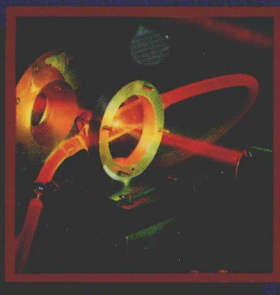


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HANSEN/MOWEN

# MANAGEMENT ACCOUNTING







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# MANAGEMENT ACCOUNTING



# PREFACE



Management Accounting, fourth edition, introduces students to the fundamentals of management accounting. It assumes that students have been introduced to the basics of financial accounting; however, extensive knowledge of financial accounting is not needed. Our emphasis is on the use of accounting information. Thus, the text should be of value to students with a variety of backgrounds. Although written to serve undergraduates, the text has been used successfully at the graduate level. The assignment material has sufficient variety to accommodate both undergraduate and graduate students.

Many business school students who are required to take a course in management accounting are not accounting majors. For these students, it is often difficult to appreciate the value of the concepts being taught. This text overcomes this attitude by using introductory chapter scenarios based on real-world settings, photos illustrating practical applications of management accounting concepts, and realistic examples illustrating the concepts within the chapters. Seeing that effective management requires a sound understanding of how to use accounting information should enhance the interest of both accounting and nonaccounting majors.

## ACTIVITY-BASED MANAGEMENT

Management accounting continues to evolve and respond to changes in the manufacturing and service sectors of today's business world. One significant response has been the development of activity-based management. The effect of the activity-based management model on management accounting has been dramatic. The widespread acceptance and practice of activity concepts demands treatment of activity-based methods in an integrated, comprehensive framework. To respond to this need, we have developed such a framework. Within this framework we continue to offer extensive coverage of such topics as activity-based costing, process value analysis, quality, productivity, life-cycle cost management, target costing, and international management accounting issues.

## TRADITIONAL COVERAGE

In a balanced approach to contemporary and traditional concepts, the fourth edition also continues to cover the traditional topics of management accounting. There is still widespread usage of the traditional management accounting models. Some of these traditional models and concepts can be adapted to an activity-based framework. Furthermore, it is fairly easy to see that traditional product-costing procedures are simply a special case of the more general activity-based costing approach. This insight lessens students' discomfort as they work with both traditional and activity-based costing models. Using an activity-based framework and integrating activity concepts throughout the text also helps students see the limitations of traditional procedures and the advantages of the activity-based approach. This understanding will help future managers to bring about change when it is merited. Perhaps understanding that management accounting is not a static discipline will itself contribute to additional innovative developments.

Take a few minutes to review the Table of Contents. You will see a balanced, integrative presentation of contemporary and traditional management accounting concepts. The Table of Contents is coded to help you quickly identify contemporary, traditional,



and integrated coverage. Chapters covering contemporary topics are highlighted in green, traditional chapters are blue, and integrated chapters are purple.

## ORGANIZATION OF THE TEXT

The sequence of chapters in the fourth edition of *Management Accounting* is significantly different. This is to facilitate the integration of activity-based costing concepts throughout the text. ABC concepts are presented much earlier than in the previous edition, allowing their integration into subsequent chapters. A detailed explanation of specific changes in chapter organization and topic coverage follows.

- In **Chapter 1**, more discussion of new management accounting concepts has been added. Students are introduced to the concepts of value chain, employee empowerment, and customer value.
- In **Chapter 2**, the following changes were made:
  - a. The introduction to variable-costing income statements was removed. (Chapter 14 covers this topic thoroughly.)
  - b. A discussion of value-chain product costing is added.
  - c. The basic concepts of cost traceability are discussed, including direct tracing and driver tracing. Basic definitions of resource and activity drivers are provided.
  - d. Services are defined and differences between services and tangible products are presented.
  - e. Cost behavior is discussed totally within an activity framework.
  - f. An overview and comparison of contemporary and traditional management accounting systems is provided. This overview is much more extensive than in the prior edition.
- **Chapter 3** (formerly Chapter 7) has been moved to allow an earlier introduction of cost behavior. Furthermore, the chapter now focuses on activity cost behavior and uses examples that involve both unit-level and nonunit-level drivers to explain cost behavior. The chapter also introduces the activity resource usage model with its insights regarding cost behavior.
- **Chapter 4** (formerly Chapter 6 and part of Chapter 3) now introduces normal costing and develops the activity-based costing model. Plantwide, departmental, and ABC approaches are defined and discussed. A new section has been added dealing with ABC assignment of costs to customers.
- In **Chapters 5 through 7** (formerly Chapters 3, 4, and 5), ABC applications have been integrated within the coverage of the traditional concepts of job-order costing, process costing, and allocation. Exercises and problems associated with these ABC applications have been added. Chapter 5 deals only with job-order costing since the overhead costing material is now found in Chapter 4.
- **Chapters 8 through 13**, the planning and control chapters, now appear in Part II, preceding the decision-making chapters. This reorganization allows additional concepts, such as budgeting, quality costs, and responsibility accounting to be developed before entering the world of decision making.
- **Chapter 10** (formerly Chapter 16) adds new material concerning the contemporary control model. It also more fully develops the process view of activity-based management. A section on driver analysis is added.
- **Chapters 14 through 18** are now fully integrated with contemporary approaches to decision making. For example, the role of the activity resource usage model in rele-

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Green chapters covering contemporary topics are highlighted in green; traditional chapters are blue; and integrated chapters are purple.



vant costing decisions is developed in Chapter 14. Similarly, Chapter 15 now presents both traditional and ABC approaches to CVP analysis.

- **Chapter 18**, covering inventory management, has been expanded to include a brief introduction to the Theory of Constraints.



## CHAPTER ORGANIZATION AND STRUCTURE

Each chapter is carefully structured to help students focus on important concepts and remember them. Components found in each chapter include:

**Learning Objectives.** Each chapter begins with a set of learning objectives to guide students in their study of the chapter. These objectives outline the organizational flow of the chapter and serve as points of comprehension and evaluation. Learning objectives are tied to specific sections of topic coverage within the chapter. They are repeated in the margin at the beginning of the corresponding chapter coverage and are summarized at the end of the chapter.

**Scenario.** An interesting, real-world scenario opens each chapter. The scenario ties directly to concepts covered in the chapter and helps students relate chapter topics to actual business happenings. “Questions to Think About,” a new feature in the fourth edition, has been added at the end of the scenarios. These critical-thinking questions are designed to pique student interest in the chapter and stimulate class discussion.

**Summary of Learning Objectives.** Each chapter concludes with a comprehensive summary of the learning objectives. Students can review and test their knowledge of key concepts and evaluate their ability to complete chapter objectives.

**Key Terms.** Throughout each chapter, key terms are highlighted and repeated in the margin for quick identification. A list of key terms, with page references, is presented at the end of each chapter to provide additional reinforcement. All key terms are defined in a comprehensive glossary at the end of the text.

**Review Problems.** Each chapter contains at least one review problem with the accompanying solution provided. These review problems demonstrate the application of major concepts and procedures covered in the chapter. Pages with review problems are shaded with a blue background, allowing for quick location.

**Questions for Writing and Discussion.** Approximately 15 to 25 short-answer questions appear at the end of each chapter to test students’ knowledge of chapter concepts.



Chapter 10 Cost Accounting

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14. Is a typical hour wage rate one of activities that drive costs? Why are they important?

15. What is a learning curve effect?

16. What is the first-time production learning curve effect? How can it be used to predict when a new product will be produced?

17. What is a volume (a long-run) learning curve effect? How can it be used to predict when a new product will be produced?

18. What are low-level activities? High-level activities? What are the advantages? Is a high-level activity always a high-level cost?

19. What is *3D manufacturing*? In what way is it different from *2D manufacturing*? How does *3D manufacturing* affect low-level manufacturing?

20. Why are manufacturing costs 3D? Explain how they differ from production disbursements.

21. How does *3D manufacturing* affect manufacturing costs in a *2D manufacturing* system? Give an example of how the change in manufacturing costs affects the cost of a product.

22. In *3D manufacturing*, does labor cost vary as much as in *2D manufacturing*? Give an example of how the change in manufacturing costs affects the cost of a product.

23. Without numbers, it is not distinctive between *2D manufacturing* and *3D manufacturing*. In what way is it distinctive? Explain.

24. How does *3D manufacturing* increase production costs? Explain.

## WARM-UP EXERCISES

The system provides feedback on warm-up exercises based on the examples in the chapter. Each example has a system goal, a list of activities that affect the system, and a list of costs. The goal may vary from the system goal, but the activities can be the same.

### WU1: Normal service costs

Normal service costs are the costs of the service provided by the company.

10-108

As the beginning of the year, the controller of Telling Company budgeted overhead costs at \$1,000,000 for the year. The actual overhead costs for the year were \$1,050,000.

	April 1st	August 1st	December 31st
Actual overhead	\$400,000	\$450,000	\$1,000,000
Actual costs produced	\$1,000,000	\$1,200,000	\$2,500,000
	<b>Overhead Costs</b>		
Direct production	\$100,000	\$150,000	\$300,000
Indirect production	\$300,000	\$300,000	\$700,000
Other production	\$100,000	\$100,000	\$200,000

REQUIRED:

1. Calculate the actual cost per unit for the entire period.
2. What happens with actual cost per unit if the company uses the actual cost per unit?
3. What if the company uses a predetermined unit cost? How does this compare with the actual cost per unit? Is it desirable for a company to use a predetermined unit cost?

Notes: Actual production is in units of adulphonies. For the first month only, Sales expects the following data:

### WU2: Planned Rate Method

10-109

	Required overhead	Actual overhead
Expected cost of actual labor hours	\$180,000	\$180,000
Expected cost of actual machine hours	\$120,000	\$120,000
Actual overhead		\$300,000
	<b>Costs</b>	
	<b>Costs</b>	<b>Rate</b>
Direct production	\$400,000	\$100,000
Indirect production	\$400,000	\$100,000
Other production	\$400,000	\$100,000

**Exercises.** Exercises usually emphasize one or two chapter concepts and can be completed fairly quickly (30 minutes maximum). Exercises require basic application and computation and often ask students to interpret and explain their results.

**Managerial Decision Cases.** Each chapter (except Chapter 1, due to its introductory nature) contains at least two cases. Cases have greater depth and complexity than problems. They are designed to help students integrate multiple concepts and further develop their analytical skills. At least one case in each chapter deals with ethical behavior. A research assignment case also appears in many chapters, allowing students to expand their research and communication skills beyond the classroom.

## ADDITIONAL FEATURES OF THE FOURTH EDITION

## International Coverage

To emphasize the importance of international issues, we provide a full chapter on this topic (Chapter 13) as well as examples integrated throughout the text.

## Ethics

We continue to emphasize the study of ethical conduct for management accountants in the fourth edition. The role of ethics is discussed in Chapter 1, and the code of ethics developed by the Institute of Management Accountants is introduced. Examples of ethical conduct relative to management accounting issues are provided in other chapters as well. Chapter 13, dealing with international issues in management accounting, also has a section that discusses ethics in the international environment. Chapter 1 has several substantive problems on ethics, and subsequent chapters have at least one problem or case involving an ethical dilemma. These problems allow the instructor to introduce value judgments into management accounting decision making.

## Real-World Emphasis

The fourth edition incorporates many real-world applications of management accounting concepts, making the study of these concepts more familiar and interesting to the student. Opening scenarios introduce chapter topics within the context of realistic business examples. Real-company examples are incorporated throughout many chapters. Names of real companies are highlighted throughout the text for easy identification and



See pages 32, 166, 308

See pages 281–284

See pages 13, 107,  
123, 310

are listed in a company index at the back of the text. Photos have been added in individual chapters to help students relate to the real-world nature of management accounting. A photo essay, following Chapter 7, uses scenes from an actual company (**Panasonic**) to depict management accounting concepts in action.

### Increased Coverage of Service Industry

Service businesses are experiencing unprecedented growth in today's economy. Managers of service businesses often use the same management accounting models as manufacturers, but must adapt them to their own unique situations of providing intangibles to consumers. To address this need, we have increased the coverage of service industry applications in the fourth edition. In addition, many real-company examples of service businesses are given. Service companies are highlighted in the company index at the end of the text.

## ANCILLARIES

**Check Figures.** Key figures for solutions to selected problems and cases are provided at the end of the text as an aid to students as they prepare their answers.

**Study Guide** (Prepared by Donna Ulmer, St. Louis Community College at Meramec). The study guide provides a detailed review of each chapter and allows students to check their understanding of the material through quizzes and exercises. Specifically, students are provided with a Key Terms Test, a Chapter Quiz, and Practice Exercises. Answers are provided for all assignment material. New to this edition are Learning Organizers, developed to compare and contrast key concepts and aid in visual learning.

**Instructor's Manual** (Prepared by Marvin Bouillon, Iowa State University). The instructor's manual contains a complete set of lecture notes for each chapter, a listing of all exercises and problems with estimated difficulty and time required for solution, and a transition guide for the third edition of *Management Accounting* as well as other widely used management accounting texts. The manual also includes the section, "Cooperative Learning Techniques," written by Philip G. Cottell, Jr., Miami University, and Barbara J. Millis, University of Maryland.

**Solutions Manual.** The solutions manual contains the solutions for all end-of-chapter exercises, problems, and cases. Solutions have been error-checked to ensure their accuracy and reliability.

**Solutions Transparencies.** Acetate transparencies for selected solutions are also available.

**Test Bank** (Prepared by Anne Wessely and Donna Ulmer, St. Louis Community College at Meramec). The test bank offers multiple-choice problems, short problems, and essay problems. Designed to make exam preparation as convenient as possible for the instructor, each test bank chapter contains enough questions and problems to permit the preparation of several exams without repetition of material. The test bank is available in both printed and computerized (MicroExam III) versions.

**Spreadsheet Templates** (Prepared by John Palipchak). Template disks, using Lotus 1-2-3®,<sup>1</sup> provide outlined formats of solutions for selected end-of-chapter exercises and problems. These exercises and problems are identified with a margin symbol. The



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templates allow students to develop spreadsheet and “what-if” analysis skills. These disks are provided free of charge to instructors at educational institutions that adopt this text.

**PowerPoint Slides and Student Study Notes** (Prepared by Ted Compton, Ohio University). Selected transparencies of key concepts and exhibits from the text are available in PowerPoint®<sup>2</sup> presentation software. These slides integrate spreadsheets and video to provide a comprehensive multimedia outline of each chapter. Printouts of the slides, with accompanying notes, provide students with an individualized note-taking and study device.

**Video Supplements.** Three videos from the third edition will again be available for the fourth edition of the text. In a light, but highly demonstrative video, *GE Lighting Systems*, GE employees, in a mock setting, test the effectiveness of the contemporary manufacturing concepts of JIT, total production maintenance, and total quality control against traditional manufacturing methods and compare the results. A second video, *Activity-Based Costing: The Next Generation*, presents a joint teleconference from the Public Broadcasting System and Robert Morris College in which three partners from Big Six firms discuss their experiences in implementing ABC systems for clients. The third video is a series of segments featuring interviews with management accountants from various companies and footage of their operations. Included are segments that show the new manufacturing environment and how such concepts as JIT and ABC are applied in real situations.

In addition, a series of five videos is currently under development by LEARNet, a Michigan-based educational video company. These videos will incorporate footage of actual companies to illustrate key management accounting concepts, including activity-based costing, product costing, value-chain analysis, and total quality management.

**Cases in Cost Management: A Strategic Emphasis** (Written by John K. Shank, Dartmouth College). This set of cases is offered for those instructors who want to augment their management accounting course with richer, longer “fun” problems. Each case includes specific numerical questions to challenge and help develop the students’ calculation skills with management accounting techniques. Each case also includes broader discussion questions to sharpen the controversial aspects of the calculations and emphasize the managerial issues behind the numbers. Accompanying the book is an instructor’s manual, which contains comprehensive teaching commentaries for each of the cases.

**Readings and Issues in Cost Management** (Edited by James Reeve, University of Tennessee). This text is designed to expose students to the concepts and information they need to become responsive and flexible managers. Articles in the text cover topics such as TQM, employee empowerment, reengineering, continuous improvement, and short-cycle management.

## ACKNOWLEDGMENTS

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### Learning Objectives

After studying Chapter 1, you should be able to:



1. Explain the need for management accounting information.
2. Explain the differences between management accounting and financial accounting.
3. Provide a brief historical description of management accounting.
4. Identify and explain the emerging themes of management accounting.
5. Describe the role of management accountants in an organization.
6. Explain the importance of ethical behavior for managers and management accountants.
7. Identify three forms of certification available to management accountants.

# CHAPTER

## Introduction: The Role, History, and Direction of Management Accounting

# SCENARIO



Consider the following comments made by individuals from several different organizations:

A. Manager: "I have just received a request to bid on the production of three specially constructed drill presses. The competition for this job is intense. Given the specifications described in the written request and the level of competition we are facing, I need to know the design costs, the expected manufacturing costs, and any other associated costs, and I need to know them with a high degree of accuracy. Knowing the costs of the job will reveal to me the minimum bid that I can submit that will assure us of a reasonable dollar return." (Product costing and pricing decision)

B. Local Operator(s): "I am confident that replacing the tooling in our machines and redesigning the



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