



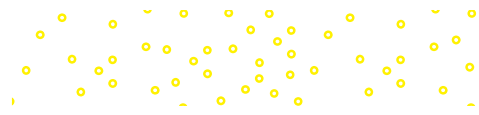
# Managerial Accounting for Managers

Fifth Edition

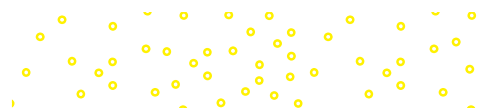
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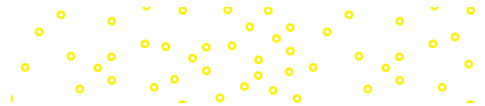





# Managerial Accounting for Managers







# Managerial Accounting for Managers

*Fifth Edition*

**Eric W. Noreen, Ph.D., CMA**

Professor Emeritus  
University of Washington

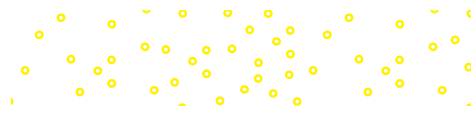
**Peter C. Brewer, Ph.D.**

Wake Forest University

**Ray H. Garrison, D.B.A., CPA**

Professor Emeritus  
Brigham Young University

**Mc  
Graw  
Hill**  
Education



## MANAGERIAL ACCOUNTING FOR MANAGERS, FIFTH EDITION

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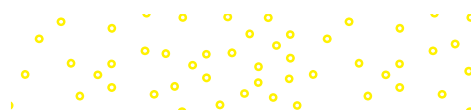
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# About the Authors



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 Peter C. Brewer

**Peter C. Brewer** is a Lecturer 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



©stevecoleimages/Getty Images

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 fifth 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.

**RELEVANCE.** Building student interest with its insightful Business Focus vignettes 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 non-profit, retail, service, wholesale, and manufacturing organizations. Service company examples are highlighted with icons in the margins of the text.

*“At Calvin College, managerial accounting is taken prior to financial accounting. Thus, the managerial concepts are not discussed in the context of debit/credits but how financial information is used for decision making. This text does an excellent job of discussing the topics without and expectation that students understand financial accounting concepts”*

—Debra Snyder, Calvin College

*“I have described it as a very well-written, “approachable” book with comprehensive resources. I have touted its topical coverage, the quality of the EOC material, and the extensive resources available via Connect. It has a nice balance on difficulty- not too easy and not too hard.”*

—Kay Poston, Francis Marion University, Florence, SC

*“Not strictly for accountants, this text meets the needs of the greater business community- all business majors. It does not scare the non-accountants away from managerial accounting and students learn how managerial accounting applies to their chosen business career.”*

—Nancy Jones, San Diego State University

# New in the 5th Edition

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

- We overhauled the job-order costing chapter to better explain how companies use multiple overhead rates to apply overhead costs to individual jobs. This chapter now has a stronger managerial accounting orientation because it focuses more on managerial decision making and less on financial statement preparation.
- We reviewed all end-of-chapter exercises and problems and revised them as appropriate to better function within Connect.
- We added eight Integration Exercises in the back of the book to help students connect the concepts. These exercises are suitable for both a flipped classroom model and in-class active learning environment as they engage students and encourage critical thinking.
- 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.

## Prologue

The Prologue has added coverage of the CGMA exam and an updated summary of the CMA exam content specifications. It also contains the updated Institute of Management Accountants' Statement of Ethical Professional Practice.

## Chapter 1

The high-low method has been removed from this chapter. We added an exhibit to visually depict product and period cost flows. We also made various changes to further emphasize the chapter's unifying theme of *different cost classifications for different purposes*. We have created 11 new end-of-chapter exercises/problems.

## Chapter 2

We added a new appendix that explains how to analyze mixed costs using the high-low method and the least-squares regression method.

## Chapter 3

This is a new chapter that explains how to use a job-order costing system to calculate unit product costs. It describes how

to use plantwide and multiple overhead rates to apply overhead costs to individual jobs. The chapter has a strong managerial accounting orientation because it looks at how job-order costing systems serve the needs of internal managers.

## Chapter 4

We added new text that better highlights this chapter's reliance on actual costing and contrasts it with the job-order costing chapters' reliance on normal costing.

## Chapter 5

This chapter has a new appendix titled Time-Driven Activity-Based Costing: A Microsoft Excel-Based Approach.

## Chapter 6

We revised the front-end of the chapter to better highlight the six key concepts that provide the foundation for effective decision making. We also revised the end-of-chapter exercises and problems to better dovetail with Connect and streamlined the coverage of sell or process further decisions to aid student comprehension. In addition, we relocated the Pricing appendix to this chapter and added new coverage of customer latitude and pricing and value-based pricing.

## Chapter 7

We revised many end-of-chapter exercises and problems and extensively revised the formatting within Connect throughout all the chapters (not just Chapter 7) to allow students greater flexibility when choosing their preferred approach for solving problems. For example, students can now use whatever discount factors they wish (single sums or annuities) to calculate net present values.

## Chapter 8

The end-of-chapter materials include three new exercises/problems (8-17, 8-18, and 8-27).

## Chapter 9

We revised numerous end-of-chapter exercises and problems to better align them with Connect.

## Chapter 10

This chapter includes four new In Business boxes.

## Chapter 11

This chapter includes four new In Business boxes.



# 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.

**connect** Integration Exercises: An Overview

Successful managers rely on an integrated set of managerial accounting components to solve complex, real-world problems. Therefore, we have created eight 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 see the exciting evidence that "managerial accounting" is a manager's tool.

**connect** Integration Exercises

**INTEGRATION EXERCISE 1: Activity Variance, Spending Variance, Materials Price Variance, Materials Quantity Variance** (LOs 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

Successful managers rely on an integrated set of managerial accounting components to solve complex, real-world problems. Therefore, we have created eight 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 see the exciting evidence that "managerial accounting" is a manager's tool.

**INTEGRATION EXERCISE 2: Different Costs for Different Purposes, Cost-Volume-Profit Relationships** (LOs 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

	Amount Per Unit
Direct materials	\$8.00
Direct labor	\$5.00
Variable manufacturing overhead	\$1.00
Fixed manufacturing overhead	\$4.00
Fixed selling expense	\$3.00
Fixed administrative expense	\$2.00
Sales commissions	\$4.00
Variable administrative expense	\$1.00

**Problems:**

- For financial accounting purposes, what is the total amount of product costs incurred to make 20,000 units? What is the total amount of period costs incurred to sell 20,000 units?
- For financial accounting purposes, what is the total amount of period costs incurred to sell 10,000 units?
- If 20,000 units are produced and sold, what is the variable cost per unit produced and sold?
- If 10,000 units are produced and sold, what is the variable cost per unit produced and sold?
- If 20,000 units are produced and sold, what is the total amount of variable costs related to the units produced and sold?
- If 10,000 units are produced and sold, what is the total amount of variable costs related to the units produced and sold?
- If 20,000 units are produced, what is the average fixed manufacturing cost per unit produced?
- If 10,000 units are produced, what is the average fixed manufacturing cost per unit produced?
- If 20,000 units are produced, what is the total amount of fixed manufacturing cost incurred to support this level of production?
- If 10,000 units are produced, what is the total amount of fixed manufacturing cost incurred to support this level of production?
- If 20,000 units are produced, what is the total amount of manufacturing overhead cost incurred to support this level of production? What is this total amount expressed as a per-unit basis?
- If 10,000 units are produced, what is the total amount of manufacturing overhead cost incurred to support this level of production? What is this total amount expressed as a per-unit basis?
- If the selling price is \$22 per unit, what is the contribution margin per unit?
- If 10,000 units are produced, what is the total amount of direct and indirect manufacturing costs incurred to support this level of production?
- What incremental manufacturing cost will Marlene incur if it increases production from 10,000 to 10,001 units?

## NEW\* Integration Exercises

We have added eight new exercises (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 learning throughout the semester.

**The Foundational 15** **connect**

**LEARNING OBJECTIVES 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 1-10, 1-11, 1-12, 1-13, 1-14, 1-15**

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

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

**Problems:**

- For financial accounting purposes, what is the total amount of product costs incurred to make 10,000 units?
- For financial accounting purposes, what is the total amount of period costs incurred to sell 10,000 units?
- If 10,000 units are produced and sold, what is the variable cost per unit produced and sold?
- If 7,500 units are produced and sold, what is the variable cost per unit produced and sold?
- If 10,000 units are produced and sold, what is the total amount of variable costs related to the units produced and sold?
- If 7,500 units are produced and sold, what is the total amount of variable costs related to the units produced and sold?
- If 10,000 units are produced, what is the average fixed manufacturing cost per unit produced?
- If 7,500 units are produced, what is the average fixed manufacturing cost per unit produced?
- If 10,000 units are produced, what is the total amount of fixed manufacturing cost incurred to support this level of production?
- If 7,500 units are produced, what is the total amount of fixed manufacturing cost incurred to support this level of production?
- If 10,000 units are produced, what is the total amount of manufacturing overhead cost incurred to support this level of production? What is this total amount expressed as a per-unit basis?
- If 7,500 units are produced, what is the total amount of manufacturing overhead cost incurred to support this level of production? What is this total amount expressed as a per-unit basis?
- If the selling price is \$22 per unit, what is the contribution margin per unit?
- If 10,000 units are produced, what is the total amount of direct and indirect manufacturing costs incurred to support this level of production?
- What incremental manufacturing cost will Marlene incur if it increases production from 10,000 to 10,001 units?

## 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

**Chapter 2**

### Cost-Volume-Profit Relationships

Kid Rock and Live Nation Entertainment Pull the CVP Levers

**BUSINESS FOCUS**

**LEARNING OBJECTIVES**

After studying Chapter 2, you should be able to:

- LO 2-1 Explain how changes in activity affect contribution margin and net operating income.
- LO 2-2 Prepare and interpret contribution-margin CVP graphs and a profit graph.
- LO 2-3 Use the contribution-margin ratio, CVP ratios to compare changes in contribution margin and net operating income resulting from changes in sales volume.
- LO 2-4 Show the effects on net operating income of changes in variable costs, fixed costs, selling price, and volume.
- LO 2-5 Determine the level of sales needed to achieve a targeted target profit.
- LO 2-6 Compare the range of safety and margin to the break-even point.
- LO 2-7 Compare the range of operating leverage to the break-even point and margin of contribution.
- LO 2-8 Compare the break-even point to a contribution margin and margin of contribution.
- LO 2-9 Explain the effects of changes in the contribution margin and the break-even point.
- LO 2-10 Explain why a change in variable costs will affect the break-even point and the margin of contribution.
- LO 2-11 Explain why a change in fixed costs will affect the break-even point and the margin of contribution.

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## Opening Vignette

Each chapter opens with a **Business Focus** feature that provides a real-world example for students, allowing them to see how the chapter's information and insights apply to the world outside the classroom. **Learning Objectives** alert students to what they should expect as they progress through the chapter.

*"It is a good readable book for non-accounting majors who are taking a managerial accounting course. The book is seasoned and generally pleasing to the eye and error free. Publisher provides very good support."*

Jan Duffy, Iowa State University

**“Very thorough coverage of common managerial accounting topics.”**

*Marco Lam, Western Carolina University*

**“This textbook would be very useful to our students because it helps them apply common business concepts to real-world situations.”**

*Karen Bradshaw McCarron, Ph.D., Georgia Gwinnett College*

## Concept Overview Videos

New for the 5th edition of Noreen, the Concept Overview Videos cover each learning objective through narrated, animated presentations. Formerly Interactive Presentations, each Concept Overview Video has been enhanced for improved accessibility and includes both the visual animations and transcript to accommodate all types of learners. The Concept Overview Videos also pause frequently to check for comprehension with assignable, auto-graded Knowledge Check questions.

## In Business Boxes

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

## Managerial Accounting in Action Vignettes

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

**“The chapter opening material focuses students’ attention on the topics each chapter covers. It provides the students real-world examples to aid in their understanding of business concepts.”**

*Karen Bradshaw McCarron, Ph.D., Georgia Gwinnett College*


**IN BUSINESS**

**CHEAP PART COSTS GENERAL MOTORS A FORTUNE**

A direct material component part, called a detent plunger, is used by General Motors (GM) in the manufacture of its automobile ignition switches. The part, which can be installed by direct laborers in a matter of minutes, costs GM between \$2.00 and \$5.00 per unit to manufacture. However, when this seemingly trivial component part caused ignition system failures that killed 12 people, its legal and financial impacts on GM became front-page news.

GM's troubles include a federal criminal probe that is investigating why the company did not act sooner to redesign, recall, and replace the flawed detent plunger. It appears as though GM learned of ignition switch failures in its Chevy Cobalt in 2004, but it did not redesign the detent plunger to eliminate the problem until 2007. Furthermore, the company did not issue a recall for cars that contained the faulty ignition switches until 2014. Beyond its legal matters, GM expects to spend \$4 million replacing the ignition switches of 1.6 million recalled vehicles.


Source: Jeff Bennett, “For GM, Cheap Part Now a Priority Fix,” *The Wall Street Journal*, March 13, 2014, pp. B1-B2.



**MANAGERIAL ACCOUNTING IN ACTION**

The Issue

**ACOUSTIC CONCEPTS**



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 Luchinni, 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:

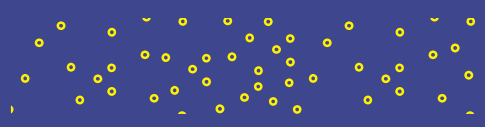
**Prem:** Bob, I've got a lot of questions about the company's finances that I hope you can help answer.

**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 big marketing campaign the sales staff is pushing for.

**Bob:** Marketing always wants more money for advertising.

**Prem:** And they are always pushing me to drop the selling price on the speaker. I agree with them that a lower price will boost our sales volume, but I'm not sure the increased volume will offset the loss in revenue from the lower price.



### Applying Excel

**LEARNING OBJECTIVES 2-4, 2-5, 2-7, 2-8** The Excel worksheet form that appears below is to be used to recreate portions of the Review Problem relating to Voltar Company. Download the workbook containing this form from Connect, where you will also receive instructions about how to use this worksheet form.

	A	B	C	D
1	Chapter 2: Applying Excel			
2				
3	Data			
4	Unit sales	20,000	units	
5	Selling price per unit	\$60	per unit	
6	Variable expenses per unit	\$45	per unit	
7	Fixed expenses	\$240,000		
8				
9	Enter a formula into each of the cells marked with a ? below			
10	Review Problem: CVP Relationships			
11				
12	Compute the CM ratio and variable expense ratio			
13	Selling price per unit	?	per unit	
14	Variable expenses per unit	?	per unit	

### Exercises

**EXERCISE 2-1 The Effect of Changes in Activity on Net Operating Income L02-1**  
Whirly Corporation's contribution format income statement for the most recent month is shown below:

	Total	Per Unit
Sales (10,000 units) .....	\$350,000	\$35.00
Variable expenses .....	200,000	20.00
Contribution margin .....	150,000	\$15.00
Fixed expenses .....	135,000	
Net operating income .....	\$15,000	

### Problems



**PROBLEM 3-16 Plantwide Predetermined Overhead Rates; Pricing L03-1, L03-2, L03-3**  
Landen Corporation uses a job-order costing system. At the beginning of the year, the company made the following estimates:

Direct labor-hours required to support estimated production .....	140,000
Machine-hours required to support estimated production .....	70,000
Fixed manufacturing overhead cost .....	\$784,000
Variable manufacturing overhead cost per direct labor-hour .....	\$2.00
Variable manufacturing overhead cost per machine-hour .....	\$4.00

### Case



**CASE 3-22 Plantwide versus Departmental Overhead Rates; Pricing L03-1, L03-2, L03-3, L03-4**  
"Blast it!" said David Wilson, president of Teledex Company. "We've just lost the bid on the Koopers job by \$2,000. It seems we're either too high to get the job or too low to make any money on half the jobs we bid."

Teledex Company manufactures products to customers' specifications and uses a job-order costing system. The company uses a plantwide predetermined overhead rate based on direct labor cost to apply its manufacturing overhead (assumed to be all fixed) to jobs. The following estimates were made at the beginning of the year:

	Department			Total Plant
	Fabricating	Machining	Assembly	
Manufacturing overhead .....	\$350,000	\$400,000	\$90,000	\$840,000
Direct labor .....	\$200,000	\$100,000	\$300,000	\$600,000

## 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.

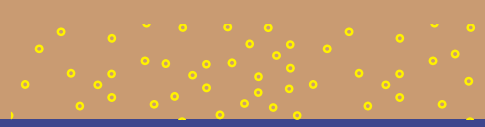
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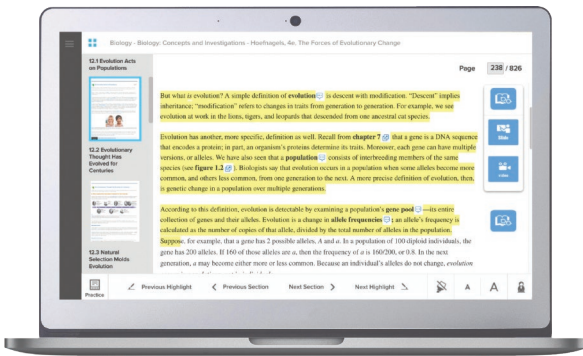
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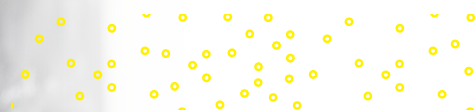


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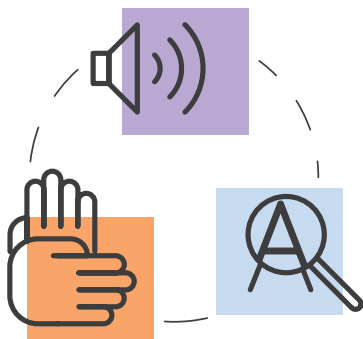
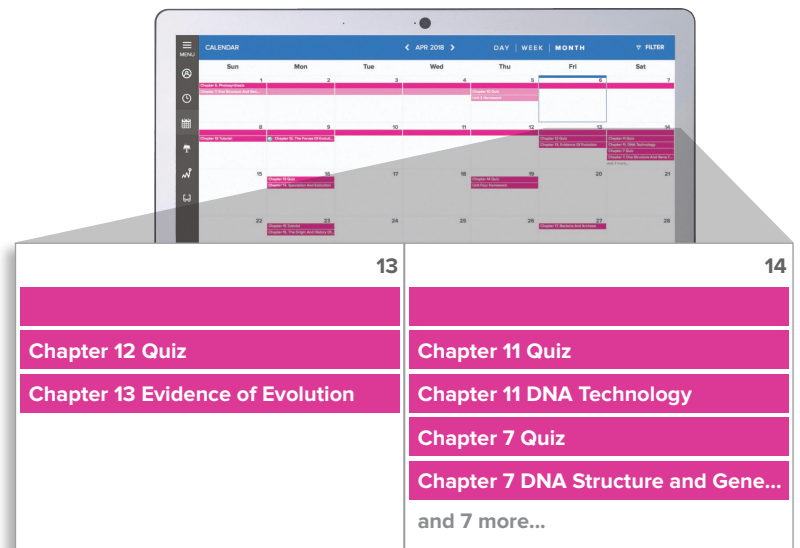
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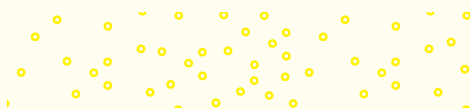
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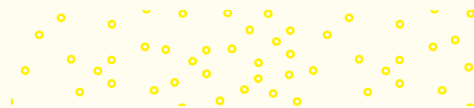
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**Eric W. Noreen • Peter C. Brewer • Ray H. Garrison**







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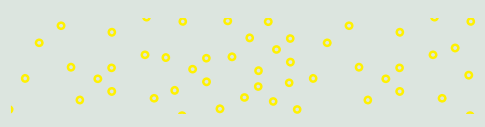
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# Prologue

## Managerial Accounting: An Overview

### Managerial Accounting: It's More Than Just Crunching Numbers

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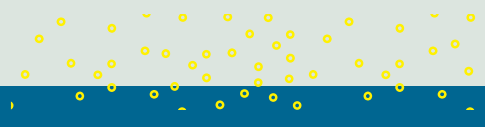
BUSINESS FOCUS



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“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 decision support. Management accountants are strategic business partners who understand the financial and operational sides of the business. They report and analyze financial as well as nonfinancial measures of process performance and corporate social performance. Think of these responsibilities as 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.



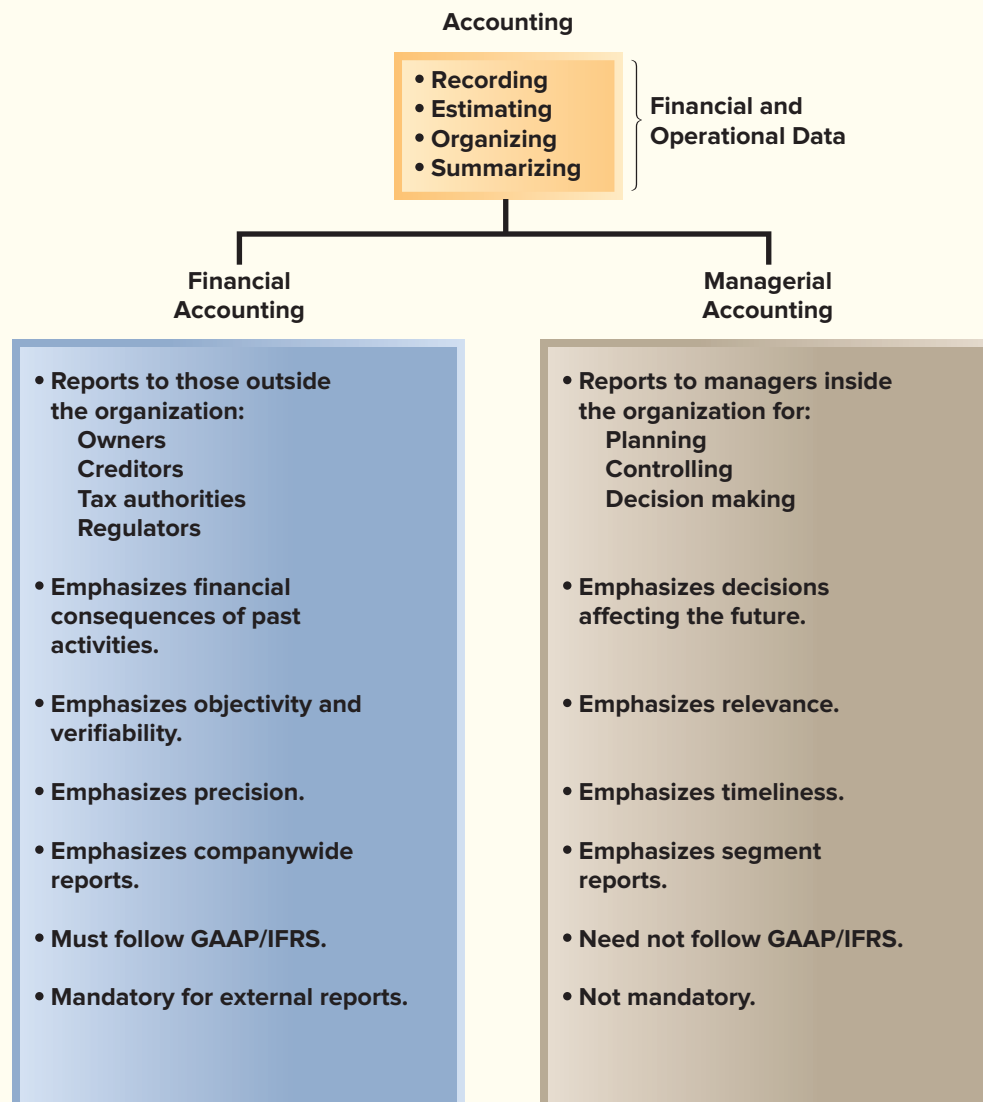
## What Is Managerial Accounting?

The prologue explains why **managerial accounting** is important to the future careers of all business students. It begins by answering two questions: (1) What is managerial accounting? and (2) Why does managerial accounting matter to your career? It concludes by discussing six topics—ethics, strategic management, enterprise risk management, corporate social responsibility, process management, and leadership—that define the business context for applying the quantitative aspects of managerial accounting.

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 in users, financial accounting emphasizes the financial consequences of past activities, objectivity and

### EXHIBIT P-1

Comparison of Financial and Managerial Accounting



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 it 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 that you work for **Procter & Gamble (P&G)** and that you 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

## THE FINANCIAL SIDE OF RUNNING A COMMUNITY THEATRE

Formulating plans and creating budgets is an important part of running a community theater. For example, the **Manatee Players** is a theater group from Bradenton, Florida, that has seen its annual operating budget grow from \$480,000 to \$1.5 million over the last 10 years. The theater's ticket sales cover about 77% of its operating costs, with additional financial support coming from individual and corporate donors.

In addition to managing its revenues, the theater also seeks to control its costs in various ways—such as saving \$3,000 per year by bringing the production of its programs in-house. Rather than promoting individual shows, the group has decided to focus its marketing dollars on touting the entire season of shows. It also shifted a portion of its marketing budget away from traditional methods to more cost-effective social-media outlets.

Source: Kevin Brass, "Let's Put on a Show," *The Wall Street Journal*, November 3, 2014, p. D7.

## IN BUSINESS



©McGraw-Hill Education/Christopher Kerrigan, photographer

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.

## 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 helped Apple develop and market the iPad. 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 Kroger relies on the control process to keep its grocery shelves stocked. We also could have looked at planning and control failures such as Takata's recall of more than 30 million defective driver-side air bags installed by a variety of automakers such as Honda, Ford, Toyota, and Subaru. In short, all managers (and that probably includes you someday) perform planning and controlling activities.

## Decision Making

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

The left-hand column of Exhibit P-2 suggests that every company must make decisions related to the products and services that it sells. For example, each year Procter & Gamble must decide how to allocate its marketing budget across numerous brands that each generates over \$1 billion in sales as well as other brands that have promising growth potential. Mattel 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. General Motors 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 that they serve. For example, Sears must decide how to



**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?

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. **Lenovo** must decide what price discounts to offer corporate clients that purchase large volumes of its products. A bank must decide whether to discontinue customers that 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 **Honeywell**, **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 by 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, 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

### 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?

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, management information systems, 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% of professional accountants in the United States work in nonpublic accounting environments ([www.imanet.org/about\\_ima/our\\_mission.aspx](http://www.imanet.org/about_ima/our_mission.aspx)).

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% 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.

## IN BUSINESS

### A NETWORKING OPPORTUNITY

The **Institute of Management Accountants** (IMA) is a network of more than 70,000 accounting and finance professionals from over 120 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 and website shown below.

Source: Conversation with Jodi Ryan, the Institute of Management Accountants' Director, Education/Corporate Partnerships. (201) 474-1556 or visit its website at [www.imanet.org](http://www.imanet.org).

**Professional Certification—A Smart Investment** If you plan to become an accounting major, the Certified Management Accountant (CMA) 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

**EXHIBIT P-4**

CMA Exam Content Specifications

<i>Part 1</i>	<i>Financial Reporting, Planning, Performance and Control</i>
	External financial reporting decisions
	Planning, budgeting, and forecasting
	Performance management
	Cost management
	Internal controls
<i>Part 2</i>	<i>Financial Decision Making</i>
	Financial statement analysis
	Corporate finance
	Decision analysis
	Risk management
	Investment decisions
	Professional ethics

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 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 multi-part CPA exam, which emphasizes rule-based compliance—assurance standards, financial accounting standards, business law, and the tax code. Information on becoming a CGMA is available at [www.cgma.org](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. . . . .		\$47,990	\$47,990
If you are top-level management . . . . .	ADD	\$54,648	
OR, if you are senior-level management . . .	ADD	\$35,416	
OR, if you are middle-level management. . .	ADD	\$15,441	
Number of years in the field _____ . . . . .	TIMES	\$1,086	
If you have an advanced degree . . . . .	ADD	\$9,990	
If you hold the CMA . . . . .	ADD	\$18,442	
If you hold the CPA . . . . .	ADD	\$11,279	
Your estimated salary level . . . . .			_____
			=====

For example, if you make it to top-level management in 10 years, have an advanced degree and a CMA, your estimated salary would be \$141,930 [ $\$47,990 + \$54,648 + (10 \times \$1,086) + \$9,990 + \$18,442$ ].

Source: Shannon Charles, "IMA's Global Salary Survey," *Strategic Finance* March 2018, pp. 28–39.



## Managerial Accounting: Beyond the Numbers

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 managerial accounting involves more than just “crunching numbers.” To be successful, managers must complement their measurement skills with six business management perspectives that “go beyond the numbers” to enable intelligent planning, control, and decision making.

### 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?
Chapter 11	What performance measures should we monitor to ensure that we achieve our strategic goals?

### *An Ethics Perspective*

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 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) of the United States 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 application. 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