



# Cost Management

Accounting and Control

fourth edition

marketing

economics

management

e-commerce

finance

information  
systems

Hansen | Mowen

# **Cost Management**

## **Accounting and Control**

**fourth edition**

**Don R. Hansen**

Oklahoma State University

**Maryanne M. Mowen**

Oklahoma State University

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South-Western,  
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To Our Parents  
Lindell and Leola Wise and  
John L. Myers and Marjorie H. Myers



**O**ver the past twenty years, changes in the business environment have profoundly affected cost accounting and cost management. A few examples of these changes are an increased emphasis on providing value to customers, total quality management, time as a competitive element, advances in information and manufacturing technology, globalization of markets, service industry growth, deregulation, and heightened awareness of ethical and environmental business practices. These changes are driven by the need to create and sustain a competitive advantage. For many firms, the information required to realize a competitive advantage can no longer be derived from a traditional cost management information system. The traditional system relies on functional-based costing and control. In a functional-based system, costing and control are centered on organizational functions. Unfortunately, this functional-based approach often fails to provide information that is detailed, accurate, and timely enough to support the requirements of this new environment. This has resulted in the emergence of an activity-based cost management system. Typically, an activity-based cost management system is more detailed and more accurate than a functional-based cost management system and, thus, more costly to operate. Furthermore, the need to add a formal guidance mechanism to the new activity-based system has created a demand for strategic-based cost management. Thus, the new cost management system might be more accurately referred to as an activity- and strategic-based cost management system. The emergence and acceptance of activity- and strategic-based cost management therefore suggests that in many cases the benefits of this more sophisticated system outweigh its costs. On the other hand, the continued existence and reliance on functional-based systems suggests the opposite for other firms.

The coexistence of functional-based systems with activity- and strategic-based cost management systems necessitates the study of both systems, thus providing flexibility and depth of understanding. Thus, in creating a text on cost management, we had to decide how to design its structure. We believe that a systems approach provides a convenient and logical framework. Using a systems framework allows us to make a clear distinction between the functional- and activity-based approaches in a way that students can easily grasp. It also avoids any artificial “integration” of the two systems. Integration is achieved by developing a common terminology—a terminology that allows us to define each system and discuss how they differ. We then discuss in separate sections the functional- and activity-based approaches to costing and control. We believe this separation minimizes confusion and allows students to appreciate the differences that exist between functional- and activity-based approaches. It also permits an emphasis on either the functional- or activity-based approach, depending on preferences. However, we did not follow the same pattern for the chapters on decision making. For these chapters, we felt that it would be more useful for students to see how decisions change as the information sets change. For example, how does a make-or-buy decision change as we move from a functional-based, traditional cost management system to the richer, activity-based cost management system?

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## Audience

This text is written primarily for students at the undergraduate level. The text presents a thorough treatment of traditional and contemporary approaches to cost management, accounting, and control and can be used for a one- or two-semester course. In our opinion, the text also has sufficient depth for graduate-level courses. In fact, we have successfully used the text at the graduate level.

We feel that the text offers a number of distinctive and appealing features—features that should make it much easier to teach students about the emerging themes in today's business world. One of our objectives was to reduce the time and resources expended by instructors so that students can be exposed to today's topics and practices. To help you understand the text's innovative approach, we have provided a detailed description of its key features.

### Structure

The text's organization follows a systems framework and is divided into four parts:

1. *Part 1: Foundation Concepts.* Chapters 1 through 3 introduce the basic concepts and tools associated with cost management information systems.
2. *Part 2: Functional-Based Costing and Control.* Chapters 4 through 11 provide thorough coverage of product costing, planning, and control in a functional-based system.
3. *Part 3: Activity and Strategic-Based Costing and Control.* Chapters 12 through 19 present the key elements of the new cost management approaches. Examples of the topics covered in this section include activity-based costing, strategic cost management, activity-based budgeting, activity-based management, process value analysis, target costing, kaizen costing, quality costing, productivity, environmental cost management, and the Balanced Scorecard.
4. *Part 4: Activity- and Functional-Based Decision Making.* Chapters 20 through 24 bring the functional-based and activity-based costing approaches together in the discussion of decision making.

The book's structure now permits continuous coverage of each system's features. For example, after covering the first three chapters, those wishing to emphasize the activity- and strategic-based approaches may then immediately go to Part 3 and cover the chapters there in sequence. This provides the ability to present the activity- and strategic-based system as a whole rather than in pieces. A similar approach is available for functional-based costing in Part 2.

### Contemporary Topics

The emerging themes of cost management are covered in depth. We have provided a framework for comprehensively treating both functional-based and activity-based topics. A common terminology links the two approaches; however, the functional- and activity-based approaches differ enough to warrant separate and comprehensive treatments. The nature and extent of the coverage of contemporary topics is described below. As this summary reveals, there is sufficient coverage of activity- and strategic-based topics to provide a course that strongly emphasizes these themes.

**Historical Perspective** Chapter 1 provides a brief history of cost accounting. The historical perspective allows students to see why functional-based cost management systems work well in some settings but no longer work for other settings. The forces that are changing cost management practices are described. The changing role of the management accountant is also covered with particular emphasis on why the need to develop a cross-functional expertise is so critical in today's environment.

**Value Chain Analysis** The provision of value to customers is illustrated by the internal value chain, which is first introduced in Chapter 1 and defined and illustrated more completely in Chapter 2. Chapter 13 provides a detailed discussion of value chain analysis and introduces the industrial value chain. Value chain analysis means that managers must understand and exploit internal and external linkages so that a sustainable competitive advantage can be achieved. Exploitation of these linkages requires a detailed understanding of the costs associated with both internal and external factors. This edition expands the treatment of value chain analysis by introducing, defining, and illustrating activity-based supplier costing and activity-based customer costing. The costing examples developed show how the value chain concepts can be operationalized—a characteristic



not clearly described by other treatments. Thus, we believe that the operational examples are a significant feature of the text.

**Accounting and Cost Management Systems** In Chapter 2, the accounting information system and its different subsystems are defined. Distinctions are made between the financial accounting and the cost management information systems and the differing purposes they serve. The cost management information system is broken down into the cost accounting information system and the operational control system. The differences between functional-based and activity-based cost management systems are defined and illustrated. The criteria for choosing an activity-based system over a functional-based system are also discussed.

In Chapter 2, three methods of cost assignment are delineated: direct tracing, driver tracing, and allocation. Activity drivers are also defined. Once the general cost assignment model is established, the model is used to help students understand the differences between functional-based and activity-based cost management systems. A clear understanding of how the two systems differ is fundamental to the organizational structure that the text follows.

**Activity-Based Costing** Much has been written on the uses and applications of ABC. This text presents a comprehensive approach to activity-based costing and management. The activity-based product costing model is introduced in Chapter 2 and described in detail in Chapter 12. In Chapter 12, the advantages of ABC over functional-based costing are related. A completed discussion of how to design an ABC system is given. This includes identifying activities, creating an activity dictionary, assigning costs to activities, classifying activities as primary and secondary, and assigning costs to products. The use of homogeneous cost pools to reduce the number of activity rates is also covered.

To fully understand how an ABC system works, students must understand the data needed to support the system. Thus, we show (in Chapter 12) how the general ledger system must be unbundled to provide activity information. We also define and illustrate an ABC relational data base. This unique feature of the text helps the student understand the very practical requirements of an ABC system.

Activity costs change as activity usage changes. Chapter 3 is a comprehensive treatment of cost behavior. First, we define variable, fixed, and mixed activity cost behavior. Then, we discuss the activity resource usage model and detail the impact of flexible and committed resources on cost. Finally, we describe the methods of breaking out fixed and variable activity costs. This text goes further than the typical one in explaining to students how to use the computer spreadsheet programs to perform regression analysis. The chapter on cost behavior analysis is more general than usual chapters that treat the subject. Traditional treatment usually focuses on cost as a function of production volume. We break away from this pattern and focus on cost as a function of changes in activity usage with changes in production activity as a special case.

The activity resource usage model is used to define activity cost behavior (in terms of when resources are acquired) and is defined and discussed in Chapter 3. This resource usage model plays an important role in numerous contemporary applications. It is used in value chain analysis (Chapter 13), activity-based management (Chapter 15), and tactical decision and relevant costing analysis (Chapter 21). The extensive applications of the activity resource usage model represent a unique feature of the text.

**Activity-Based Budgeting** Chapter 16 is a new chapter, reflecting the emergence of budgeting that uses the power of activity-based cost concepts. This chapter introduces the basics of activity-based budgeting and gives an expanded example in a service setting. Flexible budgeting and the behavioral impact of budgets are also included in this chapter.

**Just-in-Time Effects** JIT manufacturing and purchasing are defined and their own cost management practices discussed in Chapters 9 and 24. JIT is compared and contrasted with traditional manufacturing practices. The effects on areas such as cost traceability, inventory management, product costing, and responsibility accounting are carefully delineated.

**Life Cycle Cost Management** In Chapter 13, we define and contrast three different life cycle viewpoints: production life cycle, marketing life cycle, and consumable life cycle. We then show how these concepts can be used for strategic planning and analysis. In later chapters, we show how life cycle concepts are useful for pricing and profitability analysis (Chapter 22). The use of life cycle costing for environmental cost management is also discussed (Chapter 19). The breadth, depth, and numerous examples illustrating life cycle cost applications allow the student to see the power and scope of this methodology.

**Activity-Based Management and the Balanced Scorecard** There are three types of responsibility accounting systems: functional-based, activity-based, and strategic-based. These three systems are compared and contrasted, and the activity- and strategic-based responsibility accounting systems are discussed in detail. Activity-based responsibility accounting focuses on controlling and managing processes. The mechanism for doing this process value analysis is defined and thoroughly discussed in Chapter 15. Numerous examples are given to facilitate understanding. Value-added and nonvalue-added cost reports are described. Activity-based responsibility accounting also covers activity measures of performance, which are thoroughly covered in Chapter 15.

The Balanced Scorecard is equivalent to what we are calling strategic-based responsibility accounting. The basic concepts and methods of the Balanced Scorecard are presented in Chapter 14.

**Costs of Quality: Measurement and Control** Often, textual treatments simply define quality costs and present cost of quality reports. We go beyond this simple presentation (in Chapter 17) and discuss cost of quality performance reporting. We also describe quality activities in terms of their value-added content. Finally, we introduce and describe ISO 9000, an important quality assurance and reporting system that many firms must now follow.

**Productivity: Measurement and Control** The new manufacturing environment demands innovative approaches to performance measurement. Productivity is one of these approaches, yet it is either only superficially discussed in most cost and management accounting texts or not treated at all. In Chapter 18, we offer a thorough treatment of the topic, including some new material on how to measure activity and process productivity.

**Strategic Cost Management** A detailed introduction to strategic cost management is provided in Chapter 13. Understanding strategic cost analysis is a vital part of the new manufacturing environment. Strategic cost management is defined and illustrated. Strategic positioning is discussed. Structural and executional cost drivers are introduced. Value chain analysis is described with the focus on activity-based supplier and customer costing. The role of target costing in strategic cost management is also emphasized.

**Environmental Costs: Measurement and Control** Chapter 19 reflects the growing strategic importance of environmental cost management. This chapter introduces and discusses the concept of ecoefficiency. It also defines, classifies, and illustrates the reporting of environmental costs and how to assign those costs to products and processes. The role of life-cycle costing in environmental cost management is detailed. Finally, ways the Balanced Scorecard can be extended to include an environmental perspective are described.

**Theory of Constraints** We introduce the theory of constraints (TOC) in Chapter 24. A linear programming framework is used to facilitate the description of TOC and provide a setting where students can see the value of linear programming. In fact, our treatment of linear programming is motivated by the need to develop the underlying concepts so that TOC can be presented and discussed. This edition expands the coverage of TOC by adding a discussion of constraint accounting.



### **Service Sector Focus**

The significance of the service sector is recognized in this text through the extensive application of cost management principles to services. The text explains that services are not simply less complicated manufacturing settings but instead have their own characteristics. These characteristics require modification of cost management accounting principles. Sections addressing services appear in a number of chapters, including product costing, pricing, and quality and productivity measurement.

### **Professional Ethics**

Strong professional ethics need to be part of every accountants' personal foundation. We are convinced that students are interested in ethical dimensions of business and can be taught areas in which ethical conflicts occur. Chapter 1 introduces the role of ethics and reprints the ethical standards developed by the Institute of Management Accountants. To reinforce coverage of ethics, every chapter includes an ethics case for discussion. In addition, many chapters include sections on ethics. For example, Chapter 22, on pricing and revenue analysis, includes material on the ethical dimensions of pricing. Chapter 11, on international issues, explores the dilemmas of differing ethical systems throughout the world.

### **Behavioral Issues**

Ethical behavior is just one aspect of human behavior that is affected by cost management systems. The systems used for planning, control, and decision making can affect the way in which people act. Insights from behavioral decision theory are presented in appropriate sections of the text. For example, a discussion of the ways profit measurement can affect people's behavior is included in Chapter 22. Chapter 16, on activity-based budgeting, includes a section on the behavioral impact of budgets. We believe that an integration of behavioral issues with accounting issues leads to a more complete understanding of the role of the accountant today.

### **Real World Examples**

Our years of experience in teaching cost and management accounting have convinced us that students like and understand real world applications of accounting concepts. These real world examples make the abstract accounting ideas concrete and provide meaning and color. Besides, they're interesting and fun. Therefore, real world examples are integrated throughout every chapter. Use of color for company names that appear in the chapters and the company index at the end of the text will help you locate these examples. In addition, URLs of companies with home pages on the World Wide Web are provided to give students easy access to the cost management information provided there.

### **Outstanding Pedagogy**

We think of this text as a tool that can help students learn cost accounting and cost management concepts. Of paramount importance is text readability. We have tried to write a very readable text and to provide numerous examples, real world applications, and illustrations of important cost accounting and cost management concepts. Specific "student-friendly" features of the pedagogy include the following:

- Whenever possible, graphical exhibits are provided to illustrate concepts. In our experience, some students need to "see" the concept; thus, we have attempted to portray key concepts to enhance understanding. Of course, many numerical examples are also provided.
- All chapters (except Chapter 1) include at least one review problem and solution. These problems demonstrate the computational aspects of chapter materials and reinforce the students' understanding of chapter concepts before they undertake end-of-chapter materials.
- A glossary of key terms is included at the end of the text. Key terms lists at the end of each chapter identify text pages for fuller explanation.



- All chapters include comprehensive end-of-chapter materials. These are divided into “Questions for Writing and Discussion,” “Exercises,” and “Problems.” The Questions for Writing and Discussion emphasize communication skill development. Exercises and Problems to support every learning objective are included, and the relevant topics and learning objectives are noted in the text margins. The exercises and problems are graduated in difficulty from easy to challenging. CMA exam problems are included to enable the student to practice relevant problem material. Each chapter includes at least one ethics case. All chapters also include a cyber research case to give students practice in doing research on the Internet.
- New to this edition are cooperative learning exercises included in the end-of-chapter materials in each chapter. These exercises encourage students to work in groups to solve cost management problems.
- Spreadsheet template problems are identified in the end-of-chapter materials with an appropriate icon. These problems are designed to help students use spreadsheet applications to solve cost accounting problems.
- At the end of each of the four parts, a comprehensive problem is provided for those instructors who prefer to explore chapter concepts in a more integrated manner. Questions at the end of each comprehensive problem enable the instructor to pick and choose the chapters to be emphasized in the case.

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## Comprehensive Supplements Package

**Check Figures.** Key figures for solutions to selected problems and cases are provided in the solutions manual as an aid to students as they prepare their answers. Instructors may copy and distribute these as they see fit.

**Study Guide, 0-324-13176-3 (Prepared by Al Chen, North Carolina State University).** The study guide provides a detailed review of each chapter and allows students to check their understanding of the material through review questions and exercises. Specifically, students are provided with learning objectives, a chapter summary, a chapter review correlated to the learning objectives, self-test questions and exercises, and a “Can You?” Checklist that helps test their knowledge of key concepts in the chapter. Answers are provided for all assignment material.

**Instructor’s Manual, 0-324-13292-1 (Prepared by John B. Duncan, University of Louisiana at Monroe).** 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 set of transparency masters.

**Solutions Manual, 0-324-13184-4 (Prepared by Don Hansen and Maryanne Mowen).** The solutions manual contains the solutions for all end-of-chapter questions, exercises, and problems. Solutions have been error-checked to ensure their accuracy and reliability.

**Solutions Transparencies, 0-324-13185-2.** Acetate transparencies for selected solutions are available to adopters of the fourth edition.

**Test Bank, 0-324-13287-5 (Prepared by Jane Stoneback, Central Connecticut State University).** Extensively revised for the fourth edition, 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.



**ExamView Testing Software.** This supplement contains all of the questions in the printed test bank. This program is an easy-to-use test creation software compatible with Microsoft Windows. Instructors can add or edit questions, instructions, and answers, and select questions (randomly or numerically) by previewing them on the screen. Instructors can also create and administer quizzes online, whether over the Internet, a local area network (LAN), or a wide area network (WAN).



**Spreadsheet Templates (Prepared by Peggy Hussey).** Spreadsheet templates using Microsoft Excel® provide outlined formats of solutions for selected end-of-chapter exercises and problems. These exercises and problems are identified with a margin symbol. The templates allow students to develop spreadsheet and “what-if” analysis skills.

**PowerPoint Slides (Prepared by C. Douglas Cloud, Pepperdine University).** Selected transparencies of key concepts and exhibits from the text are available in PowerPoint presentation software. These slides provide a comprehensive outline of each chapter.

**Instructor’s Resource CD-ROM, 0-324-13293-X.** Key instructor ancillaries (solutions manual, instructor’s manual, test bank, and PowerPoint slides) are provided on CD-ROM, giving instructors the ultimate tool for customizing lectures and presentations.

**Web Site (<http://hansen.swcollege.com>).** A Web site designed specifically for *Cost Management*, fourth edition, provides online and downloadable resources for both instructors and students. The Web site features an interactive study center organized by chapter, with learning objectives, Web links, glossaries, and online quizzes with automatic feedback.

**WebTutor™ Advantage.** WebTutor Advantage complements *Cost Management*, fourth edition, by providing interactive reinforcement. WebTutor’s online teaching and learning environment brings together content management, assessment, communication, and collaboration capabilities for enhancing in-class instruction or for delivering distance learning. For more information, including a demo, visit <http://webtutor.swcollege.com>.

**BusinessLink Videos.** A series of five videos illustrates key cost accounting concepts including activity-based costing, product costing, and total quality management. These videos feature companies such as Archway Cookies, World Gym, and Symbios Logic. A student workbook and an instructor’s manual are available to accompany the videos.



# a c k n o w l e d g m e n t s

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Don R. Hansen and Maryanne M. Mowen

## a b o u t   t h e   a u t h o r s

### **Don R. Hansen**

Dr. Don R. Hansen is Professor of Accounting at Oklahoma State University. He received his Ph.D. from the University of Arizona in 1977. He has an undergraduate degree in mathematics from Brigham Young University. His research interests include activity-based costing and mathematical modeling. He has published articles in both accounting and engineering journals including *The Accounting Review*, *The Journal of Management Accounting Research*, *Accounting Horizons*, and *IIE Transactions*. He has served on the editorial board of *The Accounting Review*. His outside interests include family, church activities, reading, movies, watching sports, and studying Spanish.

### **Maryanne M. Mowen**

Dr. Maryanne M. Mowen is Associate Professor of Accounting at Oklahoma State University. She received her Ph.D. from Arizona State University in 1979. Dr. Mowen brings an interdisciplinary perspective to teaching and writing in cost and management accounting, with degrees in history and economics. In addition, she does scholarly research in behavioral decision theory. She has published articles in journals such as *Decision Science*, *The Journal of Economics and Psychology*, and *The Journal of Management Accounting Research*. Dr. Mowen's interests outside the classroom include reading, playing golf, traveling, and working crossword puzzles.

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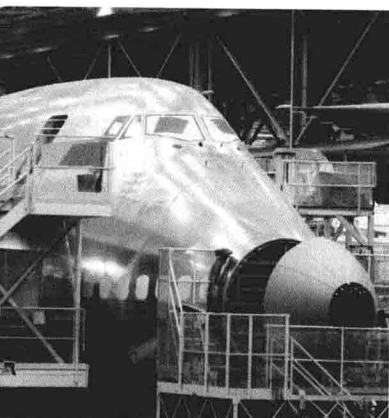
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