of the terms listed here.

CEO	**Economic**	**Planning**
CFO	**Environmental**	**Sarbanes-Oxley Act of 2002**
Controlling	**ERP**	**Six Sigma**
Controller	**Financial accounting system**	**Social**
Critical thinking	**Integrated report**	**Sustainability**
Directing	**Internal audit**	**Treasurer**

a. The _____ is geared toward producing periodic financial statements that will be used by investors and creditors to make investment and lending decisions.

b. _____ improves the quality of thought by skillfully analyzing, assessing, and reconstructing initial thoughts.

c. The goal of producing near perfection with less than 3.4 defects per one million opportunities is called _____.

d. The _____ is the person responsible for raising the firm's capital and investing its funds.

e. The three pillars of sustainability are: _____, _____, and _____.

f. The _____ is the person responsible for general financial accounting, managerial accounting, and tax reporting.

g. The role of the _____ function is to ensure that the company's internal controls and risk management policies are functioning properly.

h. The _____ was enacted to restore trust in publicly traded corporations, their management, their financial statements, and their auditors.

i. _____ is a broad holistic report that describes all material elements of value creation, not just the financial elements.

j. _____ is the management process of evaluating the results of business operations against the plan and making adjustments to keep the company pressing toward its goals.

k. _____ is the management process of overseeing the company's day-to-day operations.

l. _____ serves the information needs of people in accounting as well as people in marketing and in the warehouse.

m. _____ is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.

n. The _____ manages the company on a daily basis.

o. _____ is the management process of setting goals and objectives for the company and determining how to achieve them.

p. Typically, the treasurer and the controller report directly to the _____.

EXERCISES Group A

E1-11A Define key terms *(Learning Objectives 1 & 2)*

Complete the following statements with one of the terms listed here. You may use a term more than once, and some terms may not be used at all.

Budget	**Creditors**	**Managerial accounting**	**Planning**
Controlling	**Financial accounting**	**Managers**	**Shareholders**

a. Information on a company's past performance is provided to external parties by _____.
b. _____ systems are chosen by comparing the costs versus the benefits of the system and are not restricted by GAAP (or International Financial Reporting Standards, IFRS, in the case of companies headquartered in many countries outside of the United States).
c. _____ systems report on various segments or business units of the company.
d. Financial accounting develops reports for external parties such as _____ and _____.
e. When managers evaluate the company's performance compared to the plan, they are performing the _____ role of management.
f. CPAs audit the _____ statements of public companies.
g. Companies must follow GAAP (or International Financial Reporting Standards, IRFS, in the case of companies headquartered in many countries outside of the United States) in their _____ systems.
h. Choosing goals and the means to achieve them is the _____ function of management.
i. Decision makers inside a company are the _____.

E1-12A Identify skills needed by management accountants *(Learning Objective 3)*

Management accountants need a wide variety of skills for their roles in organizations. These skills can be classified as either technical or nontechnical.

Requirement

For each of the following skills, indicate whether it is a technical competency or a nontechnical competency for a management accountant.

a. Planning, budgeting, and forecasting
b. Leadership
c. Financial statement analysis
d. Adaptability
e. Strategic thinking
f. Change management
g. Investment decision making
h. Cost management
i. Technology
j. Internal financial reporting
k. Collaboration
l. Process improvement
m. Performance management
n. Customer service
o. Enterprise risk management
p. Decision analysis
q. Communication
r. Ethics
s. Internal controls
t. Business acumen

E1-13A Identify users of accounting information *(Learning Objective 3)*

For each of the following users of financial accounting information and managerial accounting information, specify whether the user would primarily use financial accounting information or managerial accounting information or both.

1. Reporter from *The Wall Street Journal*
2. Regional division managers
3. Potential investors
4. Bookkeeping Department
5. Manager of the Service Department
6. Wall Street analyst
7. Division controller
8. State tax agency auditor
9. External auditor (public accounting firm)
10. Loan officer at the company's bank
11. Board of directors
12. Internal auditor
13. SEC examiner
14. Current stockholders

ETHICS

E1-14A Classify ethical responsibilities *(Learning Objective 4)*

According to the IMA's *Statement of Ethical Professional Practice* (Exhibit 1–7), management accountants should follow four standards: competence, confidentiality, integrity, and credibility. Each of these standards contains specific responsibilities. Classify each of the following responsibilities according to the standard it addresses.

Responsibility:

1. Keep information confidential except when disclosure is authorized or legally required.
2. Disclose all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, analyses, or recommendations.
3. Disclose delays or deficiencies in information, timeliness, processing, or internal controls in conformance with organization policy and/or applicable law.
4. Communicate information fairly and objectively.
5. Refrain from using confidential information for unethical or illegal advantage.
6. Inform all relevant parties regarding the appropriate use of confidential information. Monitor subordinates' activities to ensure compliance.
7. Mitigate actual conflicts of interest. Regularly communicate with business associates to avoid apparent conflicts of interest. Advise all parties of any potential conflicts.
8. Maintain an appropriate level of professional expertise by continually developing knowledge and skills.
9. Recognize and communicate professional limitations that would preclude responsible judgment or successful performance of an activity.
10. Perform professional duties in accordance with relevant laws, regulations, and technical standards.
11. Abstain from engaging in or supporting any activity that might discredit the profession.
12. Refrain from engaging in any conduct that would prejudice carrying out duties ethically.
13. Provide decision support information and recommendations that are accurate, clear, concise, and timely.

E1-15A Equipment purchase cost-benefit analysis *(Learning Objective 5)*

Faced with rising pressure for a $15 per hour minimum wage rate, the farming industry is currently exploring the possible use of robotics to replace some farm workers. The Lettuce Bot is one such robot; its job is to thin out a field of lettuce, removing the least promising buds of lettuce. By removing these weaker plants, the stronger lettuce plants have more room to grow. Assume the following facts:

1. One Lettuce Bot would do the work of 20 farm workers.
2. Each farm worker typically works 40 hours on the lettuce thinning process each year.
3. Each farm worker would earn $15 per hour plus 7.65% payroll tax.
4. The Lettuce Bot is estimated to cost $8,000 plus $500 for delivery.
5. Annual costs of operating the Lettuce Bot are expected to be $1,500.

While the Lettuce Bot itself may be in workable condition for up to five years, assume that the farm would view its implementation as a one-year experiment.

Requirement

Perform a cost-benefit analysis for the first year of implementation to determine whether the Lettuce Bot would be a financially viable investment if the minimum wage is raised to $15 per hour.

E1-16A Lean production cost-benefit analysis *(Learning Objective 5)*

McIntyre Industries manufactures iPhone case covers. Sarabeth Anderson, the CEO, is trying to decide whether to adopt a lean thinking model. She expects that adopting lean production would save $77,000 in warehousing expenses and $39,600 in spoilage costs. Adopting lean production will require several one-time up-front expenditures: $25,000 for an employee training program, $89,000 to streamline the plant's production process, and $7,000 to identify suppliers that will guarantee zero defects and on-time delivery.

Requirements

1. What are the total costs of adopting lean production?
2. What are the total benefits of adopting lean production?
3. Should the company adopt lean production? Why or why not?

E1-17A Identify sustainability efforts as impacting people, planet, or profit *(Learning Objective 5)*

SUSTAINABILITY

Sustainability involves more than just the impact of actions on the environment. The triple bottom line recognizes that a company has to measure its impact on its triple bottom line for its long-term viability. To follow are examples of green initiatives recently undertaken at PepsiCo., Inc. For each example, indicate whether this initiative would primarily impact environmental, social, or economic factors.

a. In 2015, PepsiCo increased its dividend to shareholders.
b. It created a new global ingredient standard in 2014 that helps to ensure ingredient safety and integrity.
c. In 2014, PepsiCo used 23% less water (considered to be a scarce resource) per unit of production than in 2006.
d. Almost 60% of beverage launches qualified as "Better-For-You" or "Good-For-You" products in 2014 (as opposed to PepsiCo's "Fun-For-You" category).
e. From 2008 to 2014, PepsiCo held its greenhouse gas emissions stable despite increasing production.
f. PepsiCo strengthened its Responsible Advertising to Children policy.
g. The return on PepsiCo's invested capital was above 13% for the fifth year in a row.
h. In 2014, PepsiCo increased its amount of recycled content in its packaging by 23%.
i. In 2014, 93% of PepsiCo's waste was not sent to landfills.
j. In 2014, approximately 20% of PepsiCo's net revenue came from its nutrition business since it has been making a concerted effort to promote more healthy food and beverage choices.
k. During 2014, 95% of PepsiCo's manufacturing sites underwent an independent food safety audit by the American Institute of Baking.
l. Since 2006, PepsiCo has reached more than 1.92 million children in 477 schools in India through its programs promoting nutrition and physical activity.
m. PepsiCo provided access to safe water for 6 million people.
n. Forty of PepsiCo's buildings have achieved LEED certification (LEED certification is a measure of energy efficiency).

EXERCISES Group B

E1-18B Define key terms *(Learning Objectives 1 & 2)*

Complete the following statements with one of the terms listed here. You may use a term more than once, and some terms may not be used at all.

Budget	**Creditors**	**Managerial accounting**	**Planning**
Controlling	**Financial accounting**	**Managers**	**Shareholders**

a. U.S. companies must follow GAAP (or International Financial Reporting Standards, IFRS, in the case of companies headquartered in many countries outside of the United States) in their _____ systems.

b. Financial accounting develops reports for external parties such as _____ and _____.

c. When managers evaluate the company's performance compared to the plan, they are performing the _____ role of management.

d. _____ are decision makers inside a company.

e. _____ provides information on a company's past performance to external parties.

f. _____ systems are not restricted by GAAP (or International Financial Reporting Standards, IFRS, in the case of companies headquartered in many countries outside of the United States) but are chosen by comparing the costs versus the benefits of the system.

g. Choosing goals and the means to achieve them is the _____ function of management.

h. _____ systems report on various segments or business units of the company.

i. _____ statements of public companies are audited annually by CPAs.

E1-19B Identify skills needed by management accountants *(Learning Objective 3)*

Management accountants need a wide variety of skills for their roles in organizations. These skills can be classified as either technical or nontechnical.

Requirement

For each of the following skills, indicate whether it is a technical competency or a non-technical competency for a management accountant.

a. Leadership
b. Communication
c. Collaboration
d. Internal controls
e. Change management
f. Cost management
g. Investment decision making
h. Technology
i. Customer service
j. Financial statement analysis
k. Business acumen
l. Performance management
m. Adaptability
n. Enterprise risk management
o. Planning, budgeting, and forecasting
p. Decision analysis
q. Internal financial reporting
r. Ethics
s. Process improvement
t. Strategic thinking

E1-20B Identify users of accounting information *(Learning Objective 3)*

For each of the following users of financial accounting information and managerial accounting information, specify whether the user would primarily use financial accounting information or managerial accounting information, or both.

1. Internal auditor
2. Potential shareholders
3. Loan officer at the company's bank
4. Manager of the Sales Department
5. Bookkeeping Department
6. Managers at regional offices
7. IRS agent
8. Current shareholders
9. Wall Street analyst
10. News reporter
11. Company controller
12. Board of directors
13. SEC employee
14. External auditor (public accounting firm)

E1-21B Classify ethical responsibilities *(Learning Objective 4)*

ETHICS

According to the IMA's *Statement of Ethical Professional Practice* (reproduced in the chapter), management accountants should follow four standards: competence, confidentiality, integrity, and credibility. Each of these standards contains specific responsibilities. Classify each of the following responsibilities according to the standard it addresses.

1. Communicate information fairly and objectively.
2. Recognize and communicate professional limitations that would preclude responsible judgment or successful performance of an activity.
3. Mitigate actual conflicts of interest. Regularly communicate with business associates to avoid apparent conflicts of interest. Advise all parties of any potential conflicts.
4. Provide decision support information and recommendations that are accurate, clear, concise, and timely.
5. Abstain from engaging in or supporting any activity that might discredit the profession.
6. Disclose all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, analyses, or recommendations.
7. Inform all relevant parties regarding the appropriate use of confidential information. Monitor subordinates' activities to ensure compliance.
8. Perform professional duties in accordance with relevant laws, regulations, and technical standards.
9. Refrain from engaging in any conduct that would prejudice carrying out duties ethically.
10. Keep information confidential except when disclosure is authorized or legally required.
11. Disclose delays or deficiencies in information, timeliness, processing, or internal controls in conformance with organization policy and/or applicable law.
12. Refrain from using confidential information for unethical or illegal advantage.
13. Maintain an appropriate level of professional expertise by continually developing knowledge and skills.

E1-22B Equipment purchase cost-benefit analysis *(Learning Objective 5)*

Faced with rising pressure for a $15 per hour minimum wage rate, the farming industry is currently exploring the possible use of robotics to replace some farm workers. The Lettuce Bot is one such robot; its job is to thin out a field of lettuce, removing the least promising buds of lettuce. By removing these weaker plants, the stronger lettuce plants have more room to grow. Assume the following facts:

1. One Lettuce Bot would do the work of 25 farm workers.
2. Each farm worker typically works 50 hours on the lettuce thinning process each year.
3. Each farm worker would earn $15 per hour plus 7.65% payroll tax.
4. The Lettuce Bot is estimated to cost $9,500 plus $1,000 for delivery.
5. Annual costs of operating the Lettuce Bot are expected to be $2,500.

While the Lettuce Bot itself may be in workable condition for up to five years, assume that the farm would view its implementation as a one-year experiment.

Requirement

Perform a cost-benefit analysis for the first year of implementation to determine whether the Lettuce Bot would be a financially viable investment if the minimum wage is raised to $15 per hour.

E1-23B Lean production cost-benefit analysis *(Learning Objective 5)*

Pittinger Industries manufactures iPhone case covers. Jeanne Thompson, the CEO, is trying to decide whether to adopt a lean thinking model. She expects that adopting lean production would save $63,000 in warehousing expenses and $39,600 in spoilage costs. Adopting lean production will require several one-time up-front expenditures: $11,500 for an employee training program, $41,500 to streamline the plant's production process, and $7,500 to identify suppliers that will guarantee zero defects and on-time delivery.

Requirements

1. What are the total costs of adopting lean production?
2. What are the total benefits of adopting lean production?
3. Should the company adopt lean production? Why or why not?

SUSTAINABILITY

E1-24B Identify sustainability efforts as impacting people, planet, or profit *(Learning Objective 5)*

Sustainability involves more than just the impact of actions on the environment. The triple bottom line recognizes that a company has to measure its impact on its triple bottom line for its long-term viability. Following are examples of green initiatives recently undertaken at The Coca-Cola Company. For each example, indicate whether this initiative would *primarily* impact environmental, social, or economic factors.

a. Increased the number of countries where reduced-, low-, or no-calorie products represent more than 20% of the local product lineup.
b. For the twelfth consecutive year, improved overall water efficiency in manufacturing.
c. Achieved a 21% improvement in energy efficiency as compared to 2004.
d. Generated a profit for Coca-Cola's shareholders.
e. Worked with partners to recover and recycle the equivalent of 48% of bottles and cans used for finished beverages.
f. Exceeded the 2014 goal of 89% of direct suppliers' compliance with Coca-Cola's Supplier Guiding Principles (for human and workplace rights).
g. By 2014, Coca-Cola reduced the weight of its products sold by 15% since 2008.
h. By the end of 2014, 98% of Coca-Cola-owned facilities had achieved compliance with its Human Rights Policy.
i. Replaced a significant portion of the plastic used in its bottles with a plant-based material.
j. As of the end of 2014, 43% of Coca-Cola's U.S. workforce was multicultural.
k. Generated a positive economic benefit in every community in which Coca-Cola has facilities in the United States.
l. By the end of 2014, almost 80% of Coca-Cola's plants had achieved both the ISO 9001 Quality Management standard and the FSSC 22000 Food Safety Management System standard.
m. Reduced emissions from manufacturing in developed countries by 13% since 2004.
n. Lost-time incident (accident) rate fell from 4.1 incidents per 200,000 hours worked in 2010 to 1.9 incidents per 200,000 hours worked in 2014.

PROBLEMS Group A

P1-25A Management processes and accounting information *(Learning Objectives 1 & 2)*

Sarah Miracle has her own chain of music stores, Miracle Music. Her stores sell musical instruments, sheet music, and other related items. Music lessons and instrument repair are also offered through the stores. Miracle Music also has a website that sells music merchandise. The store has a staff of 80 people working in six departments: Sales, Repairs, Lessons, Web Development, Accounting, and Human Resources. Each department has its own manager.

Requirements

1. For each of the six departments, describe at least one decision/action for each of the three stages of management (planning, directing, and controlling). Prepare a table similar to the following for your answer:

	Planning	Directing	Controlling
Sales			
Repairs			
Lessons			
Web Development			
Accounting			
Human Resources			

2. For each of the decisions/actions you described in Part 1, identify what information is needed for that decision/action. Specify whether that information would be generated by the financial accounting system or the managerial accounting system at Miracle Music.

P1-26A Ethical dilemmas *(Learning Objective 4)*

ETHICS

Barb Perot is the new controller for EduTechno Software, which develops and sells educational software. Shortly before the December 31 fiscal year-end, Tony Cattrall, the company president, asks Perot how things look for the year-end numbers. He is not happy to learn that earnings growth may be below 15% for the first time in the company's five-year history. Cattrall explains that financial analysts have again predicted a 15% earnings growth for the company and that he does not intend to disappoint them. He suggests that Perot talk to the assistant controller, who can explain how the previous controller dealt with this situation. The assistant controller suggests the following strategies:

a. Persuade suppliers to postpone billing until January 1.
b. Record as sales certain software awaiting sale that is held in a public warehouse.
c. Delay the year-end closing a few days into January of the next year so that some of next year's sales are included as this year's sales.
d. Reduce the allowance for bad debts (and bad debts expense).
e. Postpone routine monthly maintenance expenditures from December to January.

Requirement

Which of these suggested strategies are inconsistent with IMA standards? What should Perot do if Cattrall insists that she follow all of these suggestions?

P1-27A ERP cost-benefit analysis *(Learning Objective 5)*

As CEO of Aqua Marine, Carrie Easton knows it is important to control costs and to respond quickly to changes in the highly competitive boat-building industry. When Rose Consulting proposes that Aqua Marine invest in an ERP system, she forms a team to evaluate the proposal: the plant engineer, the plant foreman, the systems specialist, the human resources director, the marketing director, and the management accountant.

A month later, management accountant Mark Cole reports that the team and Rose estimate that if Aqua Marine implements the ERP system, it will incur the following costs:

a. $435,000 in software costs
b. $95,000 to customize the ERP software and load Aqua Marine's data into the new ERP system
c. $105,000 for employee training

The team estimates that the ERP system should provide several benefits:

a. More efficient order processing should lead to savings of $105,000.
b. Streamlining the manufacturing process so that it maps into the ERP system will create savings of $125,000.
c. Integrating purchasing, production, marketing, and distribution into a single system will allow Aqua Marine to reduce inventories, saving $225,000.
d. Higher customer satisfaction should increase sales, which, in turn, should increase profits by $155,000.

Requirements

1. If the ERP installation succeeds, what is the dollar amount of the benefits?
2. Should Aqua Marine install the ERP system? Why or why not? Show your calculations.
3. Why did Easton create a team to evaluate Rose's proposal? Consider each piece of cost-benefit information that management accountant Cole reported. Which person on the team is most likely to have contributed each item? (*Hint:* Which team member is likely to have the most information about each cost or benefit?)

P1-28A Online order system cost-benefit analysis *(Learning Objective 5)*

Ferguson Gas wants to move its sales order system online. Under the proposed system, gas stations and other merchants will use a secure site to check the availability and current price of various products and place an order. Currently, customer service representatives take dealers' orders over the phone; they record the information on a paper form, then manually enter it into the firm's computer system.

CFO Stacey Wilson believes that dealers will not adopt the new online system unless Ferguson Gas provides financial assistance to help them purchase or upgrade their computer systems. Wilson estimates this one-time cost at $760,000. Ferguson Gas will also have to invest $160,000 in upgrading its own computer hardware. The cost of the software and the consulting fee for installing the system will be $220,000. The online system will enable Ferguson Gas to eliminate 25 clerical positions. Wilson estimates that the benefits of the new system's lower labor costs will have saved the company $1,340,000.

Requirement

Use a cost-benefit analysis to recommend to Wilson whether Ferguson Gas should proceed with the online ordering system. Give your reasons, showing supporting calculations.

P1-29A Continuation of P1-28A: revised estimates *(Learning Objective 5)*

Wilson revises her estimates of the benefits from the new system's lower labor costs as calculated in P1-28A. She now thinks the savings will be only $935,000.

Requirements

1. Compute the expected benefits of the online ordering system.
2. Would you recommend that Ferguson Gas accept the proposal?
3. Before Wilson makes a final decision, what other factors should she consider?

PROBLEMS Group B

P1-30B Management processes and accounting information *(Learning Objectives 1 & 2)*

Bryan Haas has his own electronics retail chain, TechnoGeek. His stores sell computer parts, audiovisual equipment, consumer electronics, and related items. Custom computer building and electronics repair are also offered. In addition, TechnoGeek has a website to sell its merchandise. The store has a staff of 90 people working in six departments: Sales, Customization, Repairs, Web Development, Accounting, and Human Resources. Each department has its own manager.

Requirements

1. For each of the six departments, describe at least one decision/action for each of the three stages of management (planning, directing, and controlling). Prepare a table similar to the following for your answer:

	Planning	Directing	Controlling
Sales			
Repairs			
Customization			
Web Development			
Accounting			
Human Resources			

2. For each of the decisions/actions you described in Part 1, identify what information is needed for that decision/action. Specify whether that information would be generated by the financial accounting system or the managerial accounting system at TechnoGeek.

P1-31B Ethical dilemmas *(Learning Objective 4)*

ETHICS

Maria Dees is the new controller for Harmony Tennis, a designer and manufacturer of tennis attire. Shortly before the December 31 fiscal year-end, Harmony Sapp (the company president) asks Dees how things look for the year-end numbers. Sapp is not happy to learn that earnings growth may be below 10% for the first time in the company's five-year history. Sapp explains that financial analysts have again predicted a 12% earnings growth for the company and that she does not intend to disappoint them. She suggests that Dees talk to the assistant controller, who can explain how the previous controller dealt with this situation. The assistant controller suggests the following strategies:

a. Postpone planned advertising expenditures from December to January.
b. Do not record sales returns and allowances on the basis that they are individually immaterial.
c. Persuade retail customers to accelerate January orders to December.
d. Reduce the allowance for bad debts (and bad debts expense).
e. Harmony Tennis ships finished goods to public warehouses across the country for temporary storage until it receives firm orders from customers. As Harmony Tennis receives orders, it directs the warehouse to ship the goods to nearby customers. The assistant controller suggests recording goods sent to the public warehouses as sales.

Requirement

Which of these suggested strategies are inconsistent with IMA standards? What should Dees do if Sapp insists that she follow all of these suggestions?

P1-32B ERP cost-benefit analysis *(Learning Objective 5)*

As CEO of Riverside Marine, Rachel Moore knows it is important to control costs and to respond quickly to changes in the highly competitive boat-building industry. When Gerbig Consulting proposes that Riverside Marine invest in an ERP system, she forms a team to evaluate the proposal: the plant engineer, the plant foreman, the systems specialist, the human resources director, the marketing director, and the management accountant.

A month later, management accountant Miles Cobalt reports that the team and Gerbig estimate that if Riverside Marine implements the ERP system, it will incur the following costs:

a. $390,000 in software costs
b. $85,000 to customize the ERP software and load Riverside Marine's data into the new ERP system
c. $112,000 for employee training

The team estimates that the ERP system should provide several benefits:

a. More efficient order processing should lead to savings of $185,000.
b. Streamlining the manufacturing process so that it maps into the ERP system will create savings of $255,000.
c. Integrating purchasing, production, marketing, and distribution into a single system will allow Riverside Marine to reduce inventories, saving $215,000.
d. Higher customer satisfaction should increase sales, which, in turn, should increase profits by $150,000.

Requirements

1. If the ERP installation succeeds, what is the dollar amount of the benefits?
2. Should Riverside Marine install the ERP system? Why or why not? Show your calculations.
3. Why did Moore create a team to evaluate Gerbig's proposal? Consider each piece of cost-benefit information that management accountant Cobalt reported. Which person on the team is most likely to have contributed each item? (*Hint:* Which team member is likely to have the most information about each cost or benefit?)

P1-33B Online order system cost-benefit analysis *(Learning Objective 5)*

Union Gas wants to move its sales order system online. Under the proposed system, gas stations and other merchants will use a secure site to check the availability and current price of various products and place an order. Currently, customer service representatives take dealers' orders over the phone; they record the information on a paper form, then manually enter it into the firm's computer system.

CFO Kate Bronson believes that dealers will not adopt the new online system unless Union Gas provides financial assistance to help them purchase or upgrade their computer network. Bronson estimates this one-time cost at $765,000. Union Gas will also have to invest $150,000 in upgrading its own computer hardware. The cost of the software and the consulting fee for installing the system will be $240,000. The online system will enable Union Gas to eliminate 25 clerical positions. Bronson estimates that the new system's lower labor costs will have saved the company $1,370,000.

Requirement

Use a cost-benefit analysis to recommend to Bronson whether Union Gas should proceed with the online ordering system. Give your reasons, showing supporting calculations.

P1-34B Continuation of P1-33B: revised estimates *(Learning Objective 5)*

Consider the Union Gas proposed entry into the online ordering system in P1-33B. Bronson revises her estimates of the benefits from the new system's lower labor costs. She now thinks the savings will be only $936,000.

Requirements

1. Compute the expected benefits of the online ordering system.
2. Would you recommend that Union Gas accept the proposal?
3. Before Bronson makes a final decision, what other factors should she consider?

Serial Case

C1-35 Discuss how managerial accounting can be used at Caesars Palace

(Learning Objectives 1, 2, 3, 4, and 5)

Note: This story is the first part of the Caesars Entertainment Corporation serial case contained in every chapter in this textbook.

Caesars Palace® Las Vegas, owned and operated by Caesars Entertainment Corporation (CZR), opened in 1966. The Nevada hotel-and-casino complex has been featured in several movies including *Rain Man*, *Iron Man*, and *The Hangover Part III*. Caesars Palace is the twelfth largest hotel in the world.[17] Caesars Palace® Las Vegas, at the start of 2015, included six towers (named Augustus, NOBU Hotel, Julius (formerly named Roman), Palace, Octavius, and Forum) containing almost 4,000 guest rooms. Beyond guest accommodations, the complex also included casinos, retail shops, restaurants, nightclubs, a 4,296-seat entertainment venue, and a large convention facility.

Caesars Palace® Las Vegas made headlines when it undertook a $75 million renovation. In mid-September 2015, the hotel closed its then-named Roman Tower, which was last updated in 2001, and started a major renovation of the 567 rooms housed in that tower. On January 1, 2016, the newly renamed Julius Tower reopened, replacing the Roman Tower. In addition to renovating the existing rooms and suites in the former Roman Tower, 20 guest rooms were added to the tower.

Each guest room in the Julius Tower features designer furniture, including beds boasting a custom-upholstered headboard, thick carpet, contemporary paint colors, a 55-inch flat-screen TV, and upscale artwork. Each guest room has a stocked minibar, likely offering such standard favorites as gummy bears, candy bars, beer, vodka, water, carbonated soft drinks, chips, and other assorted snacks and beverages. Each bathroom has a double-sink floating vanity, custom-lighted vanity mirrors, a stone shower with two glass sides, and both a rain shower and a hand-held showerhead. In-room toiletries boast the luxurious Gilchrist & Soames-branded soap and shampoo.

With the renovation completed, Caesars expects the Julius Tower room rate to average around $149 per night. This increase, a $25 or 20.2% increase, reflects, in part, the room improvements.

Requirement

What types of decisions might the management of Caesars Palace® Las Vegas need to make over the next several years? In other words, how might managerial accounting information be useful to the management of Caesars Palace® Las Vegas?

[17]Source: https://en.wikipedia.org/wiki/List_of_largest_hotels_in_the_world, as of January 8, 2016.

CRITICAL THINKING

Discussion & Analysis

A1-36 Discussion Questions

1. What are the three main areas of management's responsibility? How are these three areas interrelated? How does managerial accounting support each of the responsibility areas of managers?
2. What is the Sarbanes-Oxley Act of 2002 (SOX)? How does SOX affect financial accounting? How does SOX impact managerial accounting? Is there any overlap between financial and managerial accounting in terms of the SOX impact? If so, what are the areas of overlap?
3. Why is managerial accounting more suitable for internal reporting than for financial accounting?
4. How can what is taught in managerial accounting help you in other careers other than accounting?
5. A company currently has all of its managerial accountants reporting to the controller. What might be inefficient about this organizational structure? How might the company restructure? What benefits would the restructuring offer?
6. What skills are required of a management accountant? In what college courses are these skills taught or developed? What skills would be further developed in the workplace?
7. What is the Institute of Management Accountants (IMA)? What is the American Institute of Certified Public Accountants? How could being a member of a professional organization help a person's career?
8. How might a Certified Management Accountant (CMA) certification benefit a person in his or her career? What skills are assessed on the CMA exam?
9. What are the four ethical standards in the Institute of Management Accountants' *Statement of Ethical Professional Practice*? Describe the meaning of each of the four standards. How does each of these standards impact planning, directing, and controlling?
10. What business trends are influencing managerial accounting today? How do these trends impact management accountants' roles in the organization?
11. The effect of sustainability on the planet (environment) is probably the most visible component of the triple bottom line. For a company with which you are familiar, list two examples of its sustainability efforts related to the planet.
12. One controversial area regarding sustainability is whether organizations should use their sustainability progress and activities in their advertising. Do you think a company should publicize its sustainability efforts? Why or why not?

Application & Analysis

Mini Cases

A1-37 Accountants and Their Jobs

Basic Discussion Questions

1. When you think of an accountant, whom do you picture? Do you personally know anyone (family member, friend, relative) whose chosen career is accounting? If so, does the person "fit" your description of an accountant or not?
2. Before reading this chapter, what did you picture accountants doing, day-in and day-out, at their jobs? From where did this mental picture come (e.g., movies, first accounting class, speaking with accountants, etc.)?
3. What skills do employers value highly? What does that tell you about "what accountants do" at their companies?
4. Many accounting majors start their careers in public accounting. Do you think most of them stay in public accounting? Discuss what you consider to be a typical career track for accounting majors.
5. If you are not an accounting major, how do the salaries of accountants compare with those of your chosen field? How do the opportunities compare (i.e., demand for accountants)?

A1-38 Ethics at Enron

ETHICS

Watch the movie *Enron: The Smartest Guys in the Room* (Magnolia Home Entertainment, 2005, Los Angeles, California).

Basic Discussion Questions

1. Do you think such behavior is common at other companies, or do you think this was a fairly isolated event?
2. How important is the "tone at the top" (the tone set by company leadership)?
3. Do you think you could be tempted to follow along if the leadership at your company had the same mentality as the leadership at Enron, or do you think you would have the courage to "just say no" or even be a "whistle-blower"?
4. Why do you think some people can so easily justify (at least to themselves) their unethical behavior?
5. In general, do you think people stop to think about how their actions will affect other people (e.g., the elderly in California who suffered due to electricity blackouts) or do they just "do their job"?
6. What was your reaction to the psychology experiment shown in the DVD? Studies have shown that unlike the traders at Enron (who received large bonuses), most employees really have very little to gain from following a superior's directive to act unethically. Why then do some people do it?
7. Do you think people weigh the potential costs of acting unethically with the potential benefits?
8. You are a business student and will someday work for a company or own a business. How will watching this movie impact the way you intend to conduct yourself as an employee or owner?
9. The reporter from *Fortune* magazine asked the question, "How does Enron make its money?" Why should every employee and manager (at every company) know the answer to this question?
10. In light of the "mark-to-market" accounting that enabled Enron to basically record any profit it wished to record, can you understand why some of the cornerstones of financial accounting are "conservatism" and "recording transactions at historical cost"?
11. How did employees of Enron (and employees of the utilities company in Oregon) end up losing billions in retirement funds?

A1-39 Interviewing a local company about sustainability *(Learning Objective 5)*

SUSTAINABILITY

In this project, you will be conducting an interview about sustainability efforts at a local organization. Find a local company or organization with which you are familiar. Arrange an interview with a manager from that organization. Before the interview, do a search on the Internet about sustainability efforts of companies in that same industry so that you can ask related questions. Use the following questions to start your interview; add relevant questions related to what you discover through your Internet search about sustainability efforts at similar companies. After the interview, write up a report of what you found during the interview. Conclude your report with your overall assessment of that organization's sustainability efforts.

1. What is the company's primary product or service? (*Note:* You should be able to answer this question BEFORE your interview.)
2. Does your company have a stated policy on sustainability? (*Note*: The company might refer to "green" practices or use some other similar term rather than using the exact term of "sustainability.") What is the policy?
3. How would this manager define "sustainability"? Is the manager's definition similar to the definition of "sustainability" in this chapter?
4. Regardless of whether the company has a sustainability policy, what sustainability efforts does the company make with respect to the environment? For example, does the company recycle its waste? What specific types of waste are recycled? Does the company purchase recycled-content products?
5. Is the amount (or percentage) of waste that is recycled tracked in a reporting system? Who gets reports on the organization's recycling efforts?

6. How does the company measure its impact on the environment (if it does)? (For example, does it measure its carbon footprint in total? Does it measure the carbon footprint of individual projects?)
7. Does the company do any external reporting of sustainability? If so, how long has the company been reporting on its sustainability efforts? If the company does not do any sustainability reporting at the current time, does it anticipate starting to report on its sustainability efforts in the near future?
8. In the manager's opinion, is sustainability important within that organization's industry? Why or why not?

ETHICS

A1-40 Ethics and casual conversations *(Learning Objective 4)*

Jane is an accountant at Merelix, a large international firm where she works on potential acquisitions. When Merelix is preparing to acquire a company, Jane is involved in filing the necessary paperwork with the Securities and Exchange Commission (SEC).

Jane has been dating Tom for two years; they are now discussing marriage. Tom works as a salesperson for a golf equipment distributor.

Over the past two years, Jane has talked with Tom about what she's doing at work. She does not go into great detail, but does occasionally mention company names. Jane has given her phone passcode to Tom so he can answer calls for her or look things up for her when she's the one driving. Tom has read some of her emails by using the phone passcode. He has also eavesdropped on a few phone conversations she has had when a colleague calls her from work with a question.

Unbeknownst to Jane, Tom has been sharing the information he has gotten from her with his stockbroker friend, Allen. Tom will call Allen to give him a "heads up" that Jane's company is going to be acquiring another company soon. Allen will then place an order to buy the stock of the company and will later split the profits with Tom.

Jane has not shared any information intentionally, nor has she directly profited from it.

Requirements

Using the IMA Statement of Ethical Professional Practice as an ethical framework, answer the following questions:

1. What is (are) the ethical issue(s) in this situation?
2. What are Jane's responsibilities as a management accountant?
3. Has Jane violated any part of the IMA Statement of Ethical Professional Practice? Support your answer.

REAL LIFE

A1-41 Using managerial accounting information to manage a Broadway production *(Learning Objectives 1 and 2)*

The Shubert Organization operates 20 theaters, including 17 on Broadway. It has brought hundreds of shows to Broadway over the decades, including *The Phantom of the Opera*, *Cats*, and *Les Miserables*. Several of its shows have been in the news in recent years including:

Mamma Mia!

The Broadway musical *Mamma Mia!* moved from the Winter Garden Theatre to the Broadhurst Theatre, both of which are on Broadway in New York City. *Mamma Mia!* will save up to $100,000 per week[18] in operating costs due to the Broadhurst's smaller size; the Broadhurst seats 1,160, while the Winter Garden seats 1,530. Theatre experts estimate the show's weekly costs to be approximately $600,000 to $700,000, and its weekly ticket sales are usually in the mid- to high-six-figure range.

Once

Once is a Tony Award–winning show on Broadway also produced by the Shubert Organization. *Once* is a musical about an Irish musician and a Czech immigrant who are drawn together by their shared love of music. *Once* opened on Broadway in March 2012. The show earned back the amount that the Shubert Organization had invested in it after just 21 weeks (169 performances).[19] The show continues its run on Broadway.

[18] "'Mamma Mia!' to Move," *The New York Times*, April 18, 2013, retrieved from http://artsbeat.blogs.nytimes.com/2013/04/18/mamma-mia-to-move/ on July 1, 2013.

[19] "*http://evamere.com/screen-to-stage-musical-transfer-once-recoups-in-record-time/*

Memphis

Another Shubert-produced musical, *Memphis*, is loosely based on the story of a Memphis disc jockey (DJ) who was one of the first white DJs to play black music in the 1950s. *Memphis* was composed by David Bryan, the keyboard player of the band Bon Jovi. The show opened on Broadway in the Shubert Theatre in October 2009 and won several awards, including four Tony Awards. The Shubert Organization had planned to run *Memphis* through November 2012, but closed the show in August 2012 because ticket revenues could not support the longer run. Instead of finding another show to use the Shubert Theatre between August 2012 and April 2013, when the show *Matilda* was scheduled to open, the Shubert Organization decided to use the time to renovate the theater.

Questions

1. For each show that the Shubert Organization produces, what type of financial accounting information would be generated or recorded?
2. What information would producers of *Mamma Mia!* have needed to make the decision to move the show to a different theatre? What information would be provided by the financial accounting system? What information would be provided by the management accounting system?
3. What information would the producers of *Once* have needed to calculate that the original investment of the show had been earned? What information would producers need to decide to keep the show open? What information would be provided by the financial accounting system? What information would be provided by the management accounting system?
4. What information would the producers of *Memphis* have needed to decide to close the show early? What information would the Shubert Organization management have needed to decide to renovate the theater rather than produce another show after *Memphis* closed its run? What information would be provided by the financial accounting system? What information would be provided by the management accounting system?

Try It Solutions

page 11:

1. True
2. False. Management accounting is geared toward helping internal managers run the company efficiently and effectively.
3. True
4. True
5. True
6. False. Management accountants must be able to effectively communicate with people throughout the organization. As a result, they need to have strong oral and written communication skills.
7. True
8. False. The IMA (Institute of Management Accountants) issues the CMA certification. However, the AICPA has recently instituted the CGMA designation for qualified CPAs who have experience in business and industry.

page 24:

1. True
2. False. Big data is driving most business decisions.
3. True
4. True
5. False. Service makes up the largest sector of the U.S. economy.
6. False. Globalization has several significant implications for management accounting.
7. False. These types of systems are known as enterprise resource planning (ERP) systems.
8. True

2 Building Blocks of Managerial Accounting

lev radin/Alamy

Source: http://www.toyota-global.com/company/vision_philosophy/toyota_global_vision_2020.html; http://www.statista.com/statistics/275520/ranking-of-car-manufacturers-based-on-global-sales/

Learning Objectives

- **1** Distinguish among service, merchandising, and manufacturing companies
- **2** Describe the value chain and its elements
- **3** Distinguish between direct and indirect costs
- **4** Identify product costs and period costs
- **5** Prepare the financial statements for service, merchandising, and manufacturing companies
- **6** Describe costs that are relevant and irrelevant for decision making
- **7** Classify costs as fixed or variable and calculate total and average costs at different volumes

As the world's largest automotive manufacturer, Toyota has been guided by a global vision designed "to lead the way to the future of mobility, enriching lives around the world with the safest and most responsible ways of moving people." In order to achieve this vision, company managers must focus on researching and developing new, safe, and environmentally friendly technologies, and on designing, marketing, and distributing new models that will appeal to a diverse array of global markets. Toyota must also produce vehicles in the most efficient manner possible and provide customers with exceptional post-sales service. All of these business activities, which cost money to perform, impact Toyota's bottom line by driving market share and sales revenue. Toyota's keys to financial success include its focus on performing these business activities as cost efficiently as possible and using cost and revenue information to make profitable business decisions. In this chapter, we discuss the costs incurred by these different business activities: costs that both managers and accountants must understand in order to make profitable business decisions.

So far, we have seen how managerial accounting provides information that managers use to run their businesses more efficiently. Managers must understand basic managerial accounting terms and concepts before they can use the information to make good decisions. This terminology provides the common ground through which managers and accountants communicate. Without a common understanding of these concepts, managers may ask for (and accountants may provide) the wrong information for making decisions. As you will see, different types of costs are useful for different purposes. Both managers and accountants must have a clear understanding of the types of costs that are relevant to the decision at hand.

What Are the Most Common Business Sectors and Their Activities?

Before we talk about specific types of costs, let's consider the three most common types of companies and the business activities they perform.

Service, Merchandising, and Manufacturing Companies

1 Distinguish among service, merchandising, and manufacturing companies

Recall from Chapter 1 that many companies are beginning to adhere to the notion of a **triple bottom line**, in which the company's performance is evaluated not only in terms of profitability, but also in terms of its impact on people and the planet. Even so, for a business to flourish and grow in the long run, it will need to generate economic profits that are sufficiently large to attract and retain investors, as well as fuel future business expansion. Companies typically generate profit through one of three basic business models: they provide a service, they sell merchandise, or they manufacture products.

Service Companies

Service companies are in business to sell intangible services—such as health care, insurance, banking, and consulting. Recall from Chapter 1 that service firms now make up the largest sector of the U.S. economy. Because these types of companies sell services, they generally don't carry inventory. Some service providers carry a minimal amount of supplies inventory; however, this inventory is typically used for internal operations—not sold for profit. Service companies incur costs to provide services, advertise, and develop new services. For many service providers, salaries and benefits make up the majority of their costs.

Merchandising Companies

Merchandising companies such as Walmart and Best Buy resell tangible products they buy from manufacturers and suppliers. For example, Walmart buys clothing, toys, and electronics and resells them to customers at higher prices than what it pays for these goods. Merchandising companies include retailers (such as Walmart) and wholesalers. **Retailers** sell to consumers like you and me. **Wholesalers**, often referred to as "middlemen," buy products in bulk from manufacturers, mark up the prices, and then sell those products to retailers.

Because merchandising companies are in business to sell tangible goods, they carry a substantial amount of inventory. The cost of inventory includes the cost merchandisers pay for the goods *plus* all costs necessary to get the merchandise in place and ready to sell, such as freight-in costs and any import duties or tariffs paid on merchandise purchased from overseas suppliers. A merchandiser's balance sheet has just one inventory account called "Inventory" or "Merchandise Inventory." Besides incurring inventory-related costs, merchandisers also incur costs to operate their retail stores and websites, advertise, research new products and new store locations, and provide customer service.

Manufacturing Companies

Manufacturing companies use labor, plant, and equipment to convert raw materials into new finished products. For example, Toyota converts steel, tires, and fabric into high-performance vehicles using production labor and advanced manufacturing equipment. The vehicles are then sold to car dealerships at a price that is high enough to cover costs and generate a profit.

As shown in Exhibit 2-1, manufacturers carry three types of inventory:

1. Raw materials inventory: *All raw materials that will be used in manufacturing.* Toyota's raw materials include steel, glass, tires, upholstery fabric, engines, and other automobile components. They also include other physical materials used in the plant, such as machine lubricants and janitorial supplies.
2. Work in process inventory: *Goods that are partway through the manufacturing process but not yet complete.* At Toyota, the work in process inventory consists of partially completed vehicles.
3. Finished goods inventory: *Completed goods that have not yet been sold.* Toyota is in business to sell completed cars, not work in process. Once the vehicles are completed, they are no longer considered work in process, but rather they become part of finished goods inventory.

EXHIBIT 2-1 Manufacturers' Three Types of Inventory

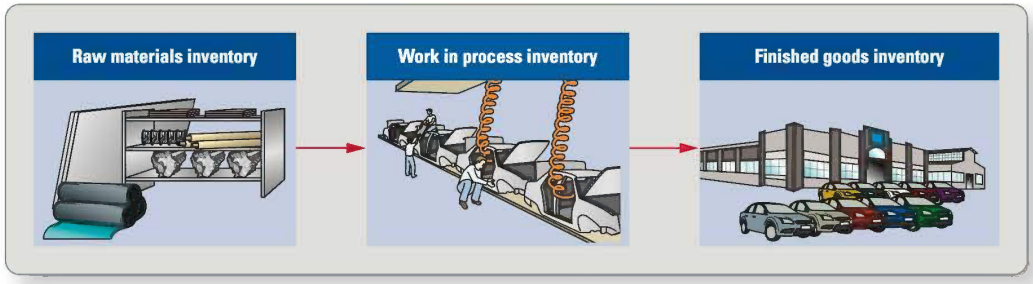


Exhibit 2-2 summarizes the differences among service, merchandising, and manufacturing companies.

EXHIBIT 2-2 Service, Merchandising, and Manufacturing Companies

	Service Companies	Merchandising Companies	Manufacturing Companies
Examples	Southwest Airlines Bank of America Progressive Insurance Goldman Sachs	Amazon.com Best Buy Walmart The Home Depot	Procter & Gamble General Mills Apple Toyota
Primary Output	Intangible services	Tangible products purchased from manufacturers and suppliers	New tangible products made using raw materials, labor, and production equipment
Type(s) of Inventory	None	Inventory (or Merchandise Inventory)	Raw materials inventory Work in process inventory Finished goods inventory

STOP & THINK

What type of company is Chipotle?

Answer: Some companies don't seem to fit nicely into one of the three categories previously discussed. For example, Chipotle has some elements of a service company (it serves hungry patrons), some elements of a manufacturing company (employees convert raw ingredients into finished meals), and some elements of a merchandising company (it sells ready-to-serve bottled drinks). Despite all of these different operating activities, restaurants are considered to be in the service sector.

As the "Stop & Think" feature shows, not all companies are strictly service, merchandising, or manufacturing firms. Recall from Chapter 1 that the U.S. economy is shifting more toward service-based companies. Many traditional manufacturers, such as General Electric (GE) and Ford, have developed profitable service segments that add additional profit to the company's bottom line. Even merchandising firms are getting into the "service game." For example, retailers often sell extended warranties on products ranging from furniture and major appliances to sporting equipment and consumer electronics. While the merchandiser recognizes a liability for these warranties, the price charged to customers for the warranties greatly exceeds the company's cost of fulfilling its warranty obligations, thus providing additional profit to the merchandiser.

Why is this important?

"All employees should have an **understanding** of their company's basic business model. The **Enron scandal** was finally brought to light as a **result** of someone seriously asking, "How does this company actually **make money?**" If the business model does not make **logical sense**, something fishy may be going on."

Which Business Activities Make Up the Value Chain?

2 Describe the value chain and its elements

Many people describe Toyota, General Mills, and Apple as manufacturing companies. But it would be more accurate to say that these are companies that *do* manufacturing. Why? Because companies that do manufacturing also do many other things. For example, even though Apple is a manufacturing company, it may be best known for its technological design innovations. Likewise, although Toyota is a manufacturer, it also conducts research to determine what type of new technology to integrate into next year's models. Toyota designs the new models based on its research and then produces, markets, distributes, and services the cars. These activities form Toyota's **value chain**—the activities that add value to the company's products and services. The value chain is pictured in Exhibit 2-3.

EXHIBIT 2-3 The Value Chain

The value chain activities also cost money. To set competitive, yet profitable selling prices, Toyota must consider all of the costs incurred along the value chain, not just the costs incurred in manufacturing vehicles. Let's briefly consider some of the costs incurred in each element of the value chain.[1]

[1] Toyota Motor Corp 2014 Annual report and Toyota.com.

Research and Development (R&D): *Researching and developing new or improved products or services and the processes for producing them.* Toyota continually engages in researching and developing new technologies to incorporate in its vehicles (such as fuel cells, artificial intelligence, and pre-crash safety systems). Much of the R&D is aimed at safety and accessibility; improving how machines and humans work together. Toyota also researches and develops new technologies to use in its manufacturing plants (such as advanced manufacturing robotics). In 2014, Toyota spent 910.5 billion yen (approximately $7.7 billion) on R&D.

Design: *Detailed engineering of products and services and the processes for producing them.* Toyota's goal is to design vehicles that create total customer satisfaction, including satisfaction with vehicle style, features, safety, and quality. As a result, Toyota updates the design of older models (such as the Corolla) and designs new prototypes on a regular basis (such as the i-Road, a three-wheel electric commuter vehicle, and the Mirai, the first fuel cell vehicle for the mass market). Part of the design process also includes determining how to mass-produce the vehicles. Because Toyota produces over 8 million vehicles per year, engineers must design production plants that are efficient, yet flexible enough to allow for new features and models.

Production or Purchases: *Resources used by manufacturers to produce a product or by merchandising companies to purchase finished merchandise intended for resale.* For Toyota, the production activity includes all costs incurred to *make* the vehicles. These costs include raw materials (such as steel), plant labor (such as machine operators' wages), and manufacturing overhead (such as factory utilities and depreciation). As you can imagine, factories are very expensive to build and operate.

For a merchandiser such as Best Buy, this value chain activity includes the cost of purchasing the inventory that the company plans to sell to customers. It also includes all costs associated with getting the inventory to the store, including freight-in costs and any import duties and tariffs that might be incurred if the merchandise was purchased from overseas.

Marketing: *Promotion and advertising of products or services.* The goal of marketing is to create consumer demand for products and services. Toyota uses print advertisements in magazines and newspapers, billboards, television commercials, and the Internet to market its vehicles in both existing and emerging global markets. Some companies use star athletes and sporting events to market their products. Each method of advertising costs money but adds value by reaching different target customers.

Distribution: *Delivery of products or services to customers.* On the one hand, Toyota sells most of its vehicles through traditional brick-and-mortar dealerships. On the other hand, Amazon sells and distributes its products almost entirely using a web-based sales platform and then ships the products directly to customers. Other industries use different distribution mechanisms, such as catalog sales and home-based parties.

Customer Service: *Support provided for customers after the sale.* Toyota incurs substantial customer service costs, especially in connection with warranties on new car sales. Toyota generally warranties its vehicles for the first three years and/or 36,000 miles, whichever comes first. Historically, Toyota has had one of the best reputations in the auto industry for excellent quality. However, 2009–2010 proved to be costly and difficult years for the company, as recalls were made on over 14 million vehicles. In addition to the cost of repairing the vehicles, the company incurred millions of dollars in costs related to government fines, lawsuits, and public relations campaigns. However, as a result of the company's commitment to building safe and reliable vehicles, Toyota once again regained the title of the number-one carmaker in the world in 2012 and has continued to hold the number one position for the last four years, selling over 10 million vehicles per year.

Coordinating Activities Across the Value Chain

Many of the value chain activities occur in the order discussed here. However, managers cannot simply work on R&D and not think about customer service until after selling the car. Rather, cross-functional teams work on R&D, design, production, marketing, distribution, and customer service simultaneously. As the teams develop new model features, they

also plan how to produce, market, and distribute the redesigned vehicles. They also consider how the new design will affect warranty costs. Recall from the last chapter that management accountants typically participate in these cross-functional teams. Even at the highest level of global operations, Toyota uses cross-functional teams to implement its business goals and strategy.

The value chain pictured in Exhibit 2-3 also reminds managers to control costs over the value chain as a whole. For example, Toyota spends more in R&D and product design to increase the quality of its vehicles, which in turn reduces customer service costs. Even though R&D and design costs are higher, the total cost of the vehicle—as measured throughout the entire value chain—is potentially lower as a result of this trade-off. Enhancing its reputation for safe, high-quality, innovative products has also enabled Toyota to increase its market share.

Why is this important?

"All activities in the **value chain** are important, yet each costs **money** to perform. Managers must understand how **decisions** made in one area of the value chain will **affect the costs** incurred in other areas of the value chain."

Sustainability and the Value Chain

Progressive companies will incorporate sustainability throughout every function of the value chain. However, experts estimate that 90% of sustainability occurs at the design stage. At the design stage, companies determine how the product will be used by customers, how easily the product can be repaired or eventually recycled, and the types of raw materials and manufacturing processes necessary to produce the product. Thus, good design is essential to the creation of environmentally friendly, safe products that enhance people's lives. For example, companies can integrate sustainability throughout the value chain by:

- **Researching and developing environmentally safe packaging.** Many companies are actively researching ways to reduce the amount of packaging used with their products as well as developing new types of packaging that are less harmful to the environment. In 2015, McDonald's achieved the goal of sourcing 100% of its packaging for its European operations from recycled sources or from forests certified by the Forest Stewardship Council. That same year, the company also pledged to end deforestation across the company's entire global supply chain.[2]
- **Designing products using life-cycle assessment and biomimicry.** Life-cycle assessment means the company analyzes the environmental impact of a product, from "cradle-to-grave," in an attempt to minimize negative environmental consequences throughout the entire lifespan of the product. For example, after studying the life cycles of its products, Procter & Gamble (P&G) discovered that about three-quarters of the energy used by consumers in washing their clothes comes from heating the water. As a result, the company developed Coldwater Tide, which is effective for laundering in cold water, thereby conserving energy. This product is a win–win for the environment and the company: the product is saving energy while also generating millions in annual sales revenue.[3]

  Biomimicry means that a company tries to mimic, or copy, natural biological features and processes. For example, Ford Motor Company and P&G are studying the gecko, nature's perfect example of a creature able to stick to surfaces without any liquids or adhesive substances, and then release from the surface, without any leaving sticky residue. The companies envision innovative adhesive applications from this research that will generate revenue, save money, and be more environmentally friendly.[4] Another aspect of biomimicry

[2]http://www.environmentalleader.com/2015/11/10/mcdonalds-achieves-100-sustainable-packaging-goal/

[3]http://www.nytimes.com/2011/09/17/business/cold-water-detergents-get-a-chilly-reception.html?pagewanted=1&_r=0

[4]http://www.environmentalleader.com/2015/10/21/ford-looks-to-lizards-to-increase-recyclability-improve-adhesives/

revolves around eliminating the concept of waste by creating "cradle-to-cradle" product life cycles. For example, Ricoh's copiers were designed so that at the end of a copier's useful life, Ricoh would collect and dismantle the product for usable parts, shred the metal casing, and use the parts and shredded material to build new copiers. The entire copier was designed so that nothing is wasted, or thrown out, except the dust from the shredding process. PT Tirta Marta has developed a "plastic" bag made from tapioca that can biodegrade in as little as two weeks,[5] whereas traditional plastic bags, according to the Environmental Protection Agency (EPA), can take as long as 1,000 years.[6]

- **Adopting sustainable purchasing practices.** Many of the world's largest companies, such as Walmart, Costco, and The Home Depot, are now actively assessing the sustainability level of potential suppliers as a factor in selecting suppliers. As leading retailers in the world, these companies' purchasing policies are forcing other companies to adopt more sustainable business practices.
- **Marketing with integrity.** Consumers are driving much of the sustainability movement by demanding that companies produce environmentally friendly products and limit or eliminate operational practices that have a detrimental impact on the environment and society. The LOHAS (Lifestyles of Health and Sustainability) market segment is estimated at $355 billion per year.[7] Thus, many companies are successfully spotlighting their sustainability initiatives in order to increase market share as well as attract potential investors and employees. However, **greenwashing**, the unfortunate practice of *overstating* a company's commitment to sustainability, can ultimately backfire as investors and consumers learn the truth about company operations. Hence, honesty and integrity in marketing are imperative.
- **Distributing using fossil-fuel alternatives and carbon offsets.** While the biofuel industry is still in its infancy, the production and use of biofuels, especially those generated from nonfood waste, are expected to grow exponentially in the near future. Companies whose business is heavily reliant upon fossil fuels, such as oil companies (Valero), airlines (United), and distribution companies (UPS), are especially interested in the development of sustainable fuel sources. In fact, many companies, such as UPS and Walmart, are investing in hybrid fleets in order to reduce energy consumption, which thereby reduces their costs. In addition, many companies are investing in carbon offsets through such measures as reforestation projects. For example, in 2013 UPS planted 1.3 million trees, and in 2014 it pledged to plant 2 million trees as part of its efforts to offset greenhouse gas emissions.[8] United Airlines offers a carbon-offset program that allows customers, as soon as they purchase their ticket, to offset the carbon emissions resulting from their air travel by donating to reforestation and renewable energy projects. The website automatically calculates the donation amount needed to offset the greenhouse gas emissions.
- **Providing customer service past the warranty date.** Environmentally conscious companies don't want customers discarding products that are in need of repair, or no longer serve the customer's needs or wants, thus, they provide the customer with other options. REI Co-op and Patagonia provide customers with free repair tips and offer repair services at a nominal charge. Best Buy recycles any electronic equipment regardless of where the customer bought it, and Apple buys back iPhones, iPads, and iPods by issuing credit toward the purchase of a new device.

If you are interested in learning more about what companies are doing to become more sustainable, visit the Environmentalleader.com website and sign up for its daily e-mail.

See Exercises E2-20A and E2-32B

[5] http://www.tirtamarta.com/green-plastic-solutions/about-us/

[6] http://www.nytimes.com/2007/04/01/weekinreview/01basics.html

[7] http://www.lohas.com/whos-changing

[8] http://compass.ups.com/how-ups-helps-turn-world-greener

How Do Companies Define Cost?

Now that you understand the most common types of companies and the primary business activities they perform, let's consider some of the specialized language that accountants use when referring to costs.

Cost Objects, Direct Costs, and Indirect Costs

3 Distinguish between direct and indirect costs

A **cost object** is anything for which managers want to know the cost. Toyota's cost objects may include the following:

- Individual units (a specific, custom-ordered Prius)
- Different models (the Prius, Rav4, and Corolla)
- Alternative marketing strategies (television advertising, sponsorship of athletic events)
- Geographic segments of the business (United States, Europe, Japan)
- Departments (human resources, R&D, legal)
- Sustainability initiatives ("Toyota TogetherGreen" conservation programs)

Costs are classified as either direct or indirect with respect to the cost object.

- A **direct cost** is a cost that can be traced to the cost object, meaning the company can readily identify or associate the cost with the cost object. For example, say the cost object is one Prius. Toyota can easily trace, or associate, the cost of four tires with one specific Prius. Therefore, the tires are a direct cost of the vehicle.
- An **indirect cost**, in contrast, is a cost that relates to the cost object but cannot be traced specifically to it. Think of an indirect cost as a cost that is jointly used or shared by several cost objects. For example, Toyota incurs substantial cost to run a manufacturing plant, including utilities, property taxes, and depreciation. Toyota cannot build a Prius without incurring these costs, so the costs are related to the Prius. However, it's impossible to trace a specific amount of these costs to one Prius. These costs are shared by all of the vehicles produced in the plant during the period. Therefore, these costs are considered indirect costs of a single Prius.

Another example might help. Think about your university's football team. Direct costs of the football team would include their uniforms, footballs, coach's salary, and travel to away games. These costs are easily identifiable with and traceable to the football team, so they are considered direct costs of the football team. Indirect costs would include costs shared by the football team and other university athletic teams, such as the athletic director's salary, shared training facilities, and shared locker rooms. Since these resources are jointly used or shared by several athletic teams, not just the football team, they are considered indirect costs of the football team.

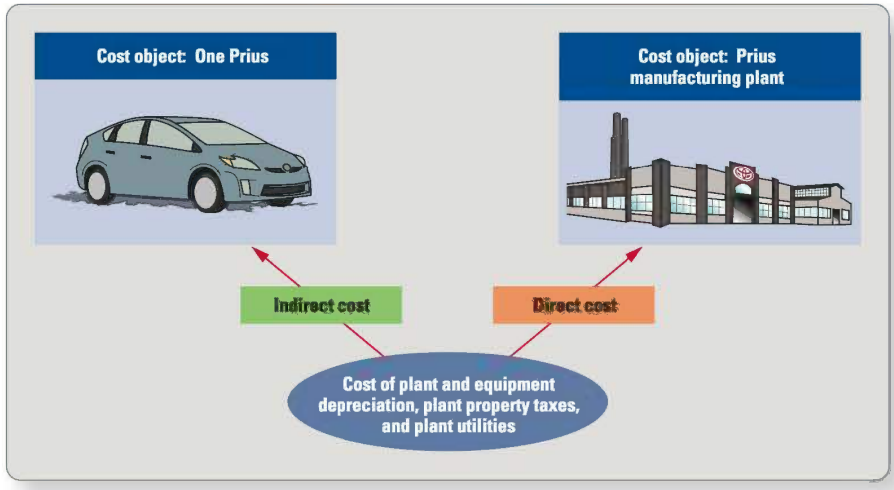
As shown in Exhibit 2-4, the same costs can be indirect with respect to one cost object, yet direct with respect to another cost object. For example, plant depreciation, plant property taxes, and plant utilities are indirect costs of a single Prius. However, if management wants to know how much it costs to operate the Prius manufacturing plant, the plant becomes the cost object; so the same depreciation, tax, and utility costs are direct costs of the manufacturing facility. Whether a cost is direct or indirect depends on the specified cost object. In this chapter, we'll be talking about a unit of product (such as one Prius) as the cost object.

If a company wants to know the *total* cost attributable to a cost object, it must **assign** all direct *and* indirect costs to the cost object. Assigning a cost simply means that you are "attaching" a cost to the cost object. For example, if Toyota wants to know the entire cost of manufacturing a Prius, it will need to assign both direct costs (such as the tires on the car) and indirect costs (such as

Why is this important?

"As a manager **making decisions**, you'll need different types of **cost information** for different types of decisions. To get the **information** you really want, you'll have to **communicate** with the accountants using precise **definitions** of cost."

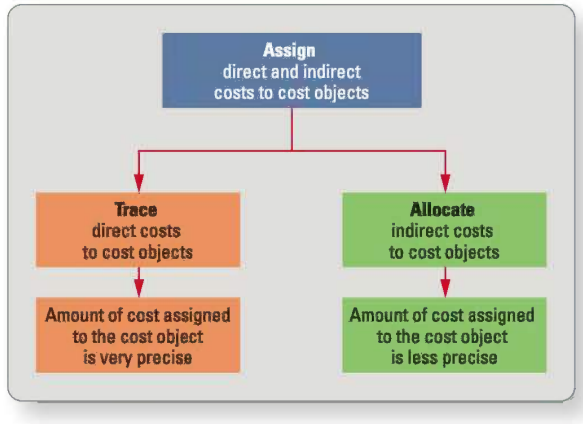
EXHIBIT 2-4 The Same Cost Can Be Direct or Indirect, Depending on the Cost Object



factory utilities) to the vehicle. Similarly, if the university wants to know the total cost of having a football team, it will have to consider both the direct and indirect costs related to the team.

The manner in which Toyota assigns costs depends on whether the costs are direct or indirect costs of the cost object. In our example, a specific vehicle is the cost object. Toyota can easily identify direct costs, such as tires, with specific vehicles. Therefore Toyota is able to trace direct costs to each vehicle manufactured in the plant. This results in a very precise cost figure, giving managers great confidence in the the amount of direct cost assigned to each vehicle. However, Toyota cannot trace indirect costs, such as utilities, to specific vehicles. Therefore, Toyota must allocate these indirect costs among all of the vehicles produced at the plant. The allocation process results in a less precise cost figure being assigned to each vehicle. We will discuss the allocation process in more detail in the following two chapters; but for now, think of allocation as dividing up the total indirect costs over all of the units produced, just as you might divide a pizza among friends. Exhibit 2-5 illustrates these concepts.

EXHIBIT 2-5 Assigning Direct and Indirect Costs to Cost Objects



Try It!

Assume a grocery store manager wants to know the cost of running the Produce Department. Thus, the Produce Department is the cost object. Which of the following would be considered direct costs of the Produce Department?

1. Wages of checkout clerks
2. Wages for workers in the Produce Department
3. Depreciation on refrigerated produce display cases
4. Cost of weekly advertisements in local newspaper
5. Cost of bananas, lettuce, and other produce
6. Baggies and twist ties available for shoppers in the Produce Department
7. Monthly lease payment for grocery store retail location
8. Cost of scales hanging in the Produce Department

Please see page 103 for solutions.

Costs for Internal Decision Making and External Reporting

4 Identify product costs and period costs

Let's now consider how managers define the cost of one of their most important cost objects: their products. Managers need this information to determine the profitability of each product as well as to make other important business decisions. Managers define costs based on how the information will be used. Will the information be used for 1) internal decision making, or for 2) external reporting?

Costs for Internal Decision Making

When making internal decisions, managers must consider all costs incurred across the value chain. For example, when determining a suitable selling price for a Prius, Toyota must consider the cost to research, design, manufacture, market, distribute, and service that model. A Prius's total cost includes the costs of *all resources used throughout the value chain*. For Toyota, the total cost of a particular model, such as the Prius, is the total cost to research, design, manufacture, market, distribute, and service that model. Before launching a new model, managers predict the total cost of the model to set a selling price that will cover *all costs* plus return a profit. By comparing each model's sales revenue with its total cost across the value chain, Toyota can determine which models are most profitable. Perhaps Rav4s are more profitable than Corollas. Marketing can then focus on advertising and promoting the most profitable models. We'll talk more about total costs in Chapter 8, where we discuss many common business decisions.

Costs for External Reporting

For external reporting purposes, management must follow Generally Accepted Accounting Principles (GAAP). For external reporting purposes, GAAP requires that certain costs of the company be attached, or assigned, to units of product in inventory, while other costs are treated as operating expenses of the period. Let's define each of these types of costs.

- Product costs are the costs incurred by *manufacturers to produce* their products or incurred by *merchandisers to purchase* their products. Notice how these costs relate to *obtaining inventory*, either through manufacturing the products or purchasing them. Thus, these costs are incurred in the production or purchases function of the value chain. For external financial reporting, GAAP requires that these costs be assigned to inventory until the related products are sold. When the products are sold, these costs are removed from the company's inventory and expensed as Cost of Goods Sold.
- Period costs are the costs incurred by the company that do ***not*** get treated as inventory, but rather, are expensed immediately in the period in which they are incurred. These costs do ***not*** relate to manufacturing or purchasing product. Rather, they include costs

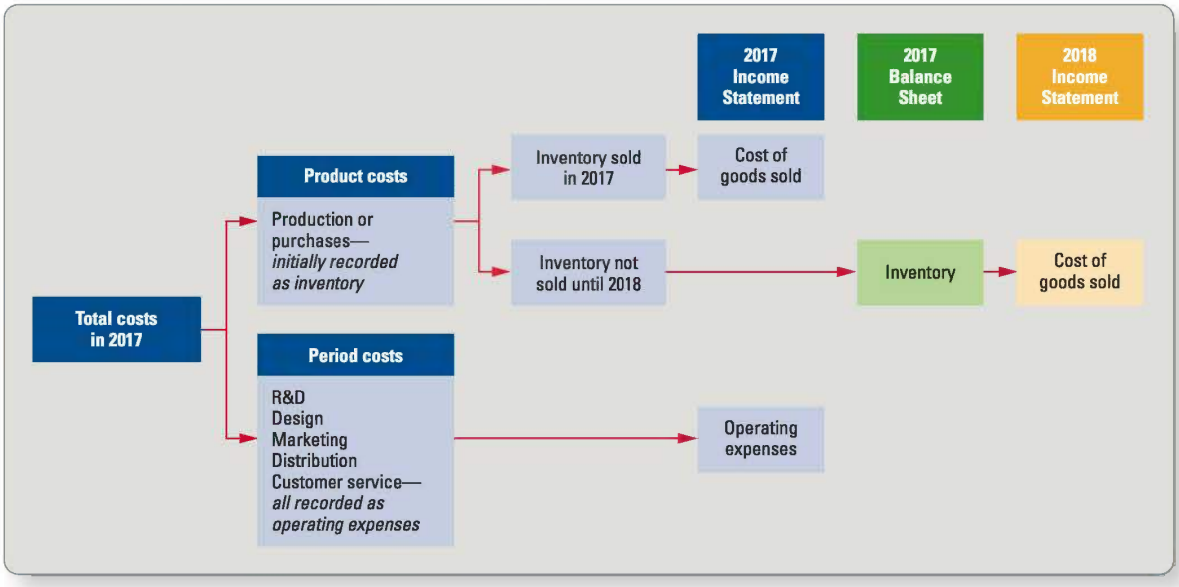
incurred in every other function of the value chain, including R&D, design, marketing, distribution, and customer service. In essence, any cost that is not treated as inventory, is treated as a period cost. While accountants refer to these costs as "period costs," most other people refer to them as "operating expenses" or "selling, general, and administrative expenses" (SG&A). These terms are essentially synonymous and arise from the fact that these are costs of operating the business over a specific period of time.

Keep the following two important rules of thumb in mind:

> Product costs are costs assigned to the company's inventory on the balance sheet. In essence, they are the costs of manufacturing or purchasing the company's products.
>
> Period costs are often called "operating expenses" or "selling, general, and administrative expenses" (SG&A) on the company's income statement. Period costs are always expensed in the period in which they are incurred and never become part of an inventory account.

Exhibit 2-6 shows that a company's total costs can be divided into two categories: product costs (those costs treated as part of inventory until the product is sold) and period costs (those costs expensed in the current period regardless of when inventory is sold). GAAP requires this distinction for external financial reporting. Study the exhibit carefully to make sure you understand how the two types of costs affect the income statement and balance sheet.

EXHIBIT 2-6 Total Costs, Product Costs, and Period Costs



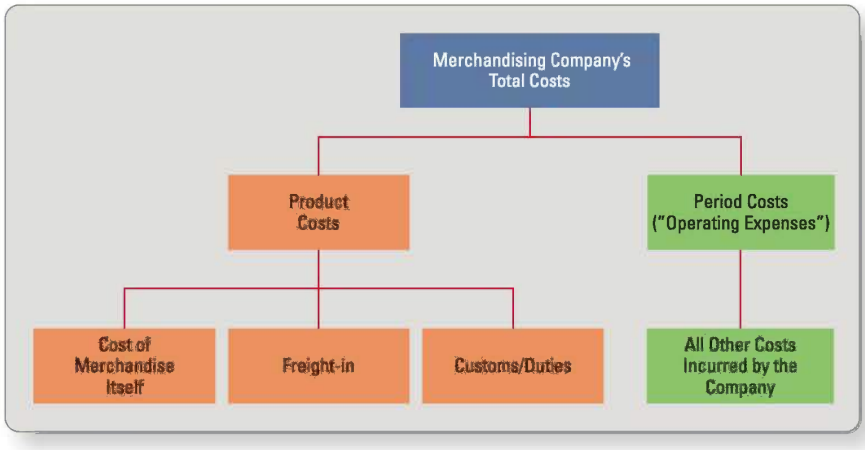
Now that you understand the difference between product costs and period costs, let's take a closer look at the specific costs that are treated as product costs in merchandising and manufacturing companies.

Merchandising Companies' Product Costs

Merchandising companies' product costs include *only* the cost of purchasing the inventory from suppliers plus any costs incurred to get the merchandise to the merchandiser's

place of business and ready for sale. Typically, these additional costs include freight-in costs and import duties or tariffs, if the products were purchased from overseas. Why does the cost of the inventory include freight-in charges? Think of the last time you made a purchase from an online website, such as Amazon.com. The website may have shown the product's price as $15, but by the time you paid the shipping and handling charges, the product really cost you around $20. Likewise, merchandising companies pay freight-in charges to get the goods to their place of business. If they purchased the goods from overseas, there is a good chance they also had to pay import duties to bring the goods into the United States. As shown in Exhibit 2-7, these charges become part of the cost of their inventory.

EXHIBIT 2-7 Summary of a Merchandising Company's Total Costs



For example, The Home Depot's product costs include what the company paid for its store merchandise plus freight-in and import duties. The Home Depot records these costs in an asset account—Inventory—until it *sells* the merchandise. Once the merchandise is sold, it belongs to the customer, not The Home Depot. Therefore, The Home Depot takes the cost out of its inventory account and records it as an expense—the *cost of goods sold*. The Home Depot expenses all other costs incurred during the period, such as salaries, utilities, advertising, and property lease payments, as "operating expenses."

Try It!

Which of the following costs are treated as product costs by a *merchandising company*, such as Walmart? Which costs are treated as period costs?

1. Cost of leasing the retail locations
2. Cost of managers' and sales associates' salaries
3. Cost of merchandise purchased for resale
4. Cost of designing and operating the company's website
5. Cost of shipping merchandise to the store
6. Cost of providing free shipping to customers who buy product online
7. Cost of utilities used in running the retail locations
8. Cost of import duties paid on merchandise purchased from overseas suppliers
9. Depreciation on store shelving and shopping carts

Please see page 103 for solutions.

Manufacturing Companies' Product Costs

Manufacturing companies' product costs include *only* those costs related to producing, or manufacturing, their products. As shown in Exhibit 2-8, manufacturers such as Toyota incur three types of manufacturing costs when making a vehicle: direct materials, direct labor, and manufacturing overhead.

EXHIBIT 2-8 Summary of the Three Types of Manufacturing Costs

Direct Materials (DM)

Manufacturers convert raw materials into finished products. Direct materials are the *primary* materials that become a physical part of the finished product. The Prius's direct materials include steel, tires, engines, upholstery, and so forth. Toyota can trace the cost of these materials (including freight-in and any import duties) to specific units or batches of vehicles; thus, they are considered direct costs of the vehicles.

Direct Labor (DL)

Although many manufacturing facilities are highly automated, most still require some direct labor to convert raw materials into a finished product. Direct labor is the cost of compensating employees who physically convert raw materials into the company's products. At Toyota, direct labor includes the wages and benefits of machine operators and technicians who build and assemble the vehicles. Toyota can trace the time each of these employees spends working on specific units or batches of vehicles; thus, the cost of this labor is considered a direct cost of the vehicles.

Manufacturing Overhead (MOH)

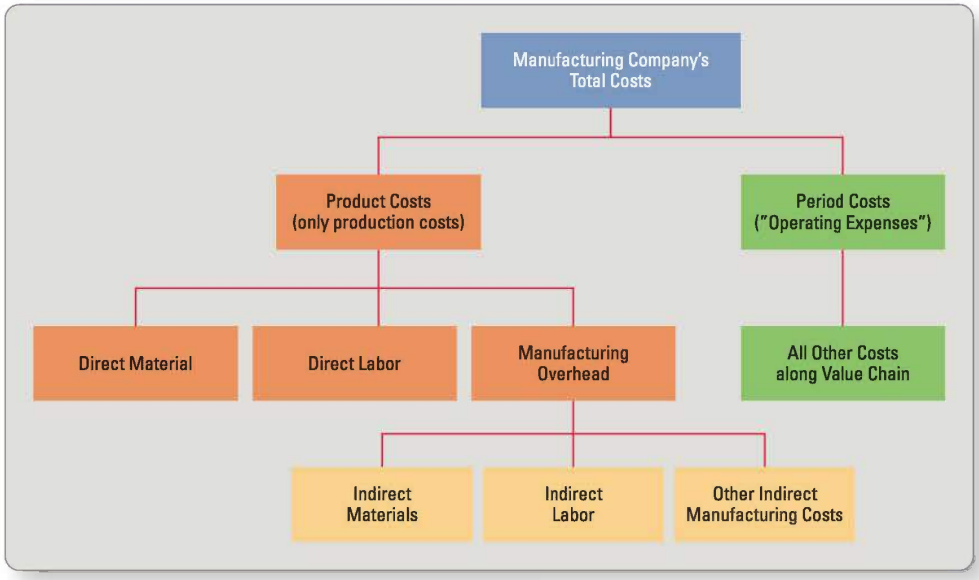
The third production cost, manufacturing overhead, *includes all manufacturing costs other than direct materials and direct labor.* In other words, manufacturing overhead includes *all indirect manufacturing costs*. Manufacturing overhead is also referred to as factory overhead because all of these costs relate to the factory. Manufacturing overhead has three components: indirect materials, indirect labor, and other indirect manufacturing costs.

- Indirect materials include materials used in the plant that are not easily traced to individual units. For example, indirect materials often include janitorial supplies, oil and lubricants for the machines, and any physical components of the finished product that are very inexpensive. For example, Toyota might treat the invoice sticker placed on each vehicle's window as an indirect material rather than a direct material. Even though the cost of the sticker (roughly 10 cents) *could* be traced to the vehicle, it wouldn't make much sense to do so. Why? Because the cost of tracing the sticker to the vehicle outweighs the benefit management receives from the increased accuracy of the information.
- Indirect labor includes the cost of all employees working *in the plant* other than those employees directly converting the raw materials into the finished product. For example, at Toyota, indirect labor includes the salaries, wages, and benefits of plant forklift operators, plant security officers, plant janitors, and plant supervisors.

- **Other indirect manufacturing costs** include such *plant-related* costs as depreciation on the plant and plant equipment, plant property taxes and insurance, plant repairs and maintenance, and plant utilities. Indirect manufacturing costs have grown tremendously in recent years as manufacturers automate their plants with the latest advanced manufacturing technology.

Exhibit 2-9 summarizes how manufacturers classify their costs.

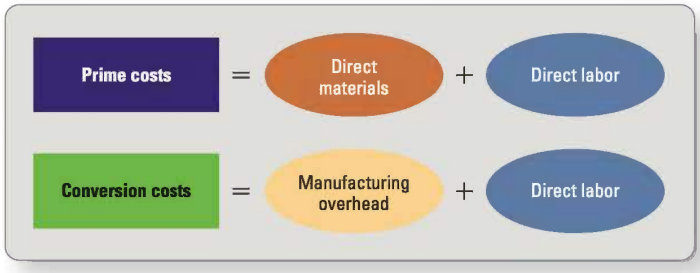
EXHIBIT 2-9 Summary of a Manufacturing Company's Total Costs



Prime and Conversion Costs

Managers and accountants sometimes talk about certain combinations of manufacturing costs. As shown in Exhibit 2-10, **prime costs** refer to the combination of direct materials and direct labor. Prime costs used to be the primary costs of production. However, as companies have automated production with expensive machinery, manufacturing overhead has become a greater cost of production. **Conversion costs** refer to the combination of direct labor and manufacturing overhead. These are the costs of *converting* raw materials into finished goods.

EXHIBIT 2-10 Prime and Conversion Costs



STOP & THINK

What is the difference between raw materials, direct materials, and indirect materials?

Raw materials are materials that have not yet been used. Once used, materials can be classified as direct or indirect. Direct materials are the primary physical components of a product. Indirect materials are materials used in the production plant that don't become part of the product (such as machine lubricants) or materials that do become part of the product but are insignificant in cost (such as the price sticker on a car).

Additional Labor Compensation Costs

The cost of labor, in all areas of the value chain, includes more than the salaries and wages paid to employees. The cost also includes company-paid fringe benefits such as health insurance, retirement plan contributions, payroll taxes, and paid vacations. These costs are very expensive. Health insurance premiums, which have seen double-digit increases for many years, often amount to $500–$1,500 per month for each employee electing coverage. Many companies also contribute an amount equal to 3% to 6% of their employees' salaries to company-sponsored retirement 401(k) plans. Employers must pay Federal Insurance Contributions Act (FICA) payroll taxes to the federal government for Social Security and Medicare, amounting to 7.65% of each employee's gross pay. In addition, most companies offer paid vacation and other benefits. Together, these fringe benefits usually cost the company an *additional* 35% beyond gross salaries and wages. Thus, an employee making a $40,000 salary actually costs the company about $54,000 to employ ($40,000 × 1.35). These fringe-benefit costs are expensed as period costs for all nonmanufacturing employees. However, they are treated as a product cost if they relate to employees working in the manufacturing plant. In Chapter 3 we'll discuss how these additional labor costs get assigned to products.

Recap: Product Costs Versus Period Costs

In this half of the chapter, you have learned about the activities and costs incurred by three different types of companies. You have also learned the difference between direct and indirect costs. Finally, you have learned the difference between product costs and period costs. Exhibit 2-11 summarizes some of these concepts for you.

EXHIBIT 2-11 Summary of Product Costs Versus Period Costs

	----------Total Costs Across the Value Chain----------	
	Product Costs	**Period costs**
Service Companies	None	All costs across value chain
Merchandising Companies	Cost of merchandise itself Freight-in Import duties and customs, if any	All costs across value chain except product costs
Manufacturing Companies	Direct materials Direct labor Manufacturing overhead	All costs across value chain except product costs
Accounting Treatment	Treat as inventory until product is sold. When sold, expense as "Cost of Goods Sold."	Expense in period incurred as "Operating Expenses" or "Selling, General, and Administrative Expenses."

Decision Guidelines

Building Blocks of Managerial Accounting

Dell engages in *manufacturing* when it assembles its computers, *merchandising* when it sells them on its website, and support *services* such as start-up and implementation services. Dell had to make the following types of decisions as it developed its accounting systems.

Decision	Guidelines
How do you distinguish among service, merchandising, and manufacturing companies? How do their balance sheets differ?	*Service companies:* • Provide customers with intangible services • Have no inventories on the balance sheet *Merchandising companies:* • Resell tangible products purchased ready-made from suppliers • Have only one category of inventory *Manufacturing companies:* • Use labor, plant, and equipment to transform raw materials into new finished products • Have three categories of inventory: 1. Raw materials inventory 2. Work in process inventory 3. Finished goods inventory
What business activities add value to companies?	All of the elements of the value chain, including the following: • R&D • Design • Production or purchases • Marketing • Distribution • Customer service
What costs should be assigned to cost objects such as products, departments, and geographic segments?	Both direct and indirect costs are assigned to cost objects. Direct costs are traced to cost objects, whereas indirect costs are allocated to cost objects.
Which costs are useful for internal decision making, and how are costs classified for external reporting?	Managers use *total costs* for internal decision making. However, GAAP requires companies to distinguish between product costs and period costs for external reporting purposes.
What costs are treated as product costs under GAAP?	• *Service companies:* Usually no product costs since they don't carry inventory • *Merchandising companies:* The cost of merchandise purchased for resale plus all of the costs of getting the merchandise to the company's place of business (for example, freight-in and import duties) • *Manufacturing companies:* Direct materials, direct labor, and manufacturing overhead
How are product costs treated on the financial statements?	Product costs are initially treated as an asset (inventory) on the balance sheet. These costs are expensed (as cost of goods sold) on the income statements when the products are sold.