

# Managerial Accounting for Managers

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# Managerial Accounting for Managers

*Sixth Edition*

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Graw  
Hill**

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## MANAGERIAL ACCOUNTING FOR MANAGERS, SIXTH EDITION

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## About the Authors



Courtesy of Eric W. Noreen

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

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

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

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



Courtesy of Louise St. Romain—Fast Cat Studios

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

*Finance*; the *Journal of Accountancy*; *Issues in Accounting Education*; and the *Journal of Business Logistics*.

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

Prior to joining the faculty at Miami University, Professor Brewer was employed as an auditor for Touche Ross in the firm’s Philadelphia office. He also worked as an internal audit manager for the Board of Pensions of the Presbyterian Church (U.S.A.). ■



Courtesy of Ray H. Garrison

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

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

## Dedication

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

—Eric W. Noreen, Peter C. Brewer,  
and Ray H. Garrison

# Focus on the Future Manager

with Noreen/Brewer/Garrison

In *Managerial Accounting for Managers*, the authors have crafted a streamlined managerial accounting book that is perfect for non-accounting majors who intend to move into managerial positions. The traditional Process Costing, Statement of Cash Flows, and Financial Statement Analysis chapters have been dropped to enable instructors to **focus their attention on the bedrocks of managerial accounting**—planning, control, and decision making. Noreen/Brewer/Garrison focuses on the fundamentals, allowing students to develop the conceptual framework managers need to succeed.

In its sixth edition, *Managerial Accounting for Managers* continues to adhere to three core standards:

**FOCUS.** Noreen/Brewer/Garrison pinpoint the key managerial concepts students will need in their future careers. With no journal entries or financial accounting topics to worry about, students can focus on the fundamental principles of managerial accounting. The manager approach in Noreen allows students to develop the conceptual framework needed to succeed, with a focus on decision making and analytical skills.

*"This textbook is well written and is very suitable for an introductory managerial accounting course. This textbook provides many resources for instructors and students. The focus companies in the beginning of every chapter are very interesting; they help students appreciate the importance of managerial accounting in real companies. Connect is very useful and is well-integrated with the textbook."*

Wan-Ting (Alexandra) Wu,  
University of Massachusetts  
Boston

*"I was pleased with the content, depth, examples and problems presented in the text. I would definitely recommend using this book to a colleague. One of my favorite aspects of the books is the Real World example that each chapter starts with. Automatically students are able to bridge the gap between the concepts and the real world as they read through the chapter."*

Jaclyn Boichat, Johnson & Wales  
University



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*“Designed for accounting and non-accounting students alike, Noreen, Managerial Accounting for Managers is a textbook resource filled with opportunities for students to develop an understanding of how accounting information is used for managerial decision making and practice analyzing business decisions. Excel applications are integrated within the narrative for chapter objectives. Uniquely robust learning activities include the comprehensive Foundational 15 problems and integration exercises.*

*Noreen, Managerial Accounting for Managers is a pedagogically solid and versatile educational resource for developing and applying analytical skills for business decision making.”*

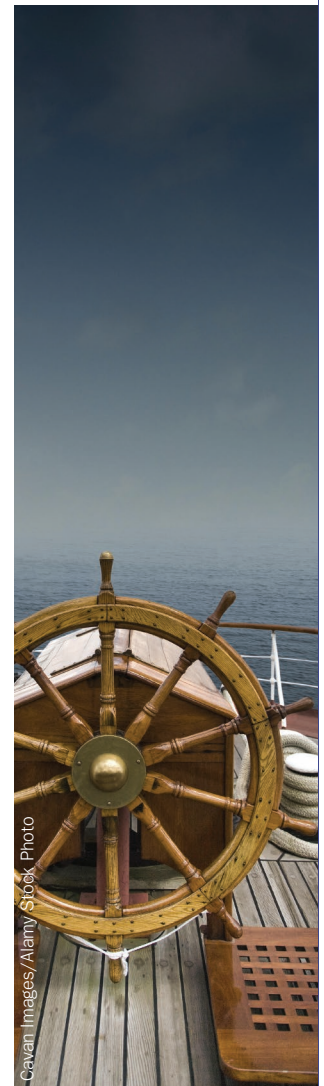
*Janet Dausey, Northeast Wisconsin Technical College*

*“It's a practical, concise text that doesn't waste time with extraneous material.”*

*Karen B. McCarron, Georgia Gwinnett College*

**RELEVANCE.** Building student interest with its insightful Entrepreneur Spotlights opening each chapter, current In Business examples throughout the text, and tried-and-true end-of-chapter material, students will always see the real-world applicability of Noreen/Brewer/Garrison.

**BALANCE.** There is more than one type of business, and so Noreen/Brewer/Garrison covers a variety of business models, including nonprofit, retail, service, wholesale, and manufacturing organizations. Service company examples are highlighted with icons in the margins of the text.



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# New in the Sixth Edition

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

- New, auto-graded **Excel Data Analytics Exercises** help prepare students with career-ready skills and an analytical mindset. These exercises teach students how to analyze data using Excel-based tools such as Goal Seek, Solver, and Pivot Tables, while also teaching them how to communicate their resulting insights using a variety of Excel's charting capabilities.
- New, auto-graded **Tableau Data Visualization Exercises** that introduce students to this widely used data visualization software package, which they will likely encounter during their careers.
- A **Data Analytics Implementation Guide** (in Connect) to help instructors integrate **Data Analytics Exercises** into their managerial accounting class, and a **Data Analytics Exercise Tutorial** to help students as they work through Excel exercises.
- Over 1,200 new multiple-choice test bank questions are now included in **Connect**. These questions include a variety of conceptual and computational formats as well as static and algorithmic formats.
- The chapter previously titled "Performance Measurement in Decentralized Organizations" has been split into two chapters. One of those two chapters, titled "Strategic Performance Measurement," greatly expands our coverage of the balanced scorecard—a topic that is pervasive in practice. This chapter also provides more than 70 examples of scorecard measures that will enrich your students' understanding of nonfinancial performance measurement within the learning and growth, internal business process, and customer perspectives of the scorecard. This chapter also extends our coverage of how companies measure their performance with respect to corporate social responsibility.
- The **Integration Exercises**, included in the back of the book, have been expanded from 8 to 12. These exercises help students see how the learning objectives across chapters integrate with one another. They are also suitable for both a flipped classroom model and an in-class active learning environment as they engage students and encourage critical thinking.
- **Audio Hints** have been added to certain problems in **Connect** and offer brief explanations of the key steps students need to solve a specific end-of-chapter problem. With callouts to individual chapter learning objectives, audio hints are both a helpful tool for completing an assignment as well as an additional opportunity for students to link their work back to the chapter content.
- **Entrepreneur Spotlights** are new chapter openers for the sixth edition of *Managerial Accounting for Managers*. With the majority of businesses being small businesses, we felt it important to emphasize a diverse group of entrepreneurs and their roles in the economy.
- **In Business boxes** are updated throughout to provide relevant and current real-world examples for use in classroom discussion and to support student understanding of key concepts as they read through a chapter.



# New in the Sixth Edition

## Prologue

- The Prologue has a new discussion of Big Data and Data Analytics, added coverage of the CSCA exam, and an updated version of the IMA's Statement of Ethical Professional Practice. It also includes a new In Business box that introduces students to the IMA's Management Accounting Competency Framework.

## Chapter 1

- Learning objective 1–5 was restated to focus on relevant and irrelevant costs. The terms *controllable* and *uncontrollable costs* as well as *value-added* and *non-value-added costs* were added to the chapter. Four new In Business boxes were added. The Cost of Quality appendix was deleted, and a subset of the deleted material was moved to Chapter 12 (Strategic Performance Measurement).

## Chapter 2

- The operating leverage discussion was adjusted to better highlight its emphasis on analyzing changes in unit sales. Problems 2–19, 2–24, and 2–25 were revised, and three new In Business boxes were added.

## Chapter 3

- We added a new learning objective related to calculating ending inventories for the balance sheet and cost of goods sold for the income statement. Also, Foundational 15, Exercise 3–17, and Problem 3–22 were revised, and three new In Business boxes were added.

## Chapter 4

- This chapter added three new In Business boxes

## Chapter 5

- This chapter added two new In Business boxes

## Chapter 6

- We changed the language accompanying learning objective 6–3 from the manufacturing-centric “make or buy decisions” to the broader business language

of “sourcing decisions.” We created three new end-of-chapter exercises (6–11, 6–18, and 6–20) to illustrate (1) the decision to add a product line, (2) sourcing decisions in a nonmanufacturing context, and (3) the relevance of replacement costs in decision making. Also, three new In Business boxes were added.

## Chapter 7

- The formula for the profitability index was revised to become “Present value of cash inflows ÷ Investment required.” A new footnote explains how to use Microsoft Excel's IRR functionality to compute the internal rate of return. Also, we added four new In Business boxes.

## Chapter 8

- The “Why and How Organizations Create Budgets” discussion was cut in half while retaining all of the key insights. This chapter added two new In Business boxes.

## Chapter 9

- We replaced the learning objective related to “common errors” with a learning objective focusing on preparing a flexible budget performance report with more than one cost driver. We added two new In Business boxes.

## Chapter 10

- This chapter added two new In Business boxes.

## Chapter 11

- We changed the chapter title to Responsibility Accounting Systems. Coverage of operating performance measures and the balanced scorecard was removed. The subject matter previously in Appendices 11A (Transfer Pricing) and 11B (Service Department Charges) was integrated into the main body of the chapter. We added two new In Business boxes.

## Chapter 12

- This is a new chapter. It greatly expands our coverage of the balanced scorecard and corporate social responsibility. The chapter includes nine new end-of-chapter exercises and problems.

# Noreen's Powerful Pedagogy

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

## NEW\* Data Analytics Exercises

**NEW Data Analytics Exercises** are created to foster creating career-ready students by teaching them how to use software tools to derive managerial insights and communicate them to stakeholders. These new exercises, which appear in Connect, are linked to a diverse range of learning objectives that span numerous chapters, are auto-graded, and offer a scaffolded approach to introducing data analytics to students.

- **NEW Tableau Dashboard Activities** allow students to explore live Tableau dashboards directly integrated into Connect and include auto-graded questions focused on both calculations and analysis. Students can check their understanding and apply what they are learning within the framework of analytics and critical thinking.

- **NEW Applying Tableau Exercises** featuring Tableau at the end of each chapter. These exercises are auto-gradable in Connect and help students develop in-demand skills in analyzing and interpreting data and effectively communicating findings. Students will be provided data-

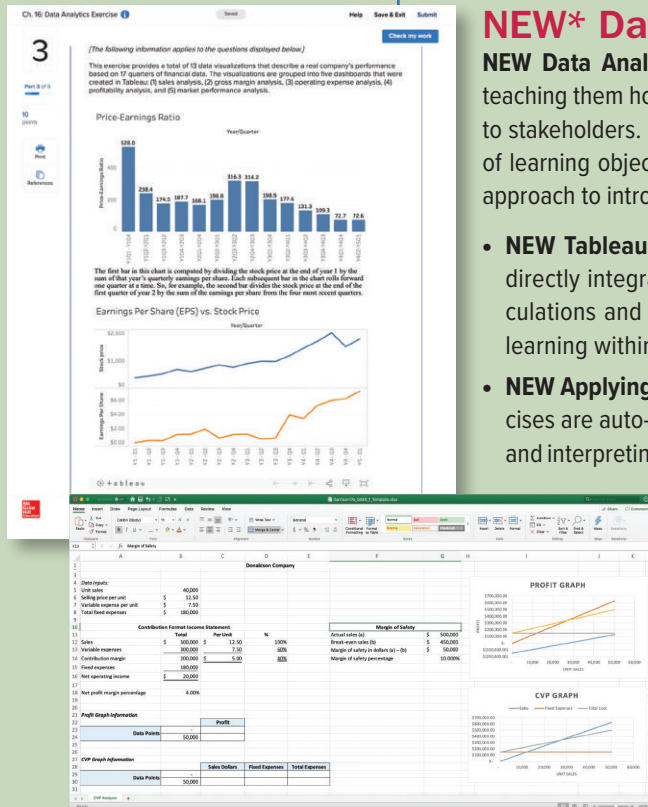
sets as well as numerous training and video tutorials and step-by-step instructions to build dashboards that visualize data using Tableau software. Over the course of these exercises, students will gain both managerial insights as well as confidence in telling the story of data through visualization software.

- **NEW Power BI Exercises** will introduce and teach students to drive better business decisions by analyzing data for insights via Microsoft's Power BI software. Power BI aims to provide interactive visualizations, business intelligence capabilities, and supports users' ability to gain deeper data insight. Users create their own reports and dashboards, harnessing data to tell a compelling business story. As with Applying Tableau, students will be provided datasets, numerous training and video tutorials, and step-by-step instructions to learn how to visualize data using Power BI software.

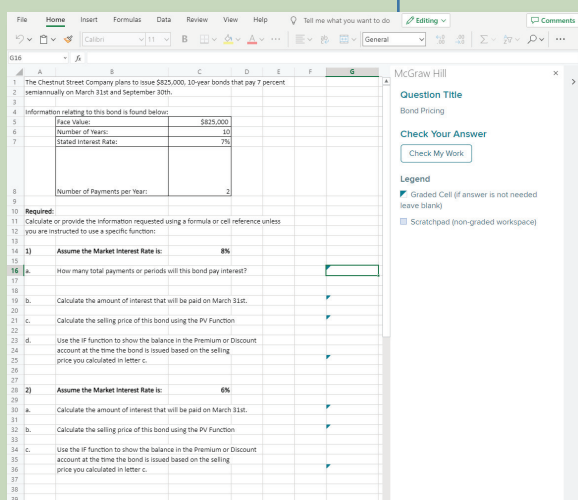
- **NEW Excel Analytics** were created to allow students to work with complex datasets in Excel. Created to support student Career Readiness, students need to use Excel-based tools to analyze datasets and derive solutions using a variety of data management, data analysis, and data visualization techniques. Students are provided datasets via Connect, video training embedded in Connect, and step-by-step tutorials. These go beyond basic data manipulations with Excel skills.

## NEW\* Integrated Excel Assignments

**Integrated Excel** assignments pair the power of Microsoft Excel with the power of Connect. A seamless integration of Excel within Connect, Integrated Excel questions allow students to work in live, auto-graded Excel



Microsoft Excel



Microsoft Excel

spreadsheets—no additional logins, no need to upload or download files. Instructors can choose to grade by formula or solution value, and students receive instant cell-level feedback via integrated Check My Work functionality.

## NEW\* Entrepreneur Spotlight

All chapters begin with a new **Entrepreneur Spotlight** that serves four purposes. First, this new feature acknowledges the importance of small business owners and the instrumental role they play in supporting a thriving economy. Second, each spotlight links the principles of managerial accounting to a real-world small business context. Third, each spotlight describes the company's commitments to its corporate social responsibilities, thereby exposing our students to a stakeholder-based philosophy of organizational management. Finally, the collective body of Entrepreneurial Spotlights depicts the diverse backgrounds of our world's entrepreneurs, thereby helping **all** of our students understand that starting a new business is an opportunity available to them.



Interim Archives/Contributor/Getty Images

### ENTREPRENEUR SPOTLIGHT

Neil Blumenthal and Dave Gilboa co-founded **Warby Parker** to solve what they saw as a simple problem—the price of eyeglasses was too high. By designing their own glasses and interacting directly with customers, they were able “to provide high quality, better-looking prescription eyewear at a fraction of the going price.” Today the company is

## NEW\* Connect-Only Test Bank

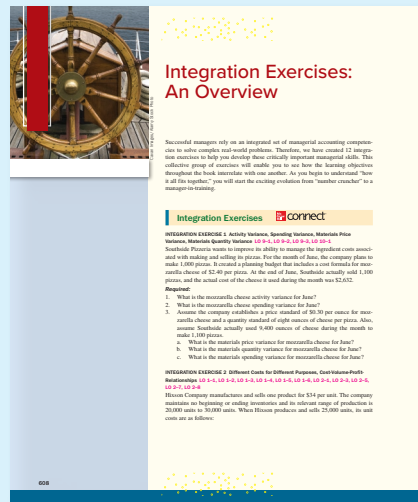
A new online-only test bank is now available in Connect, containing more than **1,200 new multiple-choice** test bank questions. These new, author-created **Connect-Only Test Bank** questions were written in such a way to prevent students from finding answers on external sites. The questions are presented in a combination of static and algorithmic (both quantitative and qualitative algo) modes and they cover all learning objectives in all of the chapters. The questions are qualitative and quantitative in nature, and they span the entire “degree-of-difficulty” continuum, including easy, medium, and hard.

## NEW\* Author-Created Learning Objective Videos

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

## Writing Assignment

Available within McGraw Hill Connect and McGraw Hill Connect Master, the **Writing Assignment** tool delivers a learning experience to help students improve their written communication skills and conceptual understanding. As an instructor, you can assign, monitor, grade, and provide feedback on writing more efficiently and effectively.



## Integration Exercises: An Overview

Successful managers rely on an integrated set of managerial accounting competencies to solve complex real-world problems. Therefore, we have created 12 integration exercises to help you develop these critically important managerial skills. This collection of exercises will enable you to see how the learning objectives throughout the book interrelate with one another. As you begin to understand "how it all fits together," you will start the exciting evolution from "number cruncher" to a manager-to-be.

### Integration Exercises

**Integration Exercise 1: Activity Variance, Spending Variance, Materials Price Variance, Materials Quantity Variance** LO 8-1, LO 8-2, LO 8-3, LO 8-4  
Sustainable Plastics wants to improve its ability to manage the significant costs associated with making and selling its product. For the month of June, the company plans to make 1,000 pieces. It would purchase 400 pounds of plastic (4 pounds per piece) at a standard cost of \$2.50 per pound. At the end of June, Sustainable actually sold 1,000 pieces, and the actual cost of the plastic it used during the month was \$2,000.

**Required:**  
1. What is the materials price variance for Sustainable?  
2. What is the materials quantity variance for Sustainable?  
3. Assume the company establishes a price standard of \$2.00 per pound for materials and a quantity standard of eight ounces of plastic per piece. Also, assume Sustainable actually used 4,000 ounces of plastic during the month to make 1,000 pieces.  
4. What is the materials price variance for Sustainable?  
5. What is the materials quantity variance for Sustainable?  
6. What is the materials spending variance for Sustainable?

**Integration Exercise 2: Different Costs for Different Products, Contribution Profits** LO 2-1, LO 2-2  
Hansen Company manufactures and sells one product for \$24 per unit. The company maintains no beginning or ending inventory and its relevant range of production is 20,000 units to 30,000 units. When Hansen produces and sells 25,000 units, its unit costs are as follows:

**Required:**  
1. Check your worksheet by changing the variable selling cost in the data area to \$900, keeping all of the other data the same as in Exhibit 15-7. If your worksheet is operating properly, the net operating income under the traditional format income statement and under the variable cost format income statement should now be \$700 and the contribution margin should now be \$4,700. If you do not get these answers, find the error in your worksheet and correct them. How much is the gross margin? Did it change? Why or why not?  
2. Suppose that sales are 10% higher as shown below:

Sales	\$12,000
Variable costs	
Cost of goods sold	\$6,000
Variable selling	\$600
Variable administrative	\$400
Fixed costs	
Manufacturing	\$2,000
Period administrative	\$1,500

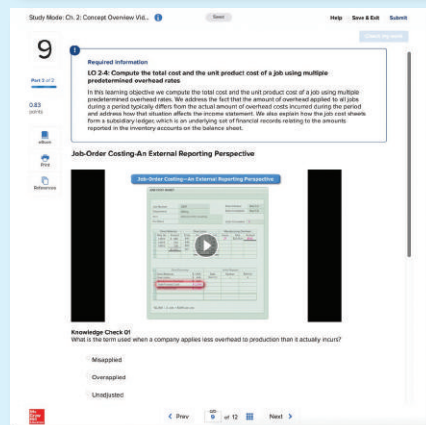
Enter this new data into your worksheet. Make sure you change all of the data that are different—just part of the data. Print or copy the income statements from your worksheet. What happened to the variable cost cost? The fixed costs? What was the result?

**The Foundational 15**   
LEARNING OBJECTIVES 1-1, 1-2, 1-3, 1-4, 1-5, 1-6

Marine Company's relevant range of production is 7,000 units to 12,500 units. When it produces and sells 10,000 units, its average cost per unit is as follows:

	Average Cost per Unit
Direct materials	\$6.00
Direct labor	\$3.00
Variable manufacturing overhead	\$1.50
Fixed manufacturing overhead	\$4.00
Fixed selling expense	\$2.00
Fixed administrative expense	\$1.00
Variable administrative expense	\$0.50

**Required:**  
1. For financial accounting purposes, what is the total amount of product costs incurred to make 10,000 units?  
2. For financial accounting purposes, what is the total amount of period costs incurred to sell 10,000 units?  
3. If 8,000 units are produced and sold, what is the variable cost per unit produced and sold?  
4. If 8,000 units are produced and sold, what is the total amount of variable costs related to the units produced and sold?  
5. If 12,500 units are produced and sold, what is the total amount of variable costs related to the units produced and sold?  
6. If 12,500 units are produced, what is the average fixed manufacturing cost per unit produced?  
7. If 8,000 units are produced, what is the average fixed manufacturing cost per unit produced?  
8. If 12,500 units are produced, what is the average fixed manufacturing cost per unit produced?  
9. If 8,000 units are produced, what is the total amount of fixed manufacturing cost incurred to support this level of production?



## Additional Integration Exercises

We have added four new Integration Exercises for a total of twelve (located in the back of the book) that integrate learning objectives across chapters. These exercises will increase the students' level of interest in the course because they forge the connections across chapters. Rather than seeing each chapter as an isolated set of learning objectives, students begin to see how "it all fits together" to provide greater managerial insight and more effective planning, controlling, and decision making. The integration exercises also are tailor-made for flipping the classroom because they offer challenging questions that require students to work in teams to derive solutions that synthesize what they have been learning throughout the semester.

## The Foundational 15

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

*"This is my favorite part of the text. Its really helps students to go through all the concepts in the chapters with the same data. Shorter exercises that only do one step are okay, but as a wrap up, the Foundational 15 is much better."*

Sandra Copa, North Hennepin Community College


## Concept Overview Videos

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

## In Business Boxes

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

**IN BUSINESS**



DeLima/Shutterstock

**THE ADMINISTRATIVE COSTS OF REDESIGNING THE OFFICE**

For decades American companies sought to "cram workers into tighter spaces with few separations between colleagues . . . (spending) millions of dollars . . . to create rows of open desks, intimate conference rooms, and elaborate communal gathering areas." However, in the post-COVID-19 era companies are incurring additional administrative costs as they reexamine and redesign their office spaces. For example, HP welcomed back each employee to one of its offices with a kit containing three new office essentials—hand sanitizer, a mask, and gloves. McCain Workgroup's New York office has closed its cafeteria and ordered dozens of refrigerators and microwaves so employees can bring their lunches to work. *Discover Financial Services* is considering seating its employees at every other workstation, whereas *WellWork* is removing 30,000 conference-room chairs from its global offices to enable proper social distancing.

Source: Chip Cutler and Suzanne Vanica, "Offices Resuming to Keep Germs at Bay," *The Wall Street Journal*, May 12, 2020, pp. B1 and B5.

## Managerial Accounting in Action Vignettes

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

To help explain the role of CVP analysis in business decisions, we'll turn our attention to the case of Acoustic Concepts, Inc., a company founded by Prem Narayan.

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

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

**Prem:** Bob, I've got a lot of questions about the company's finances I hope you can help answer.

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

**Prem:** I know, but I am worried about the risks I've taken on by expanding operations. What would happen if a competitor entered the market and our sales slipped?

How far could sales drop without putting us into the red? Another question I've been trying to resolve is how much our sales would have to increase to justify the

**MANAGERIAL  
ACCOUNTING IN  
ACTION**



## Test Builder in Connect

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

Test Builder allows you to


- Access all test bank content from a particular title.
- Easily pinpoint the most relevant content through robust filtering options.
- Manipulate the order of questions or scramble questions and/or answers.
- Pin questions to a specific location within a test.
- Determine your preferred treatment of algorithmic questions.
- Choose the layout and spacing.
- Add instructions and configure default settings.

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



## Remote Proctoring & Browser-Locking Capabilities



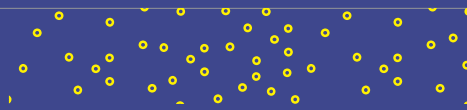
connect<sup>®</sup> +  proctorio

New remote proctoring and browser-locking capabilities, hosted by Proctorio within Connect, provide control of the assessment environment by enabling security options and verifying the identity of the student. Seamlessly integrated within Connect, these services allow instructors to control students' assessment experience by restricting browser activity, recording students' activity, and verifying students are doing their own work. Instant and detailed reporting gives instructors an at-a-glance view of potential academic integrity concerns, thereby avoiding personal bias and supporting evidence-based claims.

### Tegrity: Lectures 24/7

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

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



## Custom Publishing through Create

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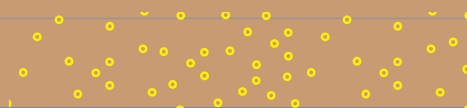
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**connect Applying Excel**

This Excel worksheet form is to be used to recreate Exhibit 1-7. The workbook, and instructions on how to complete the file, can be found in Connect. **LEARNING OBJECTIVE 1-6**

Microsoft Excel

**connect Exercises**

**EXERCISE 1-1 Identifying Direct and Indirect Costs LO1-1**

Northwest Hospital is a full-service hospital that provides everything from major surgery and emergency room care to outpatient clinics.

**Required:**  
For each cost incurred at Northwest Hospital, indicate whether it would most likely be a direct cost or an indirect cost of the specified cost object by placing an X in the appropriate column.

**connect Problems**

**PROBLEM 4-18 Variable and Absorption Costing Unit Product Costs and Income Statements LO 4-1, LO 4-2**

Haas Company manufactures and sells one product. The following information pertains to each of the company's first three years of operations:

Variable costs per unit:	
Manufacturing:	
Direct materials	\$20
Direct labor	\$12
Variable manufacturing overhead	\$4
Variable selling and administrative	
	\$3

**connect Cases**

Select cases are available in Connect.

**CASE 4-29 Variable and Absorption Costing Unit Product Costs and Income Statements LO 4-1, LO 4-2**

O'Brien Company manufactures and sells one product. The following information pertains to each of the company's first three years of operations:

Variable costs per unit:	
Manufacturing:	
Direct materials	\$32
Direct labor	\$20
Variable manufacturing overhead	\$4
Variable selling and administrative	\$3
Fixed costs per year:	
Fixed manufacturing overhead	\$660,000

## Author-Written Supplements

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

## End-of-Chapter Material

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

## Assurance of Learning Ready

Many educational institutions today are focused on the notion of assurance of learning, an important element of some accreditation standards. *Managerial Accounting for Managers*, 6e, is designed specifically to support your assurance of learning initiatives with a simple, yet powerful, solution.

Each question for *Managerial Accounting for Managers*, 6e, maps to a specific chapter learning outcome/objective listed in the text. The reporting features of Connect can aggregate students to make the collection and presentation of assurance of learning data simple and easy.

## Utilizing the Icons



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



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



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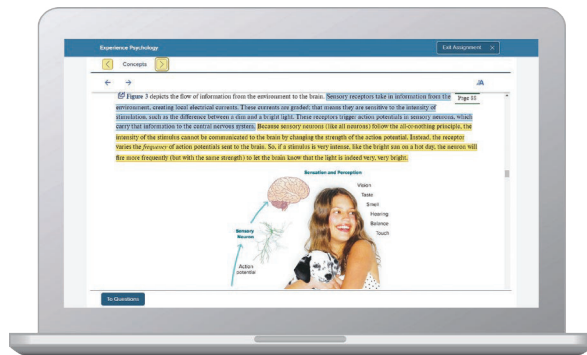
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**Eric W. Noreen • Peter C. Brewer • Ray H. Garrison**

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# Managerial Accounting: An Overview



AzmanJaka/E+/Getty Images

## ENTREPRENEUR SPOTLIGHT

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

### ***Managerial Accounting: The Practical Application***

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

### ***Corporate Social Responsibility: Serving all Stakeholders***

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

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

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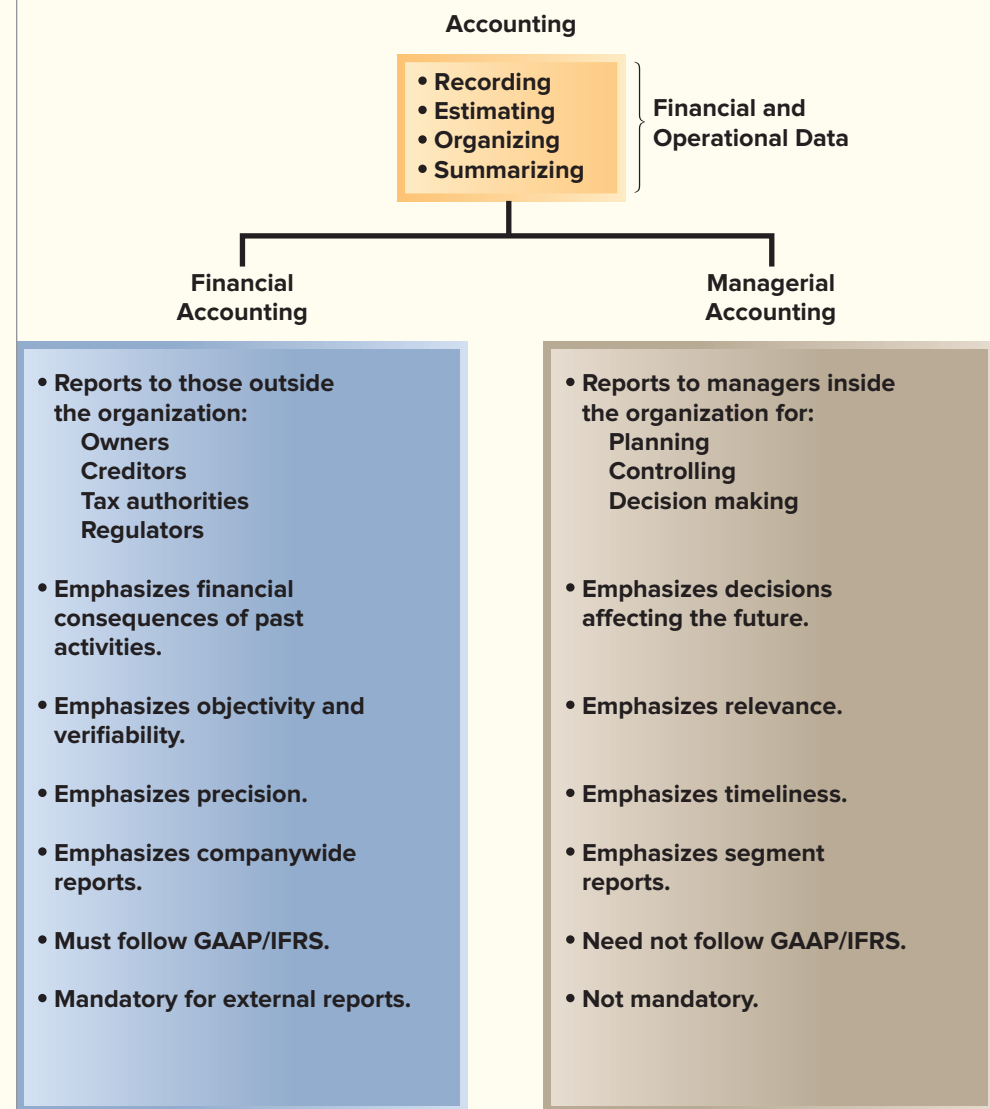
## What Is Managerial Accounting?

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

Many students enrolled in this course will have recently completed an introductory *financial accounting* course. **Financial accounting** is concerned with reporting financial information to external parties, such as stockholders, creditors, and regulators. **Managerial accounting** is concerned with providing information to managers for use within the organization. Exhibit P-1 summarizes seven key differences between financial and managerial accounting. It recognizes that the fundamental difference between financial and managerial accounting is that financial accounting serves the needs of those *outside* the organization, whereas managerial accounting serves the needs of managers employed *inside* the organization. Because of this fundamental difference

### EXHIBIT P-1

Comparison of Financial and Managerial Accounting



in users, financial accounting emphasizes the financial consequences of past activities, objectivity and verifiability, precision, and companywide performance, whereas managerial accounting emphasizes decisions affecting the future, relevance, timeliness, and *segment* performance. A **segment** is a part or activity of an organization about which managers would like cost, revenue, or profit data. Examples of business segments include product lines, customer groups (segmented by age, ethnicity, gender, volume of purchases, etc.), geographic territories, divisions, plants, and departments. Finally, financial accounting is mandatory for external reports, and it needs to comply with rules, such as generally accepted accounting principles (GAAP) and international financial reporting standards (IFRS), whereas managerial accounting is not mandatory and does not need to comply with externally imposed rules.

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

## Planning

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

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

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

## LABOR VS. EQUIPMENT: AN IMPORTANT PLANNING DECISION

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

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

## IN BUSINESS



### Controlling

Once you established and started implementing P&G's recruiting plan, you would transition to the control process. This process would involve gathering, evaluating, and responding to feedback to ensure that this year's recruiting process meets expectations. It would also include evaluating the feedback in search of ways to run a more effective recruiting campaign next year. The control process would involve answering questions such as:

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

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

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

### Decision Making

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

#### EXHIBIT P-2

Examples of Decisions

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

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

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

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

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

## Why Does Managerial Accounting Matter to Your Career?

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

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

### **Business Majors**

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

The left-hand column of Exhibit P-3 describes some planning, controlling, and decision-making applications in the marketing profession. For example, marketing managers make planning decisions related to allocating advertising dollars across various communication mediums and to staffing new sales territories. From a control standpoint,

**EXHIBIT P-3**

Relating Managerial Accounting to Three Business Majors

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

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

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

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

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

### **Accounting Majors**

Many accounting graduates begin their careers working for public accounting firms that provide a variety of valuable services for their clients. Some of these graduates will

build successful and fulfilling careers in the public accounting industry; however, most will leave public accounting at some point to work in other organizations. In fact, the **Institute of Management Accountants** (IMA) estimates that more than 80 percent of professional accountants in the United States work in nonpublic accounting environments.<sup>1</sup>

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

Given the 80 percent figure mentioned above, if you are an accounting major, there is a very high likelihood that your future will involve working for a nonpublic accounting employer. Your employer will expect you to have strong financial accounting skills, but more importantly, it will expect you to help improve organizational performance by applying the planning, controlling, and decision-making skills that are the foundation of managerial accounting.

### A NETWORKING OPPORTUNITY

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

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

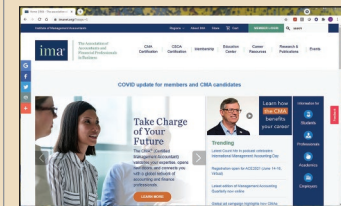
**Professional Certification—A Smart Investment** If you plan to become an accounting major, the Certified Management Accountant (CMA), Certified in Strategy and Competitive Analysis (CSCA), and Chartered Global Management Accountant (CGMA) designations are globally respected credentials that will increase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

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

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

<sup>1</sup> This statistic was provided by Raef Lawson, the Institute of Management Accountants Vice-President of Research & Policy and Professor in Residence.

### IN BUSINESS



The Institute of Management Accountants

**EXHIBIT P-4**CMA Exam Content  
Specifications

**Part 1**      *Financial Planning, Performance, and Analytics*  
 External financial reporting decisions  
 Planning, budgeting, and forecasting  
 Performance management  
 Cost management  
 Internal controls  
 Technology and Analytics

**Part 2**      *Strategic Financial Management*  
 Financial statement analysis  
 Corporate finance  
 Decision analysis  
 Risk management  
 Investment decisions  
 Professional ethics

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

**IN BUSINESS****HOW'S THE PAY?**

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

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

For example, if you make it to top-level management, have an advanced degree, and a CMA, your estimated salary would be \$157,262 (\$63,835 + \$64,786 + \$15,490 + \$13,151)

Source: Shannon Charles and Kip Krumwiede, "IMA's 2021 Global Salary Survey," *Strategic Finance*, March 2021, pp. 28–37.



## Managerial Accounting: Understanding the Broader Context

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

### Big Data

Experts estimate that every second of every day, we are creating 1.7 megabytes of new information per person. Given our global population of more than 7.5 billion people, this is a truly astonishing rate of data generation. However, less than 0.5% of this data is currently being analyzed and used to support decision making,<sup>2</sup> thereby suggesting that business managers have an extraordinary opportunity to harness what is known as the *Big Data* phenomenon. **Big Data** refers to large collections of data that are gathered from inside or outside a company to provide opportunities for ongoing reporting and analysis.<sup>3</sup> Big Data can be both “structured,” such as memos and reports, and “unstructured,” such as videos, pictures, audio, and other digital forms.

Big Data is often discussed in terms of five Vs. The first three of those Vs—variety, volume, velocity—refine the definition of Big Data. *Variety* refers to the data formats in which information is stored. This includes traditional forms and digital formats, including social media, as well as click-streams on a webpage, sensor-enabled feedback, and internet-based audio/video files. *Volume* refers to the continuously expanding quantity of data that companies must gather, cleanse, organize, and analyze. For larger companies,

#### EXHIBIT P-5

Measurement Skills: A Manager's Perspective

Chapter Number	The Key Question from a Manager's Perspective
Chapter 1	What cost classifications do I use for different management purposes?
Chapter 2	How will my profits change if I change my selling price, sales volume, or costs?
Chapter 3	How much does it cost us to manufacture customized jobs for each of our customers?
Chapter 4	How should the income statement be presented?
Chapter 5	How profitable is each of our products, services, and customers?
Chapter 6	How do I quantify the financial impact of pursuing one course of action versus another?
Chapter 7	How do I make long-term capital investment decisions?
Chapter 8	How should I create a financial plan for next year?
Chapters 9 & 10	How well am I performing relative to my plan?
Chapters 11 & 12	How should I implement a performance measurement system to help ensure we achieve our strategic goals?

<sup>2</sup> Source: Bernard Marr, “Big Data: 20 Mind-Boggling Facts Everyone Must Read,” *Forbes*, September 30, 2015.

<sup>3</sup> Source: Lisa Arthur, “What Is Big Data,” *Forbes*, August 15, 2013.

this can be hundreds of petabytes of data (where one petabyte equals one million gigabytes). *Velocity* speaks to the rate at which data is received and acted on by organizations. This is particularly important where the data has a limited shelf-life. For example, retailers can better match supply with demand if they are receiving and responding to sales data in seconds or minutes rather than days or weeks.

The remaining Vs—value and veracity—define users’ expectations with respect to Big Data. The concept of *Value* implies that the time and money organizations expend to analyze Big Data need to result in insights that are valued by stakeholders. For example, shareholders expect Big Data analysis to translate into financial benefits, such as rising sales, increased return on investment, and a higher stock price. *Veracity* refers to the fact that users expect their data to be accurate and trustworthy. For accounting professionals, veracity may be the most important of the “five Vs” because their analysis and opinions, which are relied on by numerous stakeholders (such as managers, investors, and regulators), must be supported by verifiable data.

From a managerial accounting standpoint, the goal for managers is to use *data analytics* to derive value from big data. **Data analytics** refers to the process of analyzing data with the aid of specialized systems and software to draw conclusions about the information they contain.<sup>4</sup> Managers often communicate the findings from their data analysis to others through the use of *data visualization* techniques, such as graphs, charts, maps, and diagrams.

Data analytics can be used for descriptive, diagnostic, predictive, and prescriptive purposes. *Descriptive analytics* are used to answer the question: What happened? For example, managers may use them to better understand historical trends in revenues and expenses. *Diagnostic analytics* are used to answer the question: Why did it happen? For example, managers may analyze economic indicators, such as changes in the unemployment rate, to help explain why sales increased or decreased. *Predictive analytics* are used to answer the question: What will happen? For example, managers can use predictive techniques, such as regression analysis, to estimate sales or expenses for the next month, quarter, or year. Finally, *prescriptive analytics* can be used to answer the question: What should I do? For example, managers may use prescriptive analytics to decide which products should be promoted, deemphasized, or discontinued.<sup>5</sup>

## IN BUSINESS



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### THE ROLE OF MANAGERIAL ACCOUNTING

“Creating value through values” is the credo of today’s management accountant. It means that management accountants should maintain an unwavering commitment to ethical values while using their knowledge and skills to influence decisions that create value for organizational stakeholders. These skills include managing risks and implementing strategy through planning, budgeting and forecasting, and data science, including advanced analytics, visualization, and story-telling. Management accountants are strategic business partners who understand the financial, operational, and market-facing perspectives of the business. They report and analyze financial as well as nonfinancial measures of performance relating to profits (financial statements), processes (customer focus and satisfaction), people (employee learning and satisfaction), and the planet (environmental stewardship).

Source: Conversation with Jeff Thomson, president and CEO of the Institute of Management Accountants.

### Ethics

Ethical behavior is the lubricant that keeps the economy running. Without that lubricant, the economy would operate much less efficiently—less would be available to consumers, quality would be lower, and prices would be higher. In other words, without fundamental

<sup>4</sup> Source: <https://searchdatamanagement.techtarget.com/definition/data-analytics>.

<sup>5</sup> Source: Jake Frankenfield, “Data Analytics,” published by Investopedia and available at the following link: <https://www.investopedia.com/terms/d/data-analytics.asp>.

trust in the integrity of business, the economy would operate much less efficiently. Thus, for the good of everyone—including profit-making companies—it is vitally important that business be conducted within an ethical framework that builds and sustains trust.

**Code of Conduct for Management Accountants** The **Institute of Management Accountants** (IMA) has adopted an ethical code called the *Statement of Ethical Professional Practice* that describes in some detail the ethical responsibilities of management accountants. Even though the standards were developed specifically for management accountants, they have much broader applications. The standards consist of two parts that are presented in full in Exhibit P-6. The first part provides general guidelines for ethical behavior. In a nutshell, a management accountant has ethical responsibilities in four broad areas: first, to maintain a high level of professional competence; second, to treat sensitive matters with confidentiality; third, to maintain personal integrity; and fourth, to disclose information in a credible fashion. The second part of the standards specifies what should be done if an individual finds evidence of ethical misconduct.

The ethical standards provide sound, practical advice for management accountants and managers. Most of the rules in the ethical standards are motivated by a very practical consideration—if these rules were not generally followed in business, then the economy and all of us would suffer. Consider the following specific examples of the consequences of not abiding by the standards:

- Suppose employees could not be trusted with confidential information. Then top managers would be reluctant to distribute such information within the company and, as a result, decisions would be based on incomplete information and operations would deteriorate.
- Suppose employees accepted bribes from suppliers. Then contracts would tend to go to the suppliers who pay the highest bribes rather than to the most competent suppliers. Would you like to fly in aircraft whose wings were made by the subcontractor who paid the highest bribe? Would you fly as often? What would happen to the airline industry if its safety record deteriorated due to shoddy workmanship on contracted parts and subassemblies?
- Suppose the presidents of companies routinely lied in their annual reports and financial statements. If investors could not rely on the basic integrity of a company's financial statements, they would have little basis for making informed decisions. Suspecting the worst, rational investors would pay less for stocks issued by companies and may not be willing to invest at all. As a consequence, companies would have less money for productive investments—leading to slower economic growth, fewer goods and services, and higher prices.

Not only is ethical behavior the lubricant for our economy, it is the foundation of managerial accounting. The numbers that managers rely on for planning, controlling, and decision making are meaningless unless they have been competently, objectively, and honestly gathered, analyzed, and reported. As your career unfolds, you will inevitably face decisions with ethical implications. Before making such decisions, consider performing the following steps. First, define your alternative courses of action. Second, identify all of the parties that will be affected by your decision. Third, define how each course of action will favorably or unfavorably impact each affected party. Once you have a complete understanding of the decision context, seek guidance from external sources such as the IMA Statement of Ethical Professional Practice (see Exhibit P-6), the IMA Ethics Helpline at (800) 245-1383, or a trusted confidant. Before executing your decision ask yourself one final question—would I be comfortable disclosing my chosen course of action on the front page of *The Wall Street Journal*?

## Strategy

Companies do not succeed by sheer luck; instead, they need to develop a *strategy* that defines how they intend to succeed in the marketplace. A **strategy** is a “game plan” that

**EXHIBIT P-6**

Institute of Management Accountants (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**

IMA members have a responsibility to comply with and uphold the standards of Competence, Confidentiality, Integrity, and Credibility. Failure to comply may result in disciplinary action.

**I. COMPETENCE**

1. Maintain an appropriate level of professional leadership and expertise by enhancing 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. Recognize and help manage risk.

**II. CONFIDENTIALITY**

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

**III. INTEGRITY**

1. Mitigate actual conflicts of interest. Regularly communicate with business associates to avoid apparent conflicts of interest. Advise all parties of any potential conflicts of interest.
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.
4. Contribute to a positive ethical culture and place integrity of the profession above personal interests.

**IV. CREDIBILITY**

1. Communicate information fairly and objectively.
2. Provide all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, analyses, or recommendations.
3. Report any delays or deficiencies in information, timeliness, processing, or internal controls in conformance with organization policy and/or applicable law.
4. Communicate professional limitations or other constraints that would preclude responsible judgment or successful performance of an activity.

**RESOLVING ETHICAL ISSUES**

In applying the Standards of Ethical Professional Practice, the member may encounter unethical issues or behavior. In these situations, the member should not ignore them, but rather should actively seek resolution of the issue. In determining which steps to follow, the member should consider all risks involved and whether protections exist against retaliation.

When faced with unethical issues, the member should follow the established policies of his or her organization, including use of an anonymous reporting system if available.

If the organization does not have established policies, the member should consider the following courses of action:

- The resolution process could include a discussion with the member's immediate supervisor. If the supervisor appears to be involved, the issue could be presented to the next level of management.
- IMA offers an anonymous helpline that the member may call to request how key elements of the *IMA Statement of Ethical Professional Practice* could be applied to the ethical issue.
- The member should consider consulting his or her own attorney to learn of any legal obligations, rights, and risks concerning the issue.

If resolution efforts are not successful, the member may wish to consider disassociating from the organization.

enables a company to attract customers by distinguishing itself from competitors. The focal point of a company's strategy should be its target customers. A company can only succeed if it creates a reason for its target customers to choose it over a competitor. These reasons, or what are more formally called *customer value propositions*, are the essence of strategy.

Customer value propositions tend to fall into three broad categories—*customer intimacy*, *operational excellence*, and *product leadership*. Companies that adopt a *customer intimacy* strategy are, in essence, saying to their customers, “You should choose us because we can customize our products and services to meet your individual needs better than our competitors.” **Ritz-Carlton**, **Nordstrom**, and **Virtuoso** (a premium service travel agency) rely primarily on a customer intimacy value proposition for their success. Companies that pursue the second customer value proposition, called *operational excellence*, are saying to their target customers, “You should choose us because we deliver products and services faster, more conveniently, and at a lower price than our competitors.” **Southwest Airlines**, **Walmart**, and **Google** are examples of companies that succeed first and foremost because of their operational excellence. Companies pursuing the third customer value proposition, called *product leadership*, are saying to their target customers, “You should choose us because we offer higher quality products than our competitors.” **Apple**, **Cisco Systems**, and **W.L. Gore** (the creator of GORE-TEX® fabrics) are examples of companies that succeed because of their product leadership.<sup>6</sup>

The plans managers set forth, the variables they seek to control, and the decisions they make are all influenced by their company's strategy. For example, Walmart would not make plans to build ultra-expensive clothing boutiques because these plans would conflict with the company's strategy of operational excellence and “everyday low prices.” Apple would not seek to control its operations by selecting performance measures that focus solely on cost-cutting because those measures would conflict with its product leadership customer value proposition. Finally, it is unlikely that **Rolex** would decide to implement drastic price reductions for its watches even if a financial analysis indicated that establishing a lower price might boost short-run profits. Rolex would oppose this course of action because it would diminish the luxury brand that forms the foundation of the company's product leadership customer value proposition.

## Enterprise Risk Management

Every strategy, plan, and decision involves risks. **Enterprise risk management** is a process used by a company to identify those risks and develop responses to them that enable it to be reasonably assured of meeting its goals. The left-hand column of Exhibit P-7 provides 10 examples of the types of business risks that companies face. They range from risks that relate to the weather to risks associated with computer hackers, complying with the law, supplier strikes, and products harming customers. The right-hand column of Exhibit P-7 provides an example of a control that could be implemented to help reduce each of the risks mentioned in the left-hand column of the exhibit.<sup>7</sup> Although these types of controls cannot completely eliminate risks, they enable companies to proactively manage their risks rather than passively reacting to unfortunate events that have already occurred.

In managerial accounting, companies use controls to reduce the risk that their plans will not be achieved. For example, if a company plans to build a new manufacturing facility within a predefined budget and time frame, it will establish and monitor control measures to ensure that the project is concluded on time and within the budget. Risk management is also a critically important aspect of decision making. For example, when

<sup>6</sup> These three customer value propositions were defined by Michael Treacy and Fred Wiersema in “Customer Intimacy and Other Value Disciplines,” *Harvard Business Review*, Volume 71 Issue 1, pp. 84–93.

<sup>7</sup> Besides using controls to reduce risks, companies can also choose other risk responses, such as accepting or avoiding a risk.



**EXHIBIT P-7**

## Identifying and Controlling Business Risks

Examples of Business Risks	Examples of Controls to Reduce Business Risks
<ul style="list-style-type: none"> <li>Intellectual assets being stolen from computer files</li> <li>Products harming customers</li> <li>Losing market share due to the unforeseen actions of competitors</li> <li>Poor weather conditions shutting down operations</li> <li>A website malfunctioning</li> <li>A supplier strike halting the flow of raw materials</li> <li>A poorly designed incentive compensation system causing employees to make bad decisions</li> <li>Poor environmental stewardship causing reputational and financial damage</li> <li>Inaccurate budget estimates causing excessive or insufficient production</li> <li>Failing to comply with equal employment opportunity laws</li> </ul>	<ul style="list-style-type: none"> <li>Create firewalls that prohibit computer hackers from corrupting or stealing intellectual property</li> <li>Develop a formal and rigorous new product testing program</li> <li>Develop an approach for legally gathering information about competitors' plans and practices</li> <li>Develop contingency plans for overcoming weather-related disruptions</li> <li>Thoroughly test the website before going "live" on the Internet</li> <li>Establish a relationship with two companies capable of providing needed raw materials</li> <li>Create a balanced set of performance measures that motivates the desired behavior</li> <li>Create a reporting system that tracks key environmental performance indicators</li> <li>Implement a rigorous budget review process</li> <li>Create a report that tracks key metrics related to compliance with the laws</li> </ul>

a company quantifies the labor cost savings that it can realize by sending jobs overseas, it should complement its financial analysis with a prudent assessment of the accompanying risks. Will the overseas manufacturer use child labor? Will the product's quality decline, thereby leading to more warranty repairs, customer complaints, and lawsuits? Will the elapsed time from customer order to delivery dramatically increase? Will terminating domestic employees diminish morale within the company and harm perceptions within the community? These are the types of risks that managers should incorporate into their decision-making processes.

Companies also use controls in financial accounting to safeguard assets and minimize the risk of financial reporting errors. Exhibit P-8 describes seven types of controls that companies use to safeguard their assets and to reduce their financial reporting risks. Each item in the exhibit is labeled as a *preventive control* and/or a *detective control*. A **preventive control** deters undesirable events from occurring. A **detective control** detects undesirable events that have already occurred.

As shown in Exhibit P-8, requiring *authorizations* for certain types of transactions is a preventive control. For example, companies frequently require that a specific senior manager sign all checks above a particular dollar amount to reduce the risk of an inappropriate cash disbursement. *Reconciliations* are a detective control. If you have ever compared a bank statement to your checkbook to resolve any discrepancies, then you have performed a type of reconciliation known as a bank reconciliation. This is a detective control because you are seeking to identify any mistakes already made by the bank or existing mistakes in your own records. Another type of reconciliation occurs when a company performs a physical count of its inventory. The value of the physical inventory on hand is compared to the accounting records so that any discrepancies can be identified and resolved.

Exhibit P-8 also mentions *segregation of duties*, which is a preventive control that separates responsibilities for authorizing transactions, recording transactions, and

**EXHIBIT P-8**

Types of Internal Controls for Financial Reporting

Type of Control	Classification	Description
Authorizations	Preventive	Requiring management to formally approve certain types of transactions.
Reconciliations	Detective	Relating data sets to one another to identify and resolve discrepancies.
Segregation of duties	Preventive	Separating responsibilities related to authorizing transactions, recording transactions, and maintaining custody of the related assets.
Physical safeguards	Preventive	Using cameras, locks, and physical barriers to protect assets.
Performance reviews	Detective	Comparing actual performance to various benchmarks to identify unexpected results.
Maintaining records	Detective	Maintaining written and/or electronic evidence to support transactions.
Information systems security	Preventive/Detective	Using controls such as passwords and access logs to ensure appropriate data restrictions.

maintaining custody of the related assets. For example, the same employee should not have the ability to authorize inventory purchases, account for those purchases, and manage the inventory storeroom. *Physical safeguards* prevent unauthorized employees from having access to assets such as inventories and computer equipment. *Performance reviews* are a detective control performed by employees in supervisory positions to ensure that actual results are reasonable when compared to relevant benchmarks. If actual results unexpectedly deviate from expectations, then it triggers further analysis to determine the root cause of the deviation. Companies *maintain records* to provide evidence that supports each transaction. For example, companies use serially numbered checks (a detective control) so they can readily track all of their cash disbursements. Finally, companies maintain *information systems security* by using passwords (a preventive control) and access logs (a detective control) to restrict electronic data access as appropriate.

It bears reemphasizing that these types of controls may help a company reduce its risks, but they cannot guarantee a company will achieve its objectives. For example, two or more employees may collude to circumvent the control system, or a company's senior leaders may manipulate financial results by intentionally overriding prescribed policies and procedures. This reality highlights the importance of having senior leaders (including the chief executive officer and the chief financial officer) who are committed to creating an ethical "tone at the top" of the organization.

**TARGET'S CHECK-OUT LANES GRIND TO A HALT**

When a glitch during routine computer maintenance shut down all of Target's check-out lanes for a two-hour span, many disgruntled customers took to Twitter to complain using the hashtag #TargetDown. Notice that this computer outage not only inconvenienced numerous customers within Target's stores, but it also created additional reputational damage through social media-enabled "word-of-mouth." This experience highlights why companies invest heavily in enterprise risk management to prevent adverse events such as this from occurring.

Source: Khadeeja Safdar, "Outage Paralyzes Shopping at Target," *The Wall Street Journal*, June 17, 2019, p. B3.

**IN BUSINESS**

QualityHD/Shutterstock

### Corporate Social Responsibility

Companies are responsible for creating strategies that produce financial results that satisfy stockholders. However, they also have a *corporate social responsibility* to serve other stakeholders—such as customers, employees, suppliers, communities, and environmental and human rights advocates—whose interests are tied to the company’s performance. **Corporate social responsibility** (CSR) is a concept whereby organizations consider the needs of all stakeholders when making decisions. CSR extends beyond legal compliance to include voluntary actions that satisfy stakeholder expectations. Numerous companies, such as **Pirelli, 3M, Eli Lilly and Company, Starbucks, Microsoft, Genentech, Johnson & Johnson, Baxter International, Abbott Laboratories, REI, PNC Bank, Deloitte, Timberland, and Caterpillar**, prominently describe their corporate social performance on their websites.

Exhibit P–9 presents examples of corporate social responsibilities that are of interest to six stakeholder groups.<sup>8</sup> If a company fails to meet the needs of these six stakeholder groups, it can adversely affect its financial performance. For example, if a company pollutes the environment or fails to provide safe and humane working conditions for its employees, the negative publicity from environmental and human rights activists could cause the company’s customers to defect and its “best and brightest” job candidates to apply elsewhere—both of which are likely to eventually harm financial performance. This explains why in managerial accounting, a manager must establish plans, implement controls, and make decisions that consider impacts on all stakeholders.

#### EXHIBIT P–9

Examples of Corporate Social Responsibilities

Companies should provide *customers* with:

- Safe, high-quality products that are fairly priced.
- Competent, courteous, and rapid delivery of products and services.
- Full disclosure of product-related risks.
- Easy-to-use information systems for shopping and tracking orders.

Companies should provide *suppliers* with:

- Fair contract terms and prompt payments.
- Reasonable time to prepare orders.
- Hassle-free acceptance of timely and complete deliveries.
- Cooperative rather than unilateral actions.

Companies should provide *stockholders* with:

- Competent management.
- Easy access to complete and accurate financial information.
- Full disclosure of enterprise risks.
- Honest answers to knowledgeable questions.

Companies and their suppliers should provide *employees* with:

- Safe and humane working conditions.
- Nondiscriminatory treatment and the right to organize and file grievances.
- Fair compensation.
- Opportunities for training, promotion, and personal development.

Companies should provide *communities* with:

- Payment of fair taxes.
- Honest information about plans such as plant closings.
- Resources that support charities, schools, and civic activities.
- Reasonable access to media sources.

Companies should provide *environmental and human rights advocates* with:

- Greenhouse gas emissions data.
- Recycling and resource conservation data.
- Child labor transparency.
- Full disclosure of suppliers located in developing countries.

<sup>8</sup> Many of the examples in Exhibit P–9 were drawn from Terry Leap and Misty L. Loughry, “The Stakeholder-Friendly Firm,” *Business Horizons*, March/April 2004, pp. 27–32.

## IN BUSINESS

**THE ENVIRONMENTAL IMPACTS OF FAST FASHION**

McKinsey & Co. estimates that, over a 14-year span, the number of times people wore a clothing item before discarding it declined by 36 percent. Given that 53 million metric tons of fiber—less than 13 percent of which is recycled—is annually used in clothing, this trend presents a worrisome environmental problem. More specifically, McKinsey estimates that by 2030 our annual global clothing consumption will use 118 billion cubic meters of water. It will also produce 2.79 billion tons of carbon dioxide and 148 million tons of waste, most of which is landfilled or incinerated. In an effort to tackle this problem, some companies such as Inditex SA and Lenzing AG are investing in recycling technologies, while others such as JCPenney and Macy's are starting to sell secondhand clothing.

Source: Saabira Chaudhuri, "Fast Fashion Leads to New Recycling Effort," *The Wall Street Journal*, October 13, 2019, pp. B1–B2.

**Process Management Perspective**

Most companies organize themselves by functional departments, such as the Marketing Department, the Research and Development Department, and the Accounting Department. These departments tend to have a clearly defined "chain of command" that specifies superior and subordinate relationships. However, effective managers understand that *business processes*, more so than functional departments, serve the needs of a company's most important stakeholders—its customers. A **business process** is a series of steps that are followed in order to carry out some task in a business. These steps often span departmental boundaries, thereby requiring managers to cooperate across functional departments. The term *value chain* is often used to describe how an organization's functional departments interact with one another to form business processes. A **value chain**, as shown in Exhibit P–10, consists of the major business functions that add value to a company's products and services.

Managers need to understand the value chain to be effective in terms of planning, control, and decision making. For example, if a company's engineers plan to design a new product, they must communicate with the Manufacturing Department to ensure the product can actually be produced, the Marketing Department to ensure customers will buy the product, the Distribution Department to ensure large volumes of the product can be cost-effectively transported to customers, and the Accounting Department to ensure the product will increase profits. From a control and decision-making standpoint, managers also need to focus on process excellence instead of functional performance. For example, if the Purchasing Department focuses solely on minimizing the cost of purchased materials, this narrowly focused attempt at cost reduction may lead to greater scrap and rework in the Manufacturing Department, more complaints in the Customer Service Department, and greater challenges in the Marketing Department because dissatisfied customers are turning their attention to competitors.

Managers frequently use a process management method known as *lean resource management*, or what is called *Lean Production* in the manufacturing sector. **Lean Production** is a management approach that organizes resources such as people and machines

**EXHIBIT P–10**

Business Functions Making Up the Value Chain



around the flow of business processes and only produces units in response to customer orders. It is often called *just-in-time* production (or *JIT*) because products are only manufactured in response to customer orders, and they are completed just-in-time to be shipped to customers. Lean Production differs from traditional manufacturing methods that organize work departmentally and encourage departments to maximize their output even if it exceeds customer demand and bloats inventories. Because Lean Production only allows production in response to customer orders, the number of units produced tends to equal the number of units sold, thereby resulting in minimal inventory. The lean approach also results in fewer defects, less wasted effort, and quicker customer response times than traditional production methods.

### Leadership

An organization's employees bring diverse needs, beliefs, and goals to the workplace. Therefore, an important role for organizational leaders is to unite the behaviors of their fellow employees around two common themes—pursuing strategic goals and making optimal decisions. To fulfill this responsibility, leaders need to understand how *intrinsic motivation*, *extrinsic incentives*, and *cognitive bias* influence human behavior.

**Intrinsic Motivation** Intrinsic motivation refers to motivation that comes from within us. Stop for a moment and identify the greatest accomplishment of your life. Then ask yourself what motivated you to achieve this goal? In all likelihood, you achieved it because you wanted to, not because someone forced you to do it. In other words, you were intrinsically motivated. Similarly, an organization is more likely to prosper when its employees are intrinsically motivated to pursue its interests. A leader, who employees perceive as *credible* and *respectful* of their value to the organization, can increase the extent to which those employees are intrinsically motivated to pursue strategic goals. As your career evolves, to be perceived as a credible leader, you'll need to possess three attributes—technical competence (that spans the value chain), personal integrity (in terms of work ethic and honesty), and strong communication skills (including oral presentation skills and writing skills). To be perceived as a leader who is respectful of your co-workers' value to the organization, you'll need to possess three more attributes—strong mentoring skills (to help others realize their potential), strong listening skills (to learn from your co-workers and be responsive to their needs), and personal humility (in terms of deferring recognition to all employees who contribute to the organization's success). If you possess these six traits, then you'll have the potential to become a leader who inspires others to readily and energetically channel their efforts toward achieving organizational goals.

**Extrinsic Incentives** Many organizations use *extrinsic incentives* to highlight important goals and to motivate employees to achieve them. For example, assume a company establishes the goal of reducing the time needed to perform a task by 20 percent. In addition, assume the company agrees to pay bonus compensation to its employees if they achieve the goal within three months. In this example, the company is using a type of extrinsic incentive known as a bonus to highlight a particular goal and to presumably motivate employees to achieve it.

While proponents of extrinsic incentives rightly assert that these types of rewards can have a powerful influence on employee behavior, many critics warn that they can also produce dysfunctional consequences. For example, suppose the employees mentioned above earned their bonuses by achieving the 20 percent time reduction goal within three months. However, let's also assume that during those three months, the quality of the employees' output plummeted, thereby causing a spike in the company's repair costs, product returns, and customer defections. In this instance, did the extrinsic incentive work properly? The answer is yes and no. The bonus system did motivate employees to



attain the time reduction goal; however, it also had the unintended consequences of causing employees to neglect product quality, thereby increasing repair costs, product returns, and customer defections. In other words, what may have seemed like a well-intended extrinsic incentive actually produced dysfunctional results for the company. This example highlights an important leadership challenge that you are likely to face someday—designing financial compensation systems that fairly reward employees for their efforts without inadvertently creating extrinsic incentives that motivate them to take actions that harm the company.

**Cognitive Bias** Leaders need to be aware that all people (including themselves) possess *cognitive biases*, or distorted thought processes, that can adversely affect planning, controlling, and decision making. To illustrate how cognitive bias works, let's consider the scenario of a television “infomercial” where someone is selling a product with a proclaimed value of \$200 for \$19.99 if viewers call within the next 30 minutes. Why do you think the seller claims that the product has a \$200 value? The seller is relying on a cognitive bias called *anchoring bias* in an effort to convince viewers that a \$180 discount is simply too good to pass up. The “anchor” is the false assertion that the product is actually worth \$200. If viewers erroneously attach credibility to this contrived piece of information, their distorted analysis of the situation may cause them to spend \$19.99 on an item whose true economic value is much less than that amount.

While cognitive biases cannot be eliminated, effective leaders should take two steps to reduce their negative impacts. First, they should acknowledge their own susceptibility to cognitive bias. For example, a leader's judgment might be clouded by optimism bias (being overly optimistic in assessing the likelihood of future outcomes) or self-enhancement bias (overestimating one's strengths and underestimating one's weaknesses relative to others). Second, they should acknowledge the presence of cognitive bias in others and introduce techniques to minimize their adverse consequences. For example, to reduce the risks of confirmation bias (a bias where people pay greater attention to information that confirms their preconceived notions, while devaluing information that contradicts them) or groupthink bias (a bias where some group members support a course of action solely because other group members do), a leader may routinely appoint independent teams of employees to assess the credibility of recommendations set forth by other individuals and groups.

## A BROADER VIEW OF THE MANAGEMENT ACCOUNTING PROFESSION

The **Institute of Management Accountants** (IMA) has established a competency framework to describe the breadth of skills it believes management accountants need to be successful in the marketplace. The centerpiece of the framework is *Leadership*, which refers to the competencies required to collaborate with others and inspire teams to achieve organizational goals. The framework's foundation is *Professional Ethics & Values*, and its four remaining competencies include *Strategy, Planning & Performance*, *Reporting & Control*, *Technology & Analytics*, and *Business Acumen & Operations*.

This framework expands upon the pillars of planning, controlling, and decision making described earlier in the Prologue. The IMA has defined this expanded set of competencies to guide accounting professionals in developing their own skills and to help them mentor co-workers who are also interested in career advancement.

Source: The 44-page document that provides a detailed description of this framework is available at <https://www.imanet.org/career-resources/management-accounting-competencies>.

## IN BUSINESS



Source: Institute of Management Accountants

## Summary

The prologue defined managerial accounting and explained why it is relevant to business and accounting majors. It also discussed seven topics—Big Data, ethics, strategic management, enterprise risk management, corporate social responsibility, process management, and leadership—that define the context for applying the quantitative aspects of managerial accounting. The most important goal of the prologue was to help you understand that managerial accounting matters to your future career regardless of your major. Accounting is the language of business, and you'll need to speak it to communicate effectively with and influence fellow managers.

## Glossary

**Big Data** Large collections of data that are gathered from inside or outside a company to provide opportunities for ongoing reporting and analysis. (p. 9)

**Budget** A detailed plan for the future that is usually expressed in formal quantitative terms. (p. 3)

**Business process** A series of steps that are followed in order to carry out some task in a business. (p. 17)

**Controlling** The process of gathering feedback to ensure a plan is being properly executed or modified as circumstances change. (p. 3)

**Corporate social responsibility** A concept whereby organizations consider the needs of all stakeholders when making decisions. (p. 16)

**Data analytics** The process of analyzing data with the aid of specialized systems and software to draw conclusions about the information they contain. (p. 10)

**Decision making** Selecting a course of action from competing alternatives. (p. 3)

**Detective control** A control that detects undesirable events that have already occurred. (p. 14)

**Enterprise risk management** A process used by a company to identify its risks and develop responses to them that enable it to be reasonably assured of meeting its goals. (p. 13)

**Financial accounting** The phase of accounting concerned with reporting historical financial information to external parties, such as stockholders, creditors, and regulators. (p. 2)

**Lean Production** A management approach that organizes resources such as people and machines around the flow of business processes and that only produces units in response to customer orders. (p. 17)

**Managerial accounting** The phase of accounting concerned with providing information to managers for use within the organization. (p. 2)

**Performance report** A report that compares budgeted data to actual data to highlight instances of excellent and unsatisfactory performance. (p. 4)

**Planning** The process of establishing goals and specifying how to achieve them. (p. 3)

**Preventive control** A control that deters undesirable events from occurring. (p. 14)

**Segment** Any part or activity of an organization about which managers seek cost, revenue, or profit data. (p. 3)

**Strategy** A company's "game plan" for attracting customers by distinguishing itself from competitors. (p. 11)

**Value chain** The major business functions that add value to a company's products and services, such as research and development, product design, manufacturing, marketing, distribution, and customer service. (p. 17)

## Questions

**P-1** How does managerial accounting differ from financial accounting?

**P-2** Pick any major television network and describe some planning and control activities that its managers would engage in.

- P-3** If you had to decide whether to continue making a component part or to begin buying the part from an overseas supplier, what quantitative and qualitative factors would influence your decision?
- P-4** Why do companies prepare budgets?
- P-5** Why is managerial accounting relevant to business majors and their future careers?
- P-6** Why is managerial accounting relevant to accounting majors and their future careers?
- P-7** Pick any large company and describe its strategy using one of the three customer value propositions defined in the prologue.
- P-8** Why do management accountants need to understand their company's strategy?
- P-9** Pick any large company and describe three risks that it faces and how it responds to those risks.
- P-10** Pick three industries and describe how the risks faced by companies within those industries can influence their planning, controlling, and decision-making activities.
- P-11** Pick any large company and explain three ways that it could segment its companywide performance.
- P-12** Locate the website of any company that publishes a corporate social responsibility report (also referred to as a sustainability report). Describe three nonfinancial performance measures included in the report. Why do you think the company publishes this report?
- P-13** Why do companies that implement Lean Production tend to have minimal inventories?
- P-14** Why are leadership skills important to managers?
- P-15** Why is ethical behavior important to business?
- P-16** If you were a restaurant owner, what internal controls would you implement to help maintain control of your cash?
- P-17** As a form of internal control, what documents would you review prior to paying an invoice received from a supplier?
- P-18** What internal controls would you implement to help maintain control of your credit sales and accounts receivable?
- P-19** Why do companies take a physical count of their inventory on hand at least once per year?
- P-20** Why do companies use sequential prenumbering for documents such as checks, sales invoices, and purchase orders?



connect Exercises

#### EXERCISE P-1 Planning and Control

Assume you are a sales manager working with your boss to create a sales budget for next year. Once the sales budget is established, it will influence how other departments within your company plan to deploy their resources. For example, the manufacturing manager will plan to produce enough units to meet the budgeted unit sales. If the sales budget is too high, it will result in excess inventories, and if it is too low, it will result in lost sales.

You have studied all of the pertinent data and concluded that the “most likely” outcome is estimated sales of \$1,000,000. You also believe that if the sales team works extra hard and has a terrific year, it has a modest chance of achieving an “optimistic” sales forecast of \$1,200,000. Conversely, if the economy sours, you believe that your sales team can still achieve a “pessimistic” sales forecast of \$900,000.

#### Required:

1. Assume your company uses its sales budget for only one purpose—to match the supply of manufactured products with customer demand, thereby minimizing inventories and lost sales. What sales forecast would you provide to your boss?
2. Assume your company also uses its sales budget as a motivational tool to help employees strive for “stretch goals” and exceptional results. What sales forecast would you provide to your boss?
3. Assume your company's sales budget is also used for a third purpose—to determine your pay raise, bonus, and potential for promotion. If actual sales exceed the sales budget, it bodes





well for your career. If actual sales are less than budgeted sales, it will diminish your financial compensation and potential for promotion. What sales forecast would you provide to your boss?

4. Are your answers to the first three questions the same or different? Why? If you know from past experience that your boss usually adds 5–10% to your forecast, how would this affect your answers to the first three questions?
5. Do you think it would be appropriate for your boss to establish the sales budget without any input from you? Why?
6. Do you think the company would allow you to establish the sales budget without any input from your boss? Why?

#### EXERCISE P-2 Controlling

Assume that you work for an airline unloading luggage from airplanes. Your boss has said that, on average, each airplane contains 100 pieces of luggage. Furthermore, your boss has stated that you should be able to unload 100 pieces of luggage from an airplane in 10 minutes. Today an airplane arrived with 150 pieces of luggage, and you unloaded all of it in 13 minutes. After finishing with the 150 pieces of luggage, your boss yelled at you for exceeding the 10-minute allowance for unloading luggage from an airplane.

##### Required:

How would you feel about being yelled at for taking 13 minutes to unload 150 pieces of luggage? How does this scenario relate to the larger issue of how companies design control systems?



#### EXERCISE P-3 Decision Making

Exhibit P-2 from within the prologue includes 12 questions related to 12 types of decisions that companies often face. In the prologue, these 12 decisions were discussed within the context of for-profit companies; however, they are also readily applicable to nonprofit organizations. To illustrate this point, assume that you are a senior leader, such as a president, provost, or dean, in a university setting.

##### Required:

For each of the 12 decisions in Exhibit P-2, provide an example of how that type of decision might be applicable to a university setting.



#### EXERCISE P-4 Ethics and the Manager

Richmond, Inc., operates a chain of 44 department stores. Two years ago, the board of directors of Richmond approved a large-scale remodeling of its stores to attract a more upscale clientele.

Before finalizing these plans, two stores were remodeled as a test. Linda Perlman, assistant controller, was asked to oversee the financial reporting for these test stores, and she and other management personnel were offered bonuses based on the sales growth and profitability of these stores. While completing the financial reports, Perlman discovered a sizable inventory of outdated goods that should have been discounted for sale or returned to the manufacturer. She discussed the situation with her management colleagues; the consensus was to ignore reporting this inventory as obsolete because reporting it would diminish the financial results and their bonuses.

##### Required:

1. According to the IMA's Statement of Ethical Professional Practice, would it be ethical for Perlman *not* to report the inventory as obsolete?
2. Would it be easy for Perlman to take the ethical action in this situation?

(CMA, adapted)



#### EXERCISE P-5 Strategy

The table below contains the names of six companies.

##### Required:

For each company, categorize its strategy as being focused on customer intimacy, operational excellence, or product leadership. If you wish to improve your understanding of each company's

customer value proposition before completing the exercise, review its most recent annual report. To obtain electronic access to this information, perform an Internet search on each company's name followed by the words "annual report."

Company	Strategy
1. Deere .....	?
2. FedEx .....	?
3. State Farm Insurance .....	?
4. BMW .....	?
5. Amazon.com .....	?
6. Charles Schwab .....	?

#### EXERCISE P-6 Enterprise Risk Management

The table below refers to seven industries.

##### Required:

For each industry, provide an example of a business risk faced by companies that compete within that industry. Then, describe an example of a control that could be used to reduce the business risk that you have identified.

Industry	Example of Business Risk	Example of Control to Reduce the Business Risk
1. Airlines (e.g., Delta Airlines) .....		
2. Pharmaceutical drugs (e.g., Merck) .....		
3. Package delivery (e.g., United Parcel Service) .....		
4. Banking (e.g., Bank of America) .....		
5. Oil & gas (e.g., ExxonMobil) .....		
6. E-commerce (e.g., eBay) .....		
7. Automotive (e.g., Toyota) .....		

#### EXERCISE P-7 Ethics in Business

Consumers and attorney generals in more than 40 states accused a prominent nationwide chain of auto repair shops of misleading customers and selling them unnecessary parts and services, from brake jobs to front-end alignments. Lynn Sharpe Paine reported the situation as follows in "Managing for Organizational Integrity," *Harvard Business Review*, Volume 72 Issue 3:

In the face of declining revenues, shrinking market share, and an increasingly competitive market . . . management attempted to spur performance of its auto centers. . . . The automotive service advisers were given product-specific sales quotas—sell so many springs, shock absorbers, alignments, or brake jobs per shift—and paid a commission based on sales. . . . [F]ailure to meet quotas could lead to a transfer or a reduction in work hours. Some employees spoke of the "pressure, pressure, pressure" to bring in sales.

This pressure-cooker atmosphere created conditions under which employees felt that the only way to satisfy top management was by selling products and services to customers that they didn't really need.

Suppose all automotive repair businesses routinely followed the practice of attempting to sell customers unnecessary parts and services.

##### Required:

1. How would this behavior affect customers? How might customers attempt to protect themselves against this behavior?
2. How would this behavior probably affect profits and employment in the automotive service industry?





**EXERCISE P-8 Cognitive Bias**

In the 1970s, one million college-bound students were surveyed and asked to compare themselves to their peers. Some of the key findings of the survey were as follows:

- 70% of the students rated themselves as above average in leadership ability, while only 2% rated themselves as below average in this regard.
- With respect to athletic skills, 60% of the students rated their skills as above the median and only 6% of students rated themselves as below the median.
- 60% of the students rated themselves in the top 10% in terms of their ability to get along with others, while 25% of the students felt that they were in the top 1% in terms of this interpersonal skill.

**Required:**

- What type of cognitive bias reveals itself in the data mentioned above?
- How might this cognitive bias adversely influence a manager's planning, controlling, and decision-making activities?
- What steps could managers take to reduce the possibility that this cognitive bias would adversely influence their actions?

Source: Dan Lovallo and Daniel Kahneman, "Delusions of Success: How Optimism Undermines Executives' Decisions," *Harvard Business Review*, July 2003, pp. 56–63.

**EXERCISE P-9 Ethics and Decision Making**

Assume you are the chair of the Department of Accountancy at Mountain State University. One of the accounting professors in your department, Dr. Candler, has been consistently and uniformly regarded by students as an awful teacher for more than 10 years. Other accounting professors within your department have observed Dr. Candler's classroom teaching, and they concur that his teaching skills are very poor. However, Dr. Candler was granted tenure 12 years ago, thereby ensuring him lifelong job security at Mountain State University.

Much to your surprise, today you received a phone call from an accounting professor at Oregon Coastal University. During this phone call, you are informed that Oregon Coastal University is on the verge of making a job offer to Dr. Candler. However, before extending the job offer, the faculty at Oregon Coastal wants your input regarding Dr. Candler's teaching effectiveness while at Mountain State University.

**Required:**

How would you respond to the professor from Oregon Coastal University? What would you say about Dr. Candler's teaching ability? Would you describe your answer to this inquiry as being ethical? Why?

**EXERCISE P-10 Corporate Social Responsibility**

In his book *Capitalism and Freedom*, economist Milton Friedman wrote on page 133: "There is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it . . . engages in open and free competition, without deception or fraud."

**Required:**

Explain why you agree or disagree with this quote.

**EXERCISE P-11 Intrinsic Motivation and Extrinsic Incentives**

In a *Harvard Business Review* article titled "Why Incentive Plans Cannot Work" (Volume 71, Issue 5), author Alfie Kohn wrote: "Research suggests that, by and large, rewards succeed at securing one thing only: temporary compliance. When it comes to producing lasting change in attitudes and behavior, however, rewards, like punishment, are strikingly ineffective. Once the rewards run out, people revert to their old behaviors. . . . Incentives, a version of what psychologists call extrinsic motivators, do not alter the attitudes that underlie our behaviors. They do not create an enduring *commitment* to any value or action. Rather, incentives merely—and temporarily—change what we do."



**Required:**

1. Do you agree with this quote? Why?
2. As a manager, how would you seek to motivate your employees?
3. As a manager, would you use financial incentives to compensate your employees? If so, what would be the keys to using them effectively? If not, then how would you compensate your employees?

**EXERCISE P-12 Cognitive Bias and Decision Making**

During World War II, the U.S. military was studying its combat-tested fighter planes to determine the parts of the plane most vulnerable to enemy fire. The purpose of the study was to identify the most vulnerable sections of each plane and then take steps to reinforce those sections to improve pilot safety and airplane durability. The data gathered by the U.S. military showed that certain sections of its combat-tested fighter planes were consistently hit more often with enemy fire than other sections of the plane.

**Required:**

1. Would you recommend reinforcing the sections of the plane that were hit most often by enemy fire, or would you reinforce the sections that were hit less frequently by enemy fire? Why?
2. Do you think cognitive bias had the potential to influence the U.S. military's decision-making process with respect to reinforcing its fighter planes?

Source: Jerker Denrell, "Selection Bias and the Perils of Benchmarking," *Harvard Business Review*, Volume 83, Issue 4, pp. 114–119.

**EXERCISE P-13 Ethics and Decision Making**

Assume you just completed a December weekend vacation to a casino within the United States. During your trip, you won \$10,000 gambling. When the casino exchanged your chips for cash, it did not record any personal information, such as your driver's license number or social security number. Four months later while preparing your tax returns for the prior year, you stop to contemplate the fact that the Internal Revenue Service requires taxpayers to report all gambling winnings on Form 1040.

**Required:**

Would you report your gambling winnings to the Internal Revenue Service so you could pay federal income taxes on those winnings? Do you believe your actions are ethical? Why?

