

会计学
影印系列

Managerial Accounting

Tools for Business Decision Making

管理会计： 商务决策工具

第2版

[美] 韦安特(Weygandt) 基索(Kieso)

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管理会计: 商务决策工具

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序

随着世界经济一体化进程的加快,会计信息作为国际通用商业语言的功能越来越强化。在中国加入WTO之后,中国经济正以更快的速度融入世界经济大潮之中。与此相适应,中国的会计标准必将进一步向国际标准靠拢。举世公认,由于多方面的原因,在会计标准国际化的过程中,美国的公认会计准则(GAAP)是最具影响力的。因此,更多地了解美国的GAAP,对于推动我国会计改革的进一步深化、加速中国会计标准的国际化,具有很重要的意义。在此背景下,中信出版社引进美国著名出版社出版的有重大影响的英文原版会计教科书,是一件很有意义的事情。

这套英文教科书,内容全面,架构完备,既包括基本的会计学原理、财务会计和管理会计,也包括高层次的专题会计、财务报告和报表分析。其中,《会计学原理》、《财务会计》、《管理会计》和《中级会计》的作者均是美国久负盛名的会计学教授,无论杰利·J. 韦安特博士、唐纳德·E.基索博士,还是保罗·D.金梅尔博士、特里·D.沃菲尔德博士,在美国会计学界都具有重大影响和权威性。他们都是美国会计协会、美国注册会计师协会的成员,并曾服务于财务会计准则委员会(FASB)的重要部门,对于GAAP的修订及改革发展具有相当的影响。这些书是他们总结多年教学经验和专业研究经验精心编写而成,一经出版便备受瞩目和欢迎,并且已经成为美国高校会计教学中的必选书籍。尤其是《中级会计》一书,自1965年首次出版,至今已出版到第10版,每个版本都受到热烈欢迎,目前的第10版不仅增加了光盘,更增加了网上相关辅导和练习,使其成为更加完善的教学用书。

另外,《高级会计》、《会计信息系统》、《国际会计与跨国企业》和《财务会计理论与分析》等书的作者也是颇具盛名的专家权威,这些作者既有多年教学经验,又有长期实际从业经验,其编写的书籍既适合普通高校会计专业本科生学习,也适用于广大实际工作者,其中《财务会计》(*Financial Accounting*)一书特别适合非会计专业的读者了解美国会计。

我衷心祝愿这套英文教科书的出版,能给广大读者带来便利。

戴德明

2002年5月8日于中国人民大学宜园

ABOUT THE AUTHORS

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Accounting Review; he also has served as President and Secretary-Treasurer of the American Accounting Association. In addition, he has been actively involved with the American Institute of Certified Public Accountants and has been a member of the Accounting Standards Executive Committee (AcSEC) of that organization. He has served on the FASB task force that examined the reporting issues related to accounting for income taxes and is presently a trustee of the Financial Accounting Foundation. Professor Weygandt has received the Chancellor's Award for Excellence in Teaching and the Beta Gamma Sigma Dean's Teaching Award. He is on the board of directors of M & I Bank of Southern Wisconsin and the Dean Foundation. He is the recipient of the Wisconsin Institute of CPAs Outstanding Educator's Award and the Lifetime Achievement Award. In 2001 he received the American Accounting Association's Outstanding Accounting Educator Award.

Donald E. Kieso, PhD, CPA, received his bachelor's degree from Aurora University and his doctorate in accounting from the University of Illinois. He has served as chairman of the Department of Accountancy and is currently the KPMG Peat Marwick Emeritus Professor of Accounting at Northern Illinois University. He has public accounting experience with Price Waterhouse & Co. (San Francisco and Chicago) and Arthur Andersen & Co. (Chicago) and research experience with the Research Division of the American Institute of Certified Public Accountants (New York). He has done postdoctorate work as a Visiting Scholar at the University of California at Berkeley and is a recipient of NIU's Teaching Excellence Award and four Golden Apple Teaching Awards. Professor Kieso is the author of other accounting and business books and is a member of the American Accounting Association, the American Institute of Certified Public Accountants, and the Illinois CPA Society. He has served as a mem-

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Paul D. Kimmel, PhD, CPA, received his bachelor's degree from the University of Minnesota and his doctorate in accounting from the University of Wisconsin. He is an Associate Professor at the University of Wisconsin-Milwaukee, and has public accounting experience with Deloitte & Touche (Minneapolis). He was the recipient of the UWM School of Business Advisory Council Teaching Award, the Reggie Taite Excellence in Teaching Award, and a three-time winner of the Outstanding Teaching Assistant Award at the University of Wisconsin. He is also a recipient of the Elijah Watts Sells Award for Honorary Distinction for his results on

the CPA exam. He is a member of the American Accounting Association and has published articles in *Accounting Review*, *Accounting Horizons*, *Advances in Management Accounting*, *Managerial Finance*, *Issues in Accounting Education*, *Journal of Accounting Education*, as well as other journals. His research interests include accounting for financial instruments and innovation in accounting education. He has published papers and given numerous talks on incorporating critical thinking into accounting education, and helped prepare a catalog of critical thinking resources for the Federated Schools of Accountancy.

PREFACE

In this Second Edition of *Managerial Accounting: Tools for Business Decision Making*, we strove to build on those things that made the First Edition a success in the classroom. Our goals are straightforward: We want this book to present the fundamental concepts of managerial accounting in an easy-to-understand fashion. We want to present only those concepts that students need to know. And we want students to leave the course confident that they will be able to apply the basic decision skills that they learned in this course when they enter the workforce. As a result, as you read through the list of changes to this edition and review the text, the common theme you will notice is that these changes were made to simplify and clarify our presentation of basic concepts or to strengthen the students' decision-making skills. We are very excited about this edition of the text. As in the First Edition, our efforts were driven by the following key beliefs:

"Less is more."

Our instructional objective is to provide students with an understanding of those concepts that are fundamental to the use of managerial accounting. Most students will forget procedural details within a short period of time. On the other hand, concepts, if well taught, should be remembered for a lifetime. Concepts are especially important in a world where the details are constantly changing.

"Don't just sit there—do something."

Students learn best when they are actively engaged. The overriding pedagogical objective of this book is to provide students with continual opportunities for active learning. One of the best tools for active learning is strategically placed questions. Our discussions are framed by questions, often beginning with rhetorical questions and ending with review questions. Even our selection of analytical devices, called *Decision Tools*, is referenced using key questions to emphasize the purpose of each. In addition, technology offers many opportunities to enhance the learning environment. Web site at <http://www.wiley.com/college/weygandt>, we offer many opportunities for active learning.



"I'll believe it when I see it."

Students will be most willing to commit time and energy to a topic when they believe that it is relevant to their future careers. There is no better way to demonstrate relevance than to ground discussion in the real world. By using high-profile companies like Starbucks, Microsoft, Ben & Jerry's, and Intel to frame our discussion of accounting issues, we demonstrate the relevance of accounting while teaching students about companies with which they are familiar. In addition, because the economy has shifted toward service industries, many of the companies used as examples are service based. This shift is emphasized by our *Business Insight—Service Company Perspective* feature, as well as references to service companies such as American Express, Federal Express, and Union Pacific Railroad.



"You'll need to make a decision."

All business people must make decisions. Decision making involves critical evaluation and analysis of the information at hand, and this takes practice. We have integrated important analytical tools throughout the book. After each new decision tool is presented, we summarize the key features of that tool in a *Decision Toolkit*. At the end of each chapter, the *Using the Decision Toolkit* activity provides a comprehensive demonstration of an analysis of a real-world problem using the decision tools presented in the chapter. The *Broadening Your Perspective* homework activities require the student to employ these decision tools. Finally, an exciting new feature, *Cases for Management Decision Making*, provided at the end of the text, requires students to employ decision-making skills in rich, realistic business settings.



KEY FEATURES OF EACH CHAPTER

Chapter 1, Managerial Accounting

- Compares and contrasts managerial accounting with financial accounting.
- Identifies three broad functions of management.
- Defines three classes of manufacturing costs.
- Distinguishes between product costs and period costs.
- Presents costs of goods manufactured section of income statement.
- Presents overview of trends in managerial accounting including shift toward service industries, value chain management, enterprise resource planning, just-in-time inventory, and activity-based costing.

Chapter 2, Job Order Cost Accounting

- Provides overview of cost accounting systems.
- Illustrates flow of costs in a job order cost system.
- Presents use of job cost sheet.
- Demonstrates use of predetermined overhead rate.
- Illustrates basic entries for job order cost system.
- Provides simple presentation of overapplied and underapplied overhead.

Chapter 3, Process Cost Accounting

- Explains the difference between job order and process costing systems.
- Illustrates the flow of costs and end-of-period accounting procedures for process costing.
- Demonstrates computation of physical units of production, equivalent units of production, and unit costs.
- Shows how to assign costs to units of output and prepare a production cost report.

Chapter 4, Activity-Based Costing

- Explains the need for activity-based costing (ABC).
- Contrasts ABC to traditional costing systems.
- Identifies numerous activities, activity cost pools, and cost drivers.
- Discusses implications of value-added and non-value added activities.
- Illustrates use of ABC in service industries.
- Reviews the benefits and limitations of ABC.
- Illustrates use of just-in-time inventory systems.
- Appendix discusses the implications of activity hierarchies levels.

Chapter 5, Cost-Volume-Profit Relationships

- Distinguishes between variable and fixed costs, and explains relevant range and mixed costs.
- Identifies components and assumptions of CVP analysis.
- Discusses concept of contribution margin.
- Illustrates calculation of break-even point.
- Discusses margin of safety and target net income.
- Illustrates CVP income statement.
- Appendix presents variable and absorption costing.

Chapter 6, Budgetary Planning

- Discusses benefits of budgeting.

- Illustrates the process of assembling information for a master budget.
- Prepares budgeted income statement, balance sheet, and cash budget.
- Discusses use of budgets in merchandising, service, and not-for-profit enterprises.

Chapter 7, Budgetary Control and Responsibility Accounting

- Explains how budgets are used to control costs and operations.
- Contrasts static budgets and flexible budgets.
- Uses a case study to illustrate usefulness of flexible budgets.
- Illustrates responsibility reporting systems.
- Defines cost centers, profit centers, and investment centers.
- Illustrates the computation and use of return on investment and (in a chapter appendix) residual income.

Chapter 8, Performance Evaluation Through Standard Costs

- Differentiates between a standard and a budget.
- Discusses advantages of standard costs and methods of computing.
- Illustrates computation of direct materials variance, direct labor variance, and manufacturing overhead variance.
- Demonstrates analysis through comparison of actual with standard.
- Appendix illustrates the journal entries for a standard cost system.

Chapter 9, Incremental Analysis

- Presents the concept of incremental analysis through a simple example.
- Explains the concepts of relevant cost, opportunity cost, and sunk cost.
- Applies incremental analysis in the following decision settings:
 - Accept an order at a special price
 - Make or buy
 - Sell or process further, including discussion of joint costs
 - Retain or replace equipment
 - Eliminate an unprofitable segment
- Reviews sales mix issues, including how to allocate limited resources across multiple products and how to determine break-even points with more than one product.

Chapter 10, Capital Budgeting

- Discusses nature of capital budgeting decisions.
- Describes and illustrates four methods of evaluating capital expenditures:
 - Cash payback technique
 - Net present value method
 - Internal rate of return method
 - Annual rate of return technique
- Discusses the profitability index, post audits, and the implications of intangible benefits when making capital budgeting decisions.

Chapter 11, Pricing Decisions

- Demonstrates how to compute target cost when a product's price is determined by the market.
- Illustrates how to compute target selling price using cost-plus pricing.
- Demonstrates how to use time and materials pricing when services are provided.
- Discusses the objective of transfer pricing.
- Illustrates how to determine a transfer price using the cost-based, market-based, and negotiated approaches.
- Explains the issues involved when goods are transferred between countries with different tax rates.

Chapter 12, The Statement of Cash Flows

- Discusses the purpose and usefulness of the statement of cash flows.
- Discusses the implications of the product life-cycle for analysis of the statement of cash flows.
- Illustrates preparation of the statement of cash flows using a two-year progression of transactions. Year 1 is basic transactions, and year 2 involves more advanced transactions. The presentation is designed to allow the instructor to focus exclusively on either the indirect approach or the direct approach, or to cover both.
- Presents ratio analysis of the statement of cash flows using free cash flow, capital expenditure ratio, current cash debt coverage, cash debt coverage, and cash return on sales.

Chapter 13, Financial Analysis: The Big Picture

- Provides a comprehensive discussion of analytical tools and their interrelationships.
- Discusses the concept of earning power and the presentation of irregular items: discontinued operations, extraordinary items, and cumulative effect of change in accounting principle.
- Includes a basic discussion of comprehensive income.
- Illustrates horizontal and vertical analysis.
- Provides thorough analysis of the actual financial statements of Kellogg Company using ratio analysis.

NEW IN THIS EDITION

The First Edition of *Managerial Accounting* was very well received. In the spirit of continuous improvement, we have made many changes in this Second Edition. The changes can be categorized into three types: Cases for Management Decision Making, Interactive CD-ROM and Web site, and changes to the text chapters.

Cases for Management Decision Making

Consistent with our objective of developing decision-making skills, we have added a series of cases to this edition of the text. These cases provide opportunities to use the decision tools presented in the chapters in a realistic business situation. The cases can be used as a comprehensive capstone activity at the end of the course, or as a recurring activity during the course. These activities are intended to be richer and more challenging than a traditional problem but are still targeted at the introductory-level student.

Interactive CD-ROM and Web Site

Technology offers many opportunities to enrich the learning environment. With this edition of the text we have expanded the materials provided on our Web site, as well as developed an interactive CD-ROM. These materials include the following:

Learning Techniques resources are designed to improve student study skills.

- Learning Styles Quiz
- Interactive Study Skills Chart

Course Materials reinforce materials covered in the text or provide resources to develop communication skills.

- Interactive Self-Test
- Key Term Matching Activity
- Accounting Cycle Tutorial
- Interactive Problems and Demonstration Problems
- Writing Handbook
- Surviving the Group Project

Career Paths provides resources about careers in accounting.

- Why Accounting Is Important
- Careers in Accounting
- Professional Profiles

KEY CHANGES IN EACH CHAPTER**Chapter 1, Managerial Accounting**

- New Feature Story on Compaq Computer
- Revised and streamlined presentation on management functions
- New Business Insight on auto manufacturing productivity
- New Business Insight on managing the delivery of bananas
- Revised coverage of service industry trends, significantly revised illustrations
- New section on value chain management
- Two new e-Business Insights on computerized business infrastructures and computer-integrated manufacturing
- Revised exercises and problems

Chapter 2, Job Order Cost Accounting

- Clarified rationale for predetermined overhead rates
- New e-Business Insight on GM's Web-based order system
- New Business Insight on the use of microcomputers by small manufacturers
- New Business Insight on overhead in service companies
- Revised exercises and problems

Chapter 3, Process Cost Accounting

- Added a six-page appendix discussing and illustrating the FIFO method of computing equivalent units (as contrasted to the weighted average method covered in the chapter)

Chapter 4, Activity-Based Costing

- Moved “Activity-Based Costing in Service Industries” section from appendix into body of the chapter
- Moved section on hierarchy of activity levels from the body of the chapter into an appendix
- Revised the infographic on activities and related cost drivers to tie it more conceptually to the illustrations, and expanded the text explanation of the related illustrations
- New Business Insight on General Mills’s efforts to eliminate nonvalue-added activities
- Revised exercises and problems

Chapter 5, Cost-Volume-Profit Relationships

- Added new section on CVP income statement, including illustrations of the statement with and without net income
- Revised the section on use of the mathematical equation in breakeven analysis
- Simplified the presentation of detailed CVP income statement
- Revised the Decision Toolkit to include the contribution margin ratio
- New Business Insight on efficiency in woodworking
- New e-Business Insight on flightserve.com
- New e-Business Insight on Internet business “conversion rates”
- New Business Insight on the use of computer graphics in “what if analysis”
- Revised exercises and problems

Chapter 6, Budgetary Planning

- Simplified long-range planning discussion
- New e-Business Insight on improving planning and budgeting
- Revised exercises and problems

Chapter 7, Budgetary Control and Responsibility Accounting

- Added new chapter appendix on “Residual Income—Another Performance Measurement” and related homework material
- New e-Business insight on enterprise application systems (EAS)
- Revised exercises and problems

Chapter 8, Performance Evaluation Through Standard Costs

- Added a new Before You Go On (Review It/Do It) following direct materials variances section
- Moved the Standard Cost Accounting System section with journal entries into a chapter appendix
- New e-Business Insight on computerized standard cost systems
- Revised exercises and problems

Chapter 9, Incremental Analysis

- Added joint-product presentation with illustrations in sell-or-process-further section, plus related homework materials
- Revised exercises and problems

Chapter 10, Capital Budgeting

- Added several new marginal Helpful Hints
- New e-Business Insight on General Electric’s e-business related capital expenditures
- Revised exercises and problems

Chapter 11, Pricing Decisions

- Entirely new chapter consisting of two major pricing-decision parts: I. External sales (customer pricing), and II. Internal sales (transfer pricing).
- A chapter appendix discusses the absorption cost and the contribution approaches
- All new homework material
- A Comprehensive Problem covering Chapters 1–11 is provided on the CD-Rom that accompanies the text, as well as on the book’s Web site.

Chapter 12, The Statement of Cash Flows (formerly Chapter 11)

- New Feature Story—“Cash is Cash, and Everything Else is Accounting”
- New section on the corporate life cycle
- New section on the meaning of the term “cash flows”
- New Business Insight on the corporate life cycle of specific companies
- New infographic drawings
- New Business Insight comparing “net income” to “net cash from operations”
- Revised exercises and problems

Chapter 13, Financial Analysis: The Big Picture (formerly Chapter 12)

- New Feature Story on the day-trading New York cabbie
- Updated Kellogg Company and Quaker Oats financial results used in analysis
- Expanded the explanation of comparative analysis
- New e-Business Insight on internal security analysis
- Revised exercises and problems

Appendix A, New Specimen Financial Statements: Tootsie Roll Industries, Inc.**Appendix B, New Comparative Specimen Financial Statements: Hershey Foods Corporation****Appendix C: Time Value of Money****Appendix D: Ethical Standards****Cases for Management Decision Making**

- New selection of five cases to be used in conjunction with Chapters 2, 4, 5, 6, 9, 10, and 11.

PROVEN PEDAGOGICAL FRAMEWORK

In this book we have used many proven pedagogical tools to help students learn accounting concepts and apply them to decision making in the business world. This pedagogical framework emphasizes the *processes* students undergo as they learn.

Learning How to Use the Text

- The text begins with a **Student Owner's Manual**, which helps students understand the value of the text's learning aids and how to use them. After becoming familiar with the pedagogy, students can take a **Learning Styles Quiz** (p. xxiii) to help them identify how they learn best—visually, aurally, through reading and writing, kinesthetically, or through a combination of these styles. They then will find tips on in-class and at-home learning strategies, as well as help in identifying the text features that would be most useful to them based on their learning style.
- Additionally, Chapter 1 contains notes (printed in red) that explain each learning aid the first time it appears.
- **The Navigator** pulls all the learning aids together into a learning system. It is designed to guide students through each chapter and help them succeed in learning the material. The Navigator consists of (1) a checklist at the beginning of the chapter, which outlines text features and study aids students will need in order to master the topics, and (2) a series of check boxes that prompt students to use the learning aids and set priorities as they study. At the end of the chapter, students are reminded to return to The Navigator to check off their completed work. The Navigator from Chapter 2 is shown below.

THE NAVIGATOR ✓	
■ Scan Study Objectives	<input type="checkbox"/>
■ Read Feature Story	<input type="checkbox"/>
■ Read Preview	<input type="checkbox"/>
■ Read text and answer <i>Before You Go On</i> p. 48 <input type="checkbox"/> p. 59 <input type="checkbox"/> p. 66 <input type="checkbox"/>	
■ Work Using the Decision Toolkit	<input type="checkbox"/>
■ Review Summary of Study Objectives	<input type="checkbox"/>
■ Work Demonstration Problem	<input type="checkbox"/>
■ Answer Self-Study Questions	<input type="checkbox"/>
■ Complete Assignments	<input type="checkbox"/>

Understanding the Context

- **Study Objectives**, listed at the beginning of each chapter, form a learning framework throughout the text. Each objective is repeated in the margin at the appropriate place in the main body of the chapter and again in the **Summary of Study Objectives**. Also, end-of-chapter assignment materials are linked to the Study Objectives.
- A chapter-opening **Feature Story** presents a scenario that helps students picture how the chapter topic relates to the real world of accounting and business situations. It also serves as a recurrent example in the chapter. Each

story that focuses on a well-known company ends with the company's Web address to encourage students to go on-line for more information about these companies.

- A chapter **Preview** links the chapter-opening Feature Story to the major topics of the chapter. First, an introductory paragraph explains how the story relates to the topics to be discussed, and then a graphic outline of the chapter provides a "road map," useful for seeing the big picture as well as the connections between subtopics.

Learning the Material

- This book emphasizes the accounting experiences of **real companies and business situations throughout**, from chapter-opening Feature Stories to the chapter's last item of homework material. Details on these many features follow. In addition, every chapter uses accounting practices of real companies. Names of real companies are highlighted in red, and many of these real-world examples and illustrations are identified by a company logo.
- Continuing the real-world flavor of the book, **Business Insight** boxes in each chapter give students glimpses into how real companies make decisions using accounting information. The boxes, highlighted with striking photographs, focus on four different accounting perspectives—those of managers, international business, service companies, and e-business. The service company and e-business categories are new to this edition.
- **Before You Go On** sections occur at the end of each key topic and consists of two parts: **Review It** serves as a learning check within the chapter by asking students to stop and answer knowledge and comprehension questions about the material just covered. **Do It** is a brief demonstration problem that gives immediate practice using the material just covered. An **Action Plan** lists the steps necessary to complete the task, and a **Solution** is provided to help students understand the reasoning involved in reaching an answer. The **Do It** exercises are keyed to related homework exercises.
- **Helpful Hints** in the margins expand upon or help clarify concepts under discussion in the nearby text. This feature actually makes the book an *Annotated Student Edition*.
- **Key terms** and concepts are printed in blue where they are first explained in the text and are defined again in the end-of-chapter glossary. **Alternative Terminology** notes in the margins present synonymous terms that students may come across in subsequent accounting courses and in business.
- Each chapter presents **decision tools** that are useful for analyzing and solving the business problems discussed in that chapter. At the end of the text discussion relating to the decision tool, a **Decision Toolkit** summarizes the key features of that decision tool and reinforces its purpose.
- A **Using the Decision Toolkit** exercise, which follows the final *Before You Go On* section in the chapter, shows students how to use the decision tools presented in that chapter.

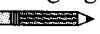

Putting It Together

At the end of each chapter, between the body of the text material and the homework materials, are several features useful for review and reference:

- A **Summary of Study Objectives** reviews the main points of the chapter; the **Decision Toolkit—A Summary** presents in one place the decision tools used throughout the chapter; and a **Glossary** of important terms gives definitions with page references to the text.
- Next, a **Demonstration Problem** gives students another opportunity to refer to a detailed solution to a representative problem before they do homework assignments. An **Action Plan** presented in the margin lists strategies to assist students in understanding the solution and help establish a logic for approaching similar problems. A **Web icon** tells students that there is an Interactive Demonstration Problem they can work on the book's Web site.

Developing Skills through Practice

Throughout the homework material, questions, exercises, and problems make use of the decision tools presented in the chapter.

- **Self-Study Questions** comprise a practice test to enable students to check their understanding of important concepts. These questions are keyed to the Study Objectives, so students can go back and review sections of the chapter in which they find they need further work. Answers appear on the last page of the chapter.
- **Questions** provide a full review of chapter content and help students prepare for class discussions and testing situations.
- **Brief Exercises** build students' confidence and test their basic skills. Each exercise focuses on a single **Study Objective**.
- Each of the **Exercises** focuses on one or more of the **Study Objectives**. These tend to take a little longer to complete and present more of a challenge to students than Brief Exercises. The Exercises help instructors and students make a manageable transition to more challenging problems. Certain exercises, marked with a , help students practice business writing skills.
- **Problems** stress the application of the concepts presented in the chapter. Two sets of problems—A and B—have corresponding problems keyed to the same **Study Objectives**, thus giving instructors greater flexibility in assigning homework. Certain problems, marked with an icon , help build business writing skills.
- Each Brief Exercise, Exercise, and Problem has a **description of the concept** covered and is keyed to the Study Objectives.
- **Spreadsheet Exercises and Problems**, identified by

an icon, can be solved using *Solving Managerial Accounting Problems Using Excel*.

Expanding and Applying Knowledge

Broadening Your Perspective is a unique section at the end of each chapter that offers a wealth of resources to help instructors and students pull together the learning for the chapter. This section offers problems and projects for those instructors who want to broaden the learning experience by bringing in more real-world decision making, analysis, and critical thinking activities. The elements of the **Broadening Your Perspective** section are as follows.

- **Group Decision Cases** help students build decision-making skills by analyzing accounting information in a less structured situation. These cases either require evaluation of a manager's decision, or lead to a decision among alternative courses of action. As group activities, these cases promote teamwork and help prepare students for the business world, where they will be working with teams of people.
- Like the decision cases, the **Managerial Analysis** assignments build analytical and decision-making skills in problematic situations encountered by business managers. They also require the application of business communication skills.
- The **Real-World Focus** problems ask students to apply techniques and concepts presented in the chapter to specific situations faced by actual companies.
- **Communication Activities** give students practice in communicating to different audiences in varying modes—letters, reports, memos, explanations, and analyses. These are skills much in demand by employers.
- Since the ability to read and understand business publications is an asset used over the span of one's career, **Research Assignments** direct students to annual reports or articles published in the *Wall Street Journal* and other popular business periodicals for further study and analysis of key topics.
- **Ethics Cases** contain ethical dilemmas and ask students to analyze the situation, identify the stakeholders affected, describe the ethical issues involved, and decide on an appropriate course of action.

Cases for Management Decision Making, provided at the end of the text, require students to use the decision tools presented in the chapters in realistic business situations. The cases can be used as a comprehensive capstone activity at the end of the course, or as a recurring activity during the course. They are intended to be richer and more challenging than a traditional problem but are still targeted at an introductory level student.

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Jerry J. Weygandt / Donald E. Kieso / Paul D. Kimmel

STUDENT OWNER'S MANUAL

HOW TO USE THE STUDY AIDS IN THIS BOOK

CHAPTER 2

Job Order Cost Accounting

STUDY OBJECTIVES

After studying this chapter, you should be able to:

- 1 Explain the characteristics and purposes of cost accounting.
- 2 Describe the flow of costs in a job order cost accounting system.
- 3 Explain the nature and importance of a job cost sheet.
- 4 Indicate how the predetermined overhead rate is determined and used.
- 5 Prepare entries for jobs completed and sold.
- 6 Distinguish between under- and overapplied manufacturing overhead.

THE NAVIGATOR

- Scan Study Objectives
- Read Feature Story
- Read Preview
- Read text and answer Before You Go On p. 48 p. 59 p. 66
- Work Using the Decision Toolkit
- Review Summary of Study Objectives
- Work Demonstration Problem
- Answer Self-Study Questions
- Complete Assignments

FEATURE STORY

"... AND WE'D LIKE IT IN RED"

Western States Fire Apparatus, Inc., of Cornelius, Oregon, is one of the few U.S. companies that makes fire trucks. The company builds about 25 trucks per year. Founded in 1941, the company is run by the children and grandchildren of the original founder. "We buy the chassis, which is the cab and the frame," says Susan Scott, the company's bookkeeper. "In our computer, we set up an account into which all of the direct material that is purchased for that particular job is charged." Other direct materials include the water pump—which can cost \$10,000—the ladders, and hoses. labor, the production workers fill that tell what jobs they worked on. company is building four trucks at any

The **Navigator** is a learning system designed to guide you through each chapter and help you succeed in learning the material. It consists of (1) a checklist at the beginning of the chapter, which outlines text features and study skills you will need, and (2) a series of check boxes that prompt you to use the learning aids in the chapter and set priorities as you study.

STUDY OBJECTIVES at the beginning of each chapter provide you with a framework for learning the specific concepts and procedures covered in the chapter. Each study objective reappears in the margin at the point where the concept is discussed. Finally, you can review off the study objectives in the **Summary** at the end of the chapter text.

The **Feature Story** helps you picture how the chapter topic relates to the real world of accounting and business. References to the Feature Story throughout the chapter will help you put new ideas in context, organize them, and remember them. Many vignettes end with the Internet addresses of the companies cited in the story.

The **Preview** begins by linking the Feature Story with the major topics of the chapter. It then shows a graphic outline of major topics and subtopics that will be discussed. This narrative and visual preview gives you a mental framework upon which to arrange the information you are learning.

STUDY OBJECTIVES reappear in the margins at the point where the related topic is discussed. End-of-chapter assignments are keyed to Study Objectives.

PREVIEW OF CHAPTER 2

The Feature Story about Western States Fire Apparatus described the manufacturing costs used in making a fire truck. It demonstrated that accurate costing is critical to the company's success. For example, in order to submit accurate bids on new jobs and to know whether it profited from past jobs, the company needs a good costing system. This chapter illustrates how these manufacturing costs would be assigned to specific jobs, such as the manufacture of individual fire trucks. We begin the discussion in this chapter with an overview of the flow of costs in a job order cost accounting system. We then use a case study to explain and illustrate the documents, entries, and accounts in this type of cost accounting system.

The content and organization of Chapter 2 are as follows.

JOB ORDER COST ACCOUNTING

- Cost Accounting Systems
 - Job order cost system
 - Process cost system
- Job Order Cost Flow
 - Accumulating manufacturing costs
 - Assigning manufacturing costs to work in process
 - Assigning costs to finished goods
 - Assigning costs to cost of goods sold
 - Summary
- Reporting Job Cost Data
- Under- or Overapplied Manufacturing Overhead
 - Interim balances
 - Year-end balance

COST ACCOUNTING SYSTEMS

STUDY OBJECTIVE

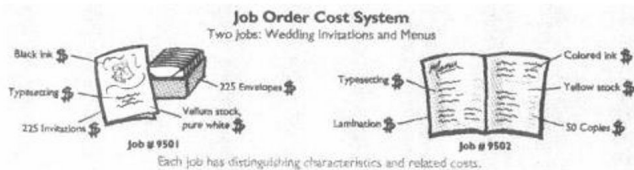
Explain the characteristics and purposes of cost accounting.

Cost accounting involves the measuring, recording, and reporting of product costs. From the data accumulated, both the total cost and the unit cost of each product is determined. The accuracy of the product cost information produced by the cost accounting system is critical to the success of the company. As you will see in later chapters, this information is used to determine which products to produce, what price to charge, and the amounts to produce. Accurate product cost information is also vital for effective evaluation of employee performance.

An important feature of a job order cost system is that each job (or batch) has its own distinguishing characteristics. For example, each house is different. Similarly, each consulting engagement by a CPA firm is unique, and each printing job is different. **The objective is to compute the cost per job.** At each point in the manufacturing of a product or the providing of a service, the job and its associated costs can be identified. A job order cost system measures costs for each completed job, rather than for set time periods. The recording of costs in a job order cost system is shown in Illustration 2-1.

Key terms and concepts are printed in blue where they are first explained in the text. They are listed and defined again in the end-of-chapter **Glossary**.

Illustration 2-1 Job order cost system

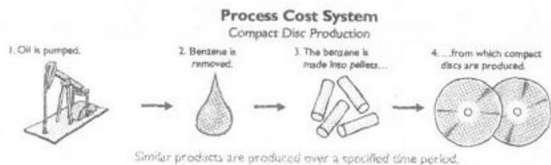


Color illustrations visually reinforce important concepts and therefore often contain material that may appear on exams. **Infographics**, a special type of illustration, pictorially link concepts to the real world and provide visual reminders of key concepts.

PROCESS COST SYSTEM

PROCESS COST SYSTEM is used when a series of connected manufacturing processes or departments produce a large volume of similar products. Production is continuous to ensure that adequate inventories of the finished product(s) are on hand. A process cost system is used in the manufacture of cereal by Kellogg's, the refining of petroleum by **Exxon Mobil**, and the production of automobiles by **General Motors**. Process costing accumulates product-related costs for a **period of time** (such as a week or a month) instead of assigning costs to **specific products or job orders**. In process costing, the costs are assigned to departments or processes for a set period of time. The recording of costs in a process cost system is shown in Illustration 2-2. The process cost system will be discussed further in Chapter 3.

Illustration 2-2 Process cost system



Wallace Manufacturing Company
Job Cost Sheet

Job No. _____ Date Started _____ Date Completed _____	Quantity _____ Date Requisitioned _____ Date Completed _____
---	--

Date	Direct Materials	Direct Labor	Manufacturing Overhead

If completed job consists of:	
materials	\$ _____
labor	_____
manufacturing overhead	_____
Total cost	\$ _____
Unit cost (total dollars ÷ quantity)	\$ _____

A separate job cost sheet is kept for each job. The job cost sheets constitute the subsidiary ledger for the Work in Process Inventory account. **Each entry to Work in Process Inventory must be accompanied by a corresponding posting to one or more job cost sheets.**

Business Insight examples give you more glimpses into how real companies make decisions using accounting information. These high-interest boxes are classified by four different points of view—management perspectives, international perspectives, service company perspectives, and e-business insights.



P -- BUSINESS INSIGHT

General Motors recently launched a new Internet-based ordering system intended to deliver custom vehicles in 15 to 20 days, instead of the 55 to 60 days it previously took. Customers interested in a GM car can search online to see if any dealers have a car with the options they want. If not, the customer uses an online program to configure the desired options and then places the order. While this online approach could potentially provide savings for automakers by reducing inventory costs, some people are skeptical. One auto analyst stated, "I don't think it's going to lead to a massive change in the way vehicles are built and sold in the next 10 years."

Source: Karen Lundegaard, "GM Tests Web-Based Ordering System, Seeking to Slash Customer-Delivery Time," *Wall Street Journal*, November 17, 2000.

Raw Materials Costs

Raw materials costs are assigned when the materials are issued by the storeroom. To achieve effective internal control over the issuance of materials, the storeroom worker should receive a written authorization before materials are released to production. Such authorization for issuing raw materials is made on a prenumbered materials requisition slip. This form is signed by an au-

Helpful Hints in the margins are like having an instructor with you as you read. They further clarify concepts being discussed.

Helpful Hint Approvals are an important part of a materials requisition slip because they help to establish individual accountability over inventory.

One of the special types of **Business Insight** boxes, **Service Company Perspectives** highlight accounting practices in this growing segment of our economy.



BUSINESS INSIGHT

Service Company Perspective

Frequently when we think of service companies we think of specific, nonroutine tasks, such as rebuilding an automobile engine, providing consulting services on a business acquisition, or working on a major lawsuit. Clearly, such nonroutine situations would call for job order costing. However, many service companies specialize in performing repetitive, routine aspects of a particular business. For example, auto-care vendors such as Jiffy Lube focus on the routine aspects of car care. H&R Block focuses on the routine aspects of basic tax practice, and many large law firms focus on routine legal services, such as uncomplicated divorces. For service companies that perform routine, repetitive services, process costing provides a simple solution to their accounting needs. In fact, since in many instances there is little or no work in process at the end of the period, applying process costing in this setting can be even easier than for a manufacturer.

of \$22,400 to Work in Process Inventory equals the sum of the overhead assigned to jobs: Job 101 \$12,000 + Job 102 \$7,200 + Job 103 \$3,200.

At the end of each month, the balance in Work in Process Inventory should equal the sum of the costs shown on the job cost sheets of unfinished jobs. Assuming that all jobs are unfinished, proof of the agreement of the control and subsidiary accounts in Wallace Manufacturing is shown below.

Work in Process Inventory		Job Cost Sheets	
Jan. 31	24,000	No. 101	\$39,000
31	28,000	102	23,200
31	22,400	103	12,200
	74,400		\$74,400

Illustration 2-15 Proof of job cost sheets to work in process inventory

DECISION TOOLKIT

Decision Checkpoints	Info Needed for Decision	Tool to Use for Decision	How to Evaluate Results
What is the cost of a job?	Cost of materials, labor, and overhead assigned to a specific job	Job cost sheet	Compare costs to those of previous periods and to those of competitors to ensure that costs are in line. Compare costs to expected selling price or service fees charged to determine overall profitability.

Each chapter presents **decision tools** that help decision makers analyze and solve business problems. At the end of the text discussion, a **Decision Toolkit** summarizes the key features of a decision tool and reviews why and how you would use it.

BEFORE YOU GO ON . . .

◆ Review It

1. What source documents are used in assigning manufacturing costs to Work in Process Inventory?
2. What is a job cost sheet, and what is its primary purpose?
3. What is the formula for computing a predetermined overhead rate?

◆ Do It

Danielle Company is working on two job orders. The job cost sheets show the following:

Direct materials—Job 120 \$6,000, Job 121 \$3,600
Direct labor—Job 120 \$4,000, Job 121 \$2,000
Manufacturing overhead—Job 120 \$5,000, Job 121 \$2,500

Prepare the three summary entries to record the assignment of costs to Work in Process from the data on the job cost sheets.

Action Plan

- Recognize that Work in Process Inventory is the control account for all unfinished job cost sheets.

Before You Go On sections follow each key topic. **Review It** questions prompt you to stop and review the key points you have just studied. If you cannot answer these questions, you should go back and read the section again.

Brief **Do It** exercises ask you to put to work your newly acquired knowledge. They outline an **Action Plan** necessary to complete the exercise, and the **Solution** helps you see how the exercise should be solved. The **Do It** exercises are keyed to similar homework exercises.

60 CHAPTER 2 Job Order Cost Accounting

- Debit Work in Process Inventory for the materials, labor, and overhead charged to the job cost sheets.
- Credit the accounts that were debited when the manufacturing costs were accumulated.

Solution: The three summary entries are:

Work in Process Inventory (\$6,000 + \$3,600)	9,600	9,600
Raw Materials Inventory (To assign materials to jobs)		
Work in Process Inventory (\$4,000 + \$2,000)	6,000	6,000
Factory Labor (To assign labor to jobs)		
Work in Process Inventory (\$5,000 + \$2,500)	7,500	7,500
Manufacturing Overhead (To assign overhead to jobs)		



Related exercise material: BE2-3, BE2-4, BE2-7, E2-2, E2-3, E2-7, and E2-8.

BEFORE YOU GO ON . . .

◆ Review It

1. When are entries made to record the completion and sale of a job?
2. What costs are included in total manufacturing costs in the cost of goods manufactured schedule?
3. How is under- or overapplied manufacturing overhead reported in monthly financial statements?



USING THE DECISION TOOLKIT

Martinez Building Products Company is one of the largest manufacturers and marketers of unique, custom-made residential garage doors in the U.S. as well as a major supplier of industrial and commercial doors, grills, and counter shutters for the new construction, repair, and remodel markets. Martinez has developed plans for continued expansion of a network of service operations that sell, install, and service manufactured fireplaces, garage doors, and related products.

Martinez uses a job cost system and applies overhead to production on the basis of direct labor cost. In computing a predetermined overhead rate for the year 2002, the company estimated manufacturing overhead to be \$24 million and direct labor costs to be \$20 million. In addition the following information is provided.

Actual costs incurred during 2002

Direct materials used	\$30,000,000
Direct labor cost incurred	21,000,000

Manufacturing costs incurred during 2002

Insurance, factory	\$ 500,000
Indirect labor	7,500,000
Maintenance	1,000,000
Rent on building	11,000,000
Depreciation on equipment	2,000,000

Instructions

Answer each of the following.

- (a) Why is Martinez Building Products system?
- (b) On what basis does Martinez allocate the predetermined overhead rate?
- (c) Compute the amount of the under-
- (d) Martinez had balances in the beginning finished goods accounts as follows.

	1/1/02
Work in process	\$ 5,000
Finished goods	13,000

Determine the (1) cost of goods manufactured for Martinez during 2002. Assume that the predetermined overhead rate should be included in the cost.

A Using the Decision Toolkit exercise follows the final set of **Review It** questions in the chapter. It asks you to use business information and the decision tools presented in the chapter. You should think through the questions related to the decision before you study the printed **Solution**.

- (e) During 2002, Job G408 was started and completed. Its cost sheet showed a total cost of \$100,000, and the company prices its product at 50% above its cost. What is the price to the customer if the company follows this pricing strategy?

Solution

- (a) The company is using a job order system because each job (or batch) must have its own distinguishing characteristics. For example, each type of garage door would be different, and therefore a different cost per garage door should be assigned.

- (b) The company allocates its overhead on the basis of direct labor cost. The predetermined overhead rate is 120%, computed as follows.

$$\$24,000,000 \div \$20,000,000 = 120\%$$

(c)	Actual manufacturing overhead	\$22,000,000
	Applied overhead cost (\$21,000,000 × 120%)	<u>25,200,000</u>
	Overapplied overhead	<u>\$ 3,200,000</u>
(d) (1)	Work in process, 1/1/02	\$ 5,000,000
	Direct materials used	30,000,000
	Direct labor	21,000,000
	Manufacturing overhead applied	<u>25,200,000</u>
	Total manufacturing costs	<u>76,200,000</u>
	Total cost of work in process	81,200,000
	Less: Work in process, 12/31/02	<u>4,000,000</u>
	Cost of goods manufactured	<u>\$77,200,000</u>
(2)	Finished goods inventory, 1/1/02	\$13,000,000
	Cost of goods manufactured (see above)	<u>77,200,000</u>
	Cost of goods available for sale	90,200,000
	Finished goods inventory, 12/31/02	<u>11,000,000</u>
	Cost of goods sold (unadjusted)	79,200,000
	Less: Overapplied overhead	<u>3,200,000</u>
	Cost of goods sold	<u>\$76,000,000</u>

(e)	G408 cost	\$ 100,000
	Markup percentage	× 50%
	Profit	<u>\$ 50,000</u>
	Price to customer: \$150,000 (\$100,000 + \$50,000)	







The **Summary of Study Objectives** reviews the main points related to the Study Objectives. It provides you with another opportunity to review what you have learned as well as to see how the key topics within the chapter fit together.

SUMMARY OF STUDY OBJECTIVES

◆ **Explain the characteristics and purposes of cost accounting.** Cost accounting involves the procedures for measuring, recording, and reporting product costs. From the data accumulated, the total cost and the unit cost of each product is determined. The two basic types of cost accounting systems are job order cost and process cost.

◆ **Describe the flow of costs in a job order cost accounting system.** In job order cost accounting, manufacturing costs are first accumulated in three accounts: Raw Materials Inventory, Factory Labor, and Manufacturing Overhead. The accumulated costs are then assigned to Work in Process Inventory and eventually to Finished Goods Inventory and Cost of Goods Sold.

DECISION TOOLKIT—A SUMMARY

Decision Checkpoints 	Info Needed for Decision 	Tool to Use for Decision 	How to Evaluate Results 
What is the cost of a job?	Cost of material, labor, and overhead assigned to a specific job	Job cost sheet	Compare costs to those of previous periods and to those of competitors to ensure that costs are in line. Compare costs to expected selling price or service fees charged to determine overall profitability.
Has the company over- or underapplied overhead for the period?	Actual overhead costs and overhead applied	Manufacturing overhead account	If the account balance is a credit, overhead applied exceeded actual overhead costs. If the account balance is a debit, overhead applied was less than actual overhead costs.

At the end of each chapter, the **Decision Toolkit—A Summary** reviews the contexts and techniques useful for decision making that were covered in the chapter.

GLOSSARYKey Term Matching Activity 

Cost accounting An area of accounting that involves measuring, recording, and reporting product costs. (p. 46)

Cost accounting system Manufacturing cost accounts that are fully integrated into the general ledger of a company. (p. 46)

Job cost sheet A form used to record the costs chargeable to a job and to determine the total and unit costs of the completed job. (p. 51)

Job order cost system A cost accounting system in which costs are assigned to each job or batch. (p. 47)

Materials requisition slip A document authorizing the issuance of raw materials from the storeroom to production. (p. 52)

Overapplied overhead A situation in which overhead assigned to work in process is greater than the overhead incurred. (p. 64)

Predetermined overhead rate A rate based on the relationship between estimated annual overhead costs and expected annual operating activity, expressed in terms of a common activity base. (p. 57)

Process cost system A system of accounting used by companies that manufacture relatively homogeneous products through a series of continuous processes or operations. (p. 47)

Summary entry A journal entry that summarizes the totals from multiple transactions. (p. 51)

Time ticket A document that indicates the employee, the hours worked, the account and job to be charged, and the total labor cost. (p. 55)

Underapplied overhead A situation in which overhead assigned to work in process is less than the overhead incurred. (p. 64)

The **Glossary** defines all the key terms and concepts introduced in the chapter. Page references help you find any terms you need to study further. A **CD icon** tells you that there is a Key Term Matching Activity on the CD that can help you master the material.

A **Demonstration Problem** is the final step before you begin homework. These sample problems provide you with an **Action Plan** in the margin that lists the strategies needed to approach and solve the problem. The **Solution** demonstrates both the form and content of complete answers. A **Web icon** tells you that there is an additional **Demonstration Problem** you can work on the book's Web site and self-grade using eGrade software.

Demonstration Problem **69****DEMONSTRATION PROBLEM**

During February, Cardella Manufacturing works on two jobs: A16 and B17. Summary data concerning these jobs are as follows.

Manufacturing Costs Incurred

Purchased \$54,000 of raw materials on account.
Factory labor \$76,000, plus \$4,000 employer payroll taxes.
Manufacturing overhead exclusive of indirect materials and indirect labor \$59,800.

Assignment of Costs

Direct materials: Job A16 \$27,000, Job B17 \$21,000
Indirect materials: \$3,000
Direct labor: Job A16 \$52,000, Job B17 \$26,000
Indirect labor: \$2,000
Manufacturing overhead rate: 80% of direct labor costs.

Job A16 was completed and sold on account for \$150,000. Job B17 was only partially completed.

Instructions

- Journalize the February transactions in the sequence followed in the chapter.
- What was the amount of under- or overapplied manufacturing overhead?

Solution to Demonstration Problem

(a)	Feb. 28	1.			
		Raw Materials Inventory	54,000		
		Accounts Payable		54,000	
		(Purchase of raw materials on account)			
28		2.			
		Factory Labor	80,000		
		Factory Wages Payable		76,000	
		Employer Payroll Taxes Payable		4,000	
		(To record factory labor costs)			
28		3.			
		Manufacturing Overhead	59,800		
		Accounts Payable, Accumulated Depreciation, and Prepaid Insurance		59,800	
		(To record overhead costs)			
28		4.			
		Work in Process Inventory	48,000		
		Manufacturing Overhead	3,000		
		Raw Materials Inventory		51,000	
		(To assign raw materials to production)			
28		5.			
		Work in Process Inventory	78,000		
		Manufacturing Overhead	2,000		
		Factory Labor		80,000	
		(To assign factory labor to production)			
28		6.			
		Work in Process Inventory	62,400		
		Manufacturing Overhead		62,400	
		(To assign overhead to jobs— 80% × \$78,000)			

Action Plan

- In accumulating costs, debit three accounts: Raw Materials Inventory, Factory Labor, and Manufacturing Overhead.
- When Work in Process Inventory is debited, credit one of the three accounts listed above.
- Debit Finished Goods Inventory for the cost of completed jobs. Debit Cost of Goods Sold for the cost of jobs sold.
- Overhead is underapplied when Manufacturing Overhead has a debit balance.